

Update of Taiwan's Nationally Determined Contribution

In accordance with the United Nations Framework Convention on Climate Change (UNFCCC) Decision 1/CP.20, Taiwan has proposed its intended nationally determined contribution (INDC) in December 2015. During the first decade where the Paris Agreement entered into force, Taiwan's *Greenhouse Gas Reduction and Management Act* (hereinafter referred to as the "GHG Act") has legislated a path to align with the Paris Agreement's 2°C target. In order to strengthen its ambition and update its target, Taiwan initiated the amendment of the GHG Act, which was subsequently renamed as the *Climate Change Response Act* and passed in January 2023, aims to reach net-zero emissions (1.5°C target) by 2050. Accordingly, Taiwan hereby presents the update of nationally determined contribution with clarity, transparency and understanding, in accordance with Article 4 paragraph 8 of the Paris Agreement, as well as Decision 4/CMA.1 and Decision 1/CMA.3.

1. Fairness and Ambitions

Taiwan made its net-zero pledge in 2021, followed by publishing *Taiwan's Pathway to Net Zero Emissions in 2050* in March 2022, which consists four transition strategies covering Energy, Industrial, Life and Social aspects, as well as two foundations in governance: Technology R&D and Climate Legislation. In addition, 12 key strategies were announced on 28 December 2022, including Wind/Solar PV, Hydrogen, Innovative Energy, Power Systems & Energy Storage, Energy Saving & Efficiency, Carbon Capture, Utilization & Storage (CCUS), Carbon-Free & Electric Vehicles, Resource Recycling & Zero Waste, Carbon Sinks, Green Life, Green Finance, and Just Transition. The net-zero pledge was officially written into law in January 2023.

Taiwan's nationally determined contribution is based on its 2015 INDC, which set a target to reduce net emission by 20% reduction against the reference year (2005) by 2030. The updated nationally determined contribution (NDC) aims to enhance the reduction target further to 23-25% by 2030, with reference to Article 3 of the Paris Agreement (common but differentiated responsibilities) ensure a basis to strengthen reduction ambitions, and endeavor to reach the net-zero emission goal by 2050.

2. Domestic Institutional Arrangements

In response to the Paris Agreement that encourages participation at all levels with more ambitious mitigation actions, the GHG Act was amended and subsequently renamed as the *Climate Change Response Act*, which set a legally binding net-zero target by 2050, to be realized through periodic control targets that are revised every five years in alignment with international ambitions. The *Climate Change Response Act* will be enforced in conjunction with the *Electricity Act* and *Renewable Energy Development Act* for a progressive implementation to effectively manage emissions and increase energy efficiency.

3. Energy Transition

Taiwan has been promoting four major energy transformation strategies of zero nuclear, renewables scale-up, natural gas expansion, and coal reduction since 2016, making improvements to its carbon-intensive energy structure, reducing air pollutants and greenhouse gas emissions while ensuring a stable power supply. Before 2030, the capacity of solar photovoltaics will increase by 2 GW annually, while offshore wind power will increase by 1.5 GW annually. After 2030, renewable energy will continue to scale up, coal will be phased-down, while gas will remain its strategic role in transition, with a pragmatic and dynamic review of emerging alternative energy be conducted. In addition, starting 2020, there would be no plans for new coal-fired power plants, with existing nuclear power plants decommissioned as scheduled, and coal-fired generators gradually replaced by gas-fired units.

4. Green Finance

The Financial Supervisory Commission launched the *Green Finance Action Plan* in 2017 to support and promote the capacity of the private sector to address climate change. The Plan was subsequently updated in 2020 and 2022, where the original version focused on encouraging financial institutions to invest in renewables. The second version (2.0) extended the scope to cover green and sustainability, while the current version (3.0) addresses five key aspects, including the promotion of carbon footprint verification and climate risk management, development of guideline on sustainable financial activities, integration of ESG

(environmental, social, and corporate governance) and climate-related information, enhanced expert training on sustainable finance, and collaboration.

