

"12 Key Strategies" Action Plan Announced for 2050 Net-Zero Transition Goals

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I. Introduction

To cope with the impact of climate change, more than 130 countries have committed to net zero in order to reduce the effect of global warming. Conglomerates are also joining RE100 in response to net-zero emission initiatives. President Tsai promised on Earth Day 2021, April 22, that Taiwan will achieve the 2050 Net-Zero Transition goal. The National Development Council (NDC) has been collaborating closely with relevant authorities, such as the Environmental Protection Administration of the Executive Yuan, the Ministry of Economic Affairs, the Ministry of Transportation and Communications, the Ministry of the Interior, the National Science and Technology Council (NSTC), the Council of Agriculture, and the Financial Supervisory Commission, and announced "Taiwan's Pathway to Net-Zero Emissions in 2050" in March 2022. With the four transition strategies of "Energy Transitions", "Industrial Transitions", "Lifestyle Transitions", and "Social Transitions" as well as the two governance foundations of "Technology R&D" and "Climate Legislation," we will make steady progress toward the goal of a sustainable society via the 2050 Net-Zero Transition.

Based on the net-zero Pathway, the NDC together with the Environmental Protection Administration of the Executive Yuan, the Ministry of Economic Affairs, the Ministry of Transportation and Communications, the Financial Supervisory Commission, the Ministry of Labor, the Ministry of the Interior, the NSTC, and the Council of Agriculture officially announced the 2030 milestones of Taiwan's Net-

Zero Transitions and illustrated the "12 Key Strategies" Action Plan (Figure 1) after months of interministerial collaborations and over 50 meetings and seminars with the general public for opinion exchanges. In addition, the mid-to-long-term projects submitted by central government agencies in the future should include net-zero and sustainable consideration and plans. The government should also assist small and medium enterprises (SMEs) with the net-zero transition by providing resources.

II. Implementing 12 Key Strategies to Achieve Goal of Net-Zero Transition

In response to the 2021 COP26 Glasgow Climate Pact and the 2022 COP27 Sharm el-Sheikh Implementation Plan, Taiwan has reviewed and increased the 2030 carbon reduction goal to $24\% \pm 1\%$ compared to the base year of 2005, thereby accelerating the pace of carbon reduction. Furthermore, to optimize the carbon reduction strategies, the "12 Key Strategies" plan was formulated to increase the capacity of renewable energy devices. Our objective is to expand the use of renewable energies and provide carbon-free electricity for all segments of society through these efforts, coupled with the construction of new electrical systems and energy storage equipment.

Furthermore, the benefits of energy conservation actions will be actively expanded, companies will be encouraged to invest in carbon reduction actions, and related concepts will be promoted and popularized. With the development of electric transportation, green buildings, high-performance equipment, and resource recycling, we are endeavoring to promote transitions in both industry and lifestyle.

However, it is insufficient to rely solely on existing technologies to achieve the 2050 Net-Zero Transition Goal. Therefore, the government is highly involved in forward-looking green energies, such as geothermal energy, biomass energy, and marine energy. These fields may lead to the development of diversified sources of carbon-free electricity. As for the carbon emissions that are difficult to reduce, we will adopt the R&D of carbon negative technologies including natural sinks such as forests, soil, and ocean, and carbon capture, utilization, and sequestration (CCUS) to speed up the reduction of carbon dioxide.

In terms of green finance, the Action Plan calls upon financial institutions to pay attention to the issues of climate change, and guide them to take good advantage of the power of financial instruments, so as to lead enterprises to cut their carbon emissions. The supply chain will even be further required to reduce carbon emissions in order to accomplish the industrial net-zero transition.

III. Results of Transitions will be Based on Two Governance Foundations

As for the R&D of technology, the NSTC is promoting the "Net-Zero Technology Project", which covers 5 important disciplines: sustainable and forward-looking energy, low carbon technologies, negative carbon technologies, recycling technologies, and humanities and social sciences.

