

COUNTRY REPORT: TAWAIN

The New Climate Change Law in Taiwan

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Introduction

Taiwan officially released its Greenhouse Gas Reduction and Management Act on 1 July 2015. The country also announced Taiwan's Intended Nationally Determined Contributions (INDCs), which specify its greenhouse gas reduction goals, in September 2015.¹ What type of changes will this Act bring about in Taiwan? Is it going to help reduce greenhouse gas (GHG) emissions and promote sustainable development in Taiwan? Can it provide a reference for other countries? The focus of this report is to investigate these questions and answer them accordingly.

Climate Change in Taiwan

Although Taiwan is not a party to the United Nations Framework Convention on Climate Change (UNFCCC), its contributions to global carbon emissions are rather significant. Taiwan's total GHG emissions in 2014 reached 2.5661 million tons, which placed it 24th in the world, producing 0.8% of total global emissions, while its per capita GHG emission was 10.95 tons (20th in the world).²

Not only is Taiwan a major carbon emitter, the country is also highly vulnerable to the impacts of climate change. Taiwan is frequently affected by earthquakes and tropical storms as it is situated at the boundaries of the Philippine sea-plate and the Eurasian continental plate. It also lies on typhoon paths of the west Pacific. The World Bank pointed out in 2005 that only 5% of the areas in the world, covering about 35 areas and regions, face 3 types of

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¹Taiwan EPA announced Taiwan INDC on 17 September 2015:

http://enews.epa.gov.tw/enews/fact_Newsdetail.asp?InputTime=1041117174044.

²Statistics from the Environmental Protection Administration:

<http://www.epa.gov.tw/ct.asp?xItem=10052&ctNode=31352&mp=epa>.

compound disasters³. Over 90% of Taiwan is subject to 2 types of disaster, while up to 73% is subject to 3 types of compound disaster.⁴ The first natural disaster and sovereignty related credit rating report released by Standard & Poor's in 2015 also listed Taiwan as one of the 10 most vulnerable states in the world due to its frequent incidence of natural disasters.⁵ Given the link between climate change and natural disasters, Taiwan recognizes the importance of addressing climate change not only to meet its international obligations but also to protect the next generation of Taiwanese people.

The Legislative Passage of the Greenhouse Gas Reduction and Management Act⁶

Taiwan is one of the few countries (others including the UK and Mexico) that have established a law dedicated to this issue. President Ma Ying-Jeou will be completing his term in May 2016. During his 2nd Term, President Ma proposed 4 laws governing GHG emissions in 2009, namely the Renewable Energy Development Act, Energy Administration Act, Greenhouse Gas Reduction and Management Act, and Energy Tax Bill⁷. Of these, the Renewable Energy Development Act and Energy Administration Act were promulgated in July 2009, while the Greenhouse Gas Reduction and Management Act was promulgated in July 2015. Only the Energy Tax Bill remains under legislative review due to the wide extent and scope of the interests affected.⁸

The EPA of Taiwan (EPA) began drafting the *Greenhouse Gas Reduction Act* in 2005. The draft was reviewed and passed by the Executive Yuan and submitted to the Legislative Yuan in September 2006. It took 10 years to approve the Act after it was drafted.⁹ This delay was a result of several reasons, namely: (1) failure to identify the agency responsible for controlling total emissions (4 competent authorities were named in the initial draft, namely the EPA, the Ministry of Economic Affairs (MOEA), the Executive Yuan National Sustainable Development Network (NSDN), and Greenhouse Office of the MOEA (GO-MOEA)); (2) the government's objection to setting up a carbon reduction goal and time

³ The term 'compound disasters' refers to typhoons, earthquakes and mudslides.

⁴World Bank: http://www.gvm.com.tw/Boardcontent_11196.html.

⁵Report by Standard & Poor's: <http://ppt.cc/iFlb2>.

⁶Reference for the legislative process:

http://ir.lib.ntnu.edu.tw/retrieve/49802/metadata_10_01_s_05_0065.pdf.

⁷President Ma Ying-Jeou's words: <http://www.epochtimes.com/b5/15/9/16/n4528999.htm>.

⁸Relevant discussions on the Energy Tax Bill: <http://e-info.org.tw/node/110513>.

⁹Process for passing the GHG Act: <http://e-info.org.tw/node/108525>.

table; and (3) differences in opinion among the incumbent parties, and the opposition on matters of GHG emission inventory review, verification, carbon offset and carbon trading systems.