5. Carbon Pricing

Taiwan encourages voluntary greenhouse gas mitigation in the private sector, promotes emission offset mechanisms as the main tools for implementing carbon pricing, allocates reduction credits according to actual reductions. In addition, to increase the flexibility of these tools and improve reduction effectiveness, the *Climate Change Response Act* will introduce carbon fee for emitters as an additional source of special funding dedicated towards mitigation policies, low-carbon or negative emission technology developments, as well as subsidies and rewards, to further advance towards a low-carbon economy.

6. Voluntary cooperation under Article 6 of the Paris Agreement

Taiwan will achieve its NDC targets predominantly through domestic efforts, with an intention to consider NDC targets from partner countries, or Internationally Transferred Mitigation Outcomes (ITMOs) as stated in the Other International Mitigation Purposes (OIMP). Taiwan will promote international cooperation in accordance with Article 6 of the Paris Agreement by implementing necessary rules to ensure environmental integrity, sustainable development, and avoidance of double counting.

7. Adaptation

In accordance with the governance structure stated in the GHG Act, Taiwan approved the *National Climate Change Action Guidelines* and proposed the *National Climate Change Adaptation Action Plan* during the first decade where the Paris Agreement entered into force. The first phase (2013-2017) has accomplished adaptation actions from eight sectors including Disaster, Infrastructure, Water Resources, Land-use, Ocean & Coast, Energy Supply & Industry, Agriculture & Biodiversity, and Health. The second phase (2018-2022) introduced the Capacity Building sector, introduced a package of 125 action plans (87 on-going, 38 newly-introduced), where government agencies further prioritized 71 among the 125 plans. Despite not being a member of the UN,

Taiwan has drafted its Adaptation Communication in 2022, in accordance with Article 7, paragraph 10 of the Paris Agreement, as an effort to publicly disclose its adaptation actions in alignment with the UNFCCC.

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| Information to facilitate clarity, transparency and understanding of nationally determined contributions, referred to in decision 1/CP.21, paragraph 28 (Decision 4/CMA.1 and Annex I) | | |
| 1. Quantifiable information on the reference point (including, as appropriate, a base year): | | |
| (a) | Reference year(s), base year(s), reference period(s) or other starting point(s); | Reference year: 2005 |
| (b) | Quantifiable information on the reference indicators, their values in the reference year(s), base year(s), reference period(s) or other starting point(s), and, as applicable, in the target year; | The reference indicator is the net greenhouse gas (GHG) emissions in MtCO _{2e} . The net greenhouse gas (GHG) emissions in 2005 was 268.3 MtCO _{2e} . |
| (c) | For strategies, plans and actions referred to in Article 4, paragraph 6, of the Paris Agreement, or policies and measures as components of nationally determined contributions where paragraph 1(b) above is not applicable, Parties to provide other relevant information; | |
| (d) | Target relative to the reference indicator, expressed numerically, for example in percentage or amount of reduction; | 25% reduction from the net national GHG emissions compared to the reference year. |
| (e) | Information on sources of data used in quantifying the reference point(s); | The emissions in the reference year (fiscal year 2005) written in the above are based on the National Greenhouse Gas Inventory Report of Taiwan (The GHG inventory) published in August 2022. |
| (f) | Information on the circumstances under which the Party may update the values of the reference indicators. | Reference year and target year emissions will be based on the 1990-2030 Taiwan GHG Inventory published in 2032. |
| 2. Time frames and/or periods for implementation: | | |
| (a) | Time frame and/or period for implementation, including start and end date, consistent with any further relevant decision adopted by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA); | From 1 January 2021 to 31 December 2030 |
| (b) | Whether it is a single-year or multi-year target, as applicable. | Single-year target in 2030 |
| 3. Scope and coverage: | | |
| (a) | General description of the target; | Taiwan aims to reduce its greenhouse gas emissions by 23-25%, which is equivalent to reducing emissions to 201.2-206.6 million t-CO ₂ , in fiscal year 2030 from its fiscal year 2005 levels. |