In future, the NSTC will continue to assist academic institutes in contributing to forward-looking research on net-zero, facilitating international cooperation to ensure that Taiwan's R&D in net-zero technology can align with the world, and initiate relevant studies in the social sciences. It is vital to cultivate talent in the net-zero technology that we will need in the future on a long-term basis. Furthermore, the NSTC will assist other ministries in jointly developing applications for forward-looking energy research by researching and developing new technology to achieve the 2050 Net-Zero Transition goal.

In terms of climate legislation, the Climate Change Response Act became effective on the date of promulgation by the President on February 15, 2023. Relevant provisions were added to the law through amendments, such as establishing special funds for carbon fee collection, enhancing emission control and incentive mechanisms to promote reduction, and a specific chapter on climate change adaptation. The amendment clearly demonstrates Taiwan's determination to achieve the goal of net-zero emissions, and helps to build greater resilience in climate legislation.

Amendments to other laws and regulations related to energy transition such as the Energy Administration Act and the Renewable Energy Development Act are in progress as well. For the latter, the amendment draft focuses on expanding

the scope of offshore wind power installations, encouraging water conservation facilities to be alternatively used for power generation, and buildings that meet certain requirements should install photovoltaic power generation equipment on the roof. It is expected to drive the development of domestic renewable energy in future via the relaxation and optimization of the legal environment.

IV. To Facilitate Social Communication and Supportive Measures to Fulfill a Just Transition

However, transitions will inevitably be faced with challenges. In order to implement the core value of "leave no one behind" in the process of transitioning towards net-zero emissions, the government intentionally included "just transformation" into the 12 Key Strategies. The NDC has established mechanisms for promoting multilateral participation, so as to ensure that the power and scope of measures proposed by the government for the just transition are sufficiently strong and broad and meet society's expectations.

The government is currently planning to form a Just Transition Commission, which will be composed of experts from industry, government, and academia as well as representatives from non-governmental organizations (NGOs) and citizen groups. It will hold regular meetings to assist in reviewing just transitions in the 12 Key Strategies and give feedback in due course. In addition, the central and local governments will also collaborate with NGOs, experts, and scholars to hold public hearings and symposiums, or use other public consultation channels to invite parties affected by the Key Strategies, thereby taking into account a wide range of views from all walks of life.

In terms of enterprises, the government will act as the biggest supporter to enterprises, especially in the provision of resources and assistance to a wide range of SMEs. To this end, the government will work hand in hand with industry associations. Moreover, state-owned enterprises will lead by example and adopt new models of operation, and then help other companies comply with transition policies. This will allow small and medium enterprises to gradually implement transitions and meet the carbon reduction requirements of their supply chains.

The government will begin with the four major aspects (Figure 2) to assist enterprises in building the capabilities required for the net-zero transition. By providing digital tools and counseling resources, the government will help SMEs understand their own carbon emissions, develop corresponding carbon reduction measures, and introduce smart and low-carbon technologies or services required for carbon reduction to complete transitioning and upgrading. Aside from helping enterprises understand the business opportunities brought by the net-zero transition, it also manifests the government's determination to "leave no one behind" by implementing just transformations.

V. Conclusions

The 2050 Net-Zero Transition goal is not just about environmental protection; it also represents a long-term national development plan created through interministerial collaborations. Through the implementation of the "12 Key Strategies", Taiwan will be able to reduce carbon emissions by 72 to 76 million tons, which is equivalent to 29% of the carbon emissions in 2020. This will also create massive business opportunities.

The plan is expected to attract over NT\$4 trillion in private investments and create NT\$5.9 trillion in industry production value from 2023 to 2030. It is also expected to create 551,000 jobs related to net-zero transitions, helping to form the supply chains for solar power, wind power, electric vehicles, and energy storage equipment in Taiwan.

The announcement of the "12 Key Strategies" Action Plan symbolizes how Taiwan has taken steady steps towards net zero. The government will use the plan as the basis for dialog and will continue to communicate with the various sectors of society in order to find better solutions and implement specific actions. By implementing the Action Plan, we hope to create a better living environment and industry development opportunities for future generations. 🌱