In 2009, Taiwan encountered the worst floods since 1959 caused by Typhoon Morakot.¹⁰ Multiple areas in Taiwan were inundated and were struck by landslides and debris-flow. The disaster was highlighted by the catastrophic destruction of Siaolin Settlement in Siaolin Village, Jiaxian Township, Kaohsiung County (now Kaohsiung city). It was here that 474 people perished from being buried alive by the flow of debris. Official statistics showed that 681 people died and 18 went missing due to the flood.¹¹ It was during this period that the government quickly discussed adjusting the Draft from climate mitigation to climate safety. A draft for the Climate Safety Act was initiated by legislator Cheng Li-wen to highlight the importance of the impacts of climate change.¹²

On 15 June 2015, the draft finally passed the third reading by the Legislative Yuan and was renamed as Greenhouse Gas Reduction and Management Act (hereafter the GHG Reduction Act). The EPA was authorized as the competent authority for the Act, the contents of which include emission reduction objectives and timetables, adopting a carbon trading system as the main reduction measure, and adaptation concepts.

Basic Summary of the GHG Reduction Act

The legislative purpose of the Act is to stipulate a strategy for coping with the impacts of climate change, to reduce and manage GHG emissions, to attain environmental justice, to meet Taiwan's responsibilities for protecting the planet's environment, and to ensure sustainable development of the country.

The most important clause of the GHG Act is to establish a law governing emission reduction objectives. Article 4 of this Act stipulates that the long-term national GHG emission reduction goal shall be to reduce GHG emissions to no more than 50% of 2005 GHG emissions by 2050. This goal, however, may be adjusted in a timely manner by taking into consideration the UNFCCC and its agreements.

¹⁰ Typhoon Morakot landed Taiwan in the midnight of August 8, 2009, was the deadliest typhoon to impact Taiwan in recorded history.

¹¹ Typhoon Morakot report: <http://ppt.cc/mp0J9>.

¹² Climate Safety Act: <http://e-info.org.tw/node/50803>.

The central competent authority for this Act is the EPA, while municipal, county, and city governments serve as the local authorities.¹³ Despite the fact that the EPA is the central competent authority of this Act, GHG reduction and climate change adaptation shall involve multiple ministries and departments governing energy, industries, land, and transportation. Hence, Article 8 of the Act stipulates that the Executive Yuan shall invite central government agencies, NGOs, experts and scholars to determine and review task integration and division amongst various agencies.

The EPA shall formulate national action guidelines in responding to climate change and action plans for driving GHG reduction. Before doing so, it must be referred to Taiwan's economy, energy supplies, environment situations, current international trends and allocation of responsibilities by the Executive Yuan and consult with the central industry competent authorities. The action guidelines and action plans shall be implemented after approval from the Executive Yuan.¹⁴ The action guideline shall be reviewed once every five years. Action plans shall also include items such as setting periodic regulatory goals, implementation timetables, implementation strategies, expected benefits, and an evaluation mechanism.¹⁵

Analysis

GHG Reduction Method

The leading method in the Act for GHG reduction is the carbon trading system. The implementation procedure requires the government to first establish an inventory mechanism. Annual accounting of emission volumes shall be carried out every year and registered to the emission source account established in the specified information platform.¹⁶ The central competent authority will set up the emission goal in different stages for the regulated emission sources and allocate the emission allowance to all emission sources with free auction or through placing a price.¹⁷

In terms of the Act, an entity provided with an allocation may not generate more emissions than the emission allowance provided in its account within a period of time

¹³Art. 2.

¹⁴Art. 9 Para. 1.

¹⁵Art. 9 Para. 2.

¹⁶Art. 16.

¹⁷Art. 20 Para.1.

specified by the EPA.¹⁸ If the said entity generates more emissions than the emission allowance, additional emissions must be procured via trading or other methods to offset the amount of GHG emissions exceeding its allowance.¹⁹

Additionally, the act specifies that:

*The central competent authority shall work in conjunction with the central industry competent authorities to determine regulations regarding the allowance of the entity, the eligibility, approach and processes of allocation, the approaches of auction or sale, revocation and termination of emissions allowances.*²⁰

Due to the vagueness of the act, the said entity might expect the allowance will be based upon to the average amount of the emissions before the specifications are taken into account. It might lead to excessive emissions (over-production) by the said entities to obtain additional allowances.

An entity that intends to procure carbon credits through trading must prioritize domestic sources first. Carbon credits procured from overseas sources may not exceed one-tenth of the entity's total allowances.²¹

An entity that fails to surrender the designated amount of allowances within the deadline shall pay a monetary penalty amounting to three times the carbon market price for any exceeding amount to a maximum of NT\$ 1500 per ton. The EPA shall, in conjunction with the central industry competent authorities, set, regularly review, and publicly announce the carbon market price by taking into consideration the domestic and international carbon market trading prices.²²

Analysis of the Reduction Goal

The reduction goals stipulated by the GHG Act are to reduce emissions to 50% of 2005 levels by 2050 (equivalent to 122.5 million tons).²³ Carbon reduction goals and time tables were once opposed by government. Now this goal is well-defined in the law. Past

¹⁸Art. 21 Para. 1.