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| (b) | Sectors, gases, categories and pools covered by the nationally determined contribution, including, as applicable, consistent with Intergovernmental Panel on Climate Change (IPCC) guidelines; | Economy-wide Scope Gases Covered: CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs, SF ₆ , NF ₃ Sectors Covered: Energy; Industrial processes and product use; Agriculture; Land-use, Land-use change and forestry; Waste Percentage of coverage: 100% |
| (c) | How the Party has taken into consideration paragraph 31(c) and (d) of decision 1/CP.21; | Taiwan's scope and coverage include all sectors of anthropogenic emissions and removals. |
| (d) | Mitigation co-benefits resulting from Parties' adaptation actions and/or economic diversification plans, including description of specific projects, measures, and initiatives of Parties' adaptation actions and/or economic diversification plans. | |
| 4. Planning processes: | | |
| (a) | Information on the planning processes that the Party undertook to prepare its nationally determined contribution and, if available, on the Party's implementation plans, including, as appropriate: | |
| (a) (i) | Domestic institutional arrangements, public participation and engagement with local communities and indigenous peoples, in a gender-responsive manner; | To achieve the 2030 Sustainable Development Goals, Taiwan has incorporated a gender perspective, including gender equality in empowerment, into climate action in the SDGs, and aims to strengthen women's participation in addressing climate change, in line with current international trends, including policy decision-making process for environmental issues. |
| (a) (ii) | Contextual matters, including, inter alia, as appropriate: | |
| (a) (ii) a | National circumstances, such as geography, climate, economy, sustainable development and poverty eradication; | Taiwan's second National Communication was published in November 2021, describing national circumstances, including climate, population, and economy. Taiwan published the implementation of the UN Sustainable Development Goals (SDGs) in July 2019, including comprehensive sustainable development and poverty eradication strategies. |
| (a) (ii) b | Best practices and experience related to the preparation of the nationally determined contribution; | In accordance with Article 1 of the UNFCCC/CP.21, paragraphs 24 and 25, Taiwan has updated its intended nationally determined contribution (INDC), proposed in December 2015 as well as in accordance with Article 1/CMA.3, paragraphs 28, updated by the end of 2022. Taiwan adopted the <i>Greenhouse Gas Reduction and Management Act</i> (hereinafter referred to as the "GHG Act") as a low-carbon pathway to link up with the Paris Agreement's 2°C target. |

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| | | <p>To strengthen ambition and update its target, Taiwan has amended the <i>Greenhouse Gas Reduction and Management Act</i> to become the <i>Climate Change Response Act</i>, which was passed in the legislature in January 2023 to achieve the goal of net-zero emissions (1.5°C) by 2050.</p> <p>Accordingly, Taiwan is here to provide clarity, transparency and understanding of the nationally determined contribution in accordance with Article 4.8 of the Paris Agreement and Article 4/CMA.1 and Article 1/CMA.3 of the United Nations Framework Convention on Climate Change (UNFCCC).</p> <p>Taiwan also strengthens the main axis of carbon reduction ambitions, in accordance with the <i>Climate Change Response Act</i> (draft), a five-year phase control target is set gradually, and the <i>National Climate Change Action Guidelines</i> are formulated and demonstrate the basic direction of mitigation and adjustment, put forward the <i>Greenhouse Gas Reduction Action Plans</i>, and <i>Greenhouse Gas Emission Control Action Programs for the Sectors</i>, reflecting Taiwan's economy, energy supplies, and environmental condition, with consideration of the current international situation.</p> <p>The central competent authority's "Greenhouse Gas Emissions Control Action Program" and local governments' "Emission Control Implementation Program" will be enforced together with the <i>Energy Management Act</i> and <i>Renewable Energy Development Act</i> for a progressive implementation to effectively manage greenhouse gases and increase energy efficiency.</p> |
| (a) (ii) c | Other contextual aspirations and priorities acknowledged when joining the Paris Agreement; | |
| (b) | Specific information applicable to Parties, including regional economic integration organizations and their member States, that have reached an agreement to act jointly under Article 4, paragraph 2, of the Paris Agreement, including the Parties that agreed to act jointly and the terms of the agreement, in accordance with Article 4, paragraphs 16–18, of the Paris Agreement; | |
| (c) | How the Party's preparation of its nationally determined contribution has been informed by the outcomes of the global stocktake, in accordance with Article 4, paragraph 9, of the Paris Agreement; | |
| (d) | Each Party with a nationally determined contribution under Article 4 of the Paris Agreement that consists of adaptation action and/or economic diversification plans resulting in mitigation co-benefits consistent with Article 4, paragraph 7, of the Paris Agreement to submit information on: | |
| (d) (i) | How the economic and social consequences of response measures have been considered in developing the nationally determined contribution; | |
| (d) (ii) | Specific projects, measures and activities to be implemented to contribute to mitigation co-benefits, including information on adaptation plans that also yield mitigation co-benefits, which may cover, but are not limited to, key sectors, such as energy, resources, water resources, coastal resources, human settlements and urban planning, agriculture and forestry; and economic diversification actions, which may cover, but are not limited to, sectors such as manufacturing and industry, energy and mining, transport and communication, construction, tourism, real estate, agriculture and fisheries. | |

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| 5. Assumptions and methodological approaches, including those for estimating and accounting for anthropogenic greenhouse gas emissions and, as appropriate, removals: | | |
| (a) | Assumptions and methodological approaches used for accounting for anthropogenic greenhouse gas emissions and removals corresponding to the Party's nationally determined contribution, consistent with decision 1/CP.21, paragraph 31, and accounting guidance adopted by the CMA; | Methods of estimation are in line with the 2006 IPCC Guidelines for National Greenhouse Gas Inventories; Global Warming Potential used in IPCC AR4. |
| (b) | Assumptions and methodological approaches used for accounting for the implementation of policies and measures or strategies in the nationally determined contribution; | |
| (c) | If applicable, information on how the Party will take into account existing methods and guidance under the Convention to account for anthropogenic emissions and removals, in accordance with Article 4, paragraph 14, of the Paris Agreement, as appropriate; | Under the relevant guidelines of the Paris Agreement (decision 4/CMA.1, decision 18/CMA.1), 2006 IPCC Guidelines, 2013 KP supplementary document and 2013 Wetland supplementary document are being prepared to be applied. |
| (d) | IPCC methodologies and metrics used for estimating anthropogenic greenhouse gas emissions and removals; | The 2006 IPCC Guidelines for National Greenhouse Gas Inventories, 2013 IPCC Kyoto Protocol Supplement and 2013 IPCC Wetlands Supplement are used for estimating GHG emissions and removals. The 2019 Refinement to the 2006 IPCC Guidelines will be included in the future. |
| (e) | Sector-, category- or activity-specific assumptions, methodologies and approaches consistent with IPCC guidance, as appropriate, including, as applicable: | |
| (e) (i) | Approach to addressing emissions and subsequent removals from natural disturbances on managed lands; | Methods to exclude emissions from natural disturbances are not fully applied. Currently, only forests are used. |
| (e) (ii) | Approach used to account for emissions and removals from harvested wood products; | |
| (e) (iii) | Approach used to address the effects of age-class structure in forests; | |
| (f) | Other assumptions and methodological approaches used for understanding the nationally determined contribution and, if applicable, estimating corresponding emissions and removals, including: | |

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| (f) (i) | How the reference indicators, baseline(s) and/or reference level(s), including, where applicable, sector-, category- or activity-specific reference levels, are constructed, including, for example, key parameters, assumptions, definitions, methodologies, data sources and models used; | The 2006 IPCC Guidelines for National Greenhouse Gas Inventories, 2013 IPCC Kyoto Protocol Supplement and 2013 IPCC Wetlands Supplement are used for estimating GHG emissions and removals. The 2019 Refinement to the 2006 IPCC Guidelines will be included in the future. |
| (f) (ii) | For Parties with nationally determined contributions that contain non- greenhouse-gas components, information on assumptions and methodological approaches used in relation to those components, as applicable; | |
| (f) (iii) | For climate forcers included in nationally determined contributions not covered by IPCC guidelines, information on how the climate forcers are estimated; | |
| (f) (iv) | Further technical information, as necessary; | |
| (g) | The intention to use voluntary cooperation under Article 6 of the Paris Agreement, if applicable. | Taiwan will achieve its NDC targets mainly through domestic efforts and intend to partly use transferred Internationally Transferred Mitigation Outcomes (ITMOs), including Other International Mitigation Purposes (OIMP) from partner countries. Taiwan will promote international cooperation under Article 6 of the Paris Agreement by implementing necessary rules to ensure environmental integrity, sustainable development, and avoidance of double counting. |
| 6. How the Party considers that its nationally determined contribution is fair and ambitious in the light of its national circumstances: | | |
| (a) | How the Party considers that its nationally determined contribution is fair and ambitious in the light of its national circumstances; | Taiwan made its net-zero pledge in 2021, followed by publishing <i>Taiwan's Pathway to Net-Zero Emissions in 2050</i> in March 2022, which consists four transition strategies covering “Energy”, “Industrial”, “Life” and “Social” aspects, as well as two foundations in governance: “Technology R&D” and “Climate Legislation”. In addition, 12 key strategies were announced on 28 December 2022, including “Wind/Solar PV”, “Hydrogen”, “Innovative Energy”, “Power Systems & Energy Storage”, “Energy Saving & Efficiency”, “Carbon Capture”, “Utilization & Storage (CCUS)”, “Carbon-Free & Electric Vehicles”, “Resource Recycling & Zero Waste”, “Carbon Sinks”, “Green Life”, “Green Finance”, and “Just Transition”. The net-zero pledge was officially written into law in January 2023. Taiwan’s updated NDC sets a 23-25% reduction target, which is in line with the 2050 net-zero emissions pathway. |

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| | | <p>Taiwan will significantly increase renewable energy and zero-carbon electricity (about 1500% more renewable energy compared to the previous 2015 INDC; about 37% more than the 2021's target). The major emission source industries have pledged to reduce emissions by 20% to 50% relative to 2030. Nature-based reduction shows great potential (natural carbon sinks will increase up to 10 million metric tons from 2020 to 2040).</p> <p>Taiwan will implement aggressive power-saving efficiency measures and develop a flexible carbon levy mechanism and design an international carbon credit mechanism by amending the <i>Climate Change Response Act</i>.</p> |
| (b) | Fairness considerations, including reflecting on equity; | Taiwan's updated NDC, improves BAU reduction target, uses the reference year (2005) as transparency, and follows the UNFCCC Article 3 (common but differentiated responsibilities) as the fair basis to initiate work to strengthen reduction ambitions, and endeavor to reach the net-zero emission goal by 2050. |
| (c) | How the Party has addressed Article 4, paragraph 3, of the Paris Agreement; | The target in Taiwan's NDC is an ambitious and continued enhancement in mitigation efforts. It was raised to a more progressive target far beyond the previous estimated contribution to the Intended NDC, announced in 2015. |
| (d) | How the Party has addressed Article 4, paragraph 4, of the Paris Agreement; | <p>In 2015, Taiwan committed to implementing an economy-wide target, through domestic abatement effort to reduce its greenhouse gas emissions by 50% from the business-as-usual level by 2030.</p> <p>The updated NDC commits to a 23-25% reduction from the net national GHG emissions compared to the reference year (2005) by 2030.</p> |
| (e) | How the Party (least developed countries and small island developing States) has addressed Article 4, paragraph 6, of the Paris Agreement. | Taiwan does not belong to the category of least developed countries and small island developing States, and the planning strategies of newly industrialized countries have been proposed in the previous chapters. |
| 7. How the nationally determined contribution contributes towards achieving the objective of the Convention as set out in its Article 2: | | |
| (a) | How the nationally determined contribution contributes towards achieving the objective of the Convention as set out in its Article 2; | Taiwan's NDC represents its contribution to the objectives of Article 2 of the Convention to stabilize GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Sections 4 and 6 detail Taiwan's mitigation ambition that will contribute to achieving Article 2 of the Convention. |

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| (b) | How the nationally determined contribution contributes towards Article 2, paragraph 1(a) and Article 4, paragraph 1, of the Paris Agreement. | Sections 4 and 6 propose Taiwan's mitigation ambition that will contribute to achieving Article 2 of the Convention. |
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