¹⁹Art. 21 Para. 2.

²⁰Art. 20 Para. 7.

²¹Art. 21 Paras. 3 & 4.

²²Art. 28.

²³Art. 4.

observations have shown that carbon reduction goals publicly announced by the Taiwanese government have undergone constant fluctuations. Establishing carbon reduction goals by law can greatly enhance the consistency of emission reduction efforts. Is the goal considered excessively demanding or under-demanding in terms of Taiwan's global responsibilities and national capabilities? There are conflicting views with respect to this question.²⁴ However, the problem remains -what degree of temperature is this goal trying to reach? There is still a lack of sufficient scientific data on this determination.

Further, since Taiwan is not a party to the UNFCCC what is the reason for stipulating carbon reduction standards within national legislation? The reduction goals of the *GHG Reduction Act* may be regarded as a sufficiently clear provision of national responsibility. In 1989, the Grand Justices Council in Taiwan provided the constitutional interpretation No. 469 by saying that:

*The stipulation of law is not confined to the powers granted to the national authorities in the execution of public affairs, but the purpose of which is to protect the life, body health, property and other interests of the citizen as well.the failure to discharge public servant's duties by reason of deliberateness or negligence has resulted in harm to the liberty or rights of the identifiable persons, the victim thereunder may claim compensatory damage.*²⁵

Thus, under the Taiwanese legal system, it may even be regarded as a subjective right of the public. Given these legal implications the scientific methods and accuracy for stipulating the reduction goals become extremely important.

In terms of its INDCs, it was announced in September 2015, '*emissions shall be reduced to 50% of BAU by 2030, which is equivalent to 20% of 2005 (195 million tons).*' This is close to President Ma's 2008 commitment of '*returning to 2000 emission levels (214 million tons) by 2025.*' These commitments show that Taiwan's INDCs are extremely conservative and lack any novelty. No further commitments have been made despite technological advancements or increasing severity of climate changes. More details will be shown below.

²⁴Please refer to: <http://e-info.org.tw/node/108400>.

²⁵Full context of constitutional interpretation No. 469:

http://www.judicial.gov.tw/constitutionalcourt/EN/p03_01.asp?expno=469.

The Problems of ETS in Taiwan

Fluidity and efficiency could be two key elements of a successful emissions trading market. If the market scale is not big enough, very few big participants can affect prices dramatically. However, such low trading volumes would reduce the willingness of other industries or financial entities to participate in the market.²⁶

The economic structure in Taiwan has shown that up to 97% (or 1.3 million) Taiwanese companies are small and medium-sized enterprises (SMEs)²⁷ with a paid-in capital of less than NT\$ 100 million or employ less than 50 individuals.²⁸ The total emission of all companies in Taiwan is 180 million tons, and about one quarter of this comes from SMEs²⁹ (45 million tons). This means that the average emissions of SMEs per year is only 34 tons of GHG. Such trivial volumes for transaction make it questionable if the benefits will outweigh the administrative costs.

Furthermore, many of Taiwan's industries have high energy densities. We can foresee that the allocation of carbon emission allowance in the future would be concentrated on a handful of major emission sources, i.e. Taiwan Power Company, Chinese Petroleum Corporation, China Steel Corporation etc. The top 10 sources of carbon emission accounted for 85% of the whole industry, while the top 3 accounted for 75%. Under this circumstance, there is doubt about the necessity of establishing a high administrative cost carbon market in Taiwan.³⁰

Assuming the price of a Voluntary Emissions Reduction (VERs) is US\$ 5 per ton, the scale of the carbon trading market in Taiwan may reach US\$ 780 million (about NT\$ 23.4 billion) by the 4th year³¹, according to the analytic report of Chung Hua Economic Research in 2009. However, this year amount is far below the TAIEX centralized market value in one

²⁶Design and assessment of market policies and package measures for carbon reduction goals in Taiwan: http://www.aec.gov.tw/webpage/policy/plans/files/plans_04_e-102_18.pdf.

²⁷ Taiwan's SMEs reach record heights:

<http://www.appledaily.com.tw/appledaily/article/finance/20130927/35322988/>

²⁸Or less than NT\$ 80 million in paid-in capital or employ less than 200 individuals for manufacturing, construction, mining, or quarrying companies.

²⁹Carbon reduction problems with SMEs :

http://www.taiwan-panorama.com/tw/show_issue.php?id=201049904020c.txt&table1=0%cur_page=2&distype=text.

³⁰Design and assessment of market policies and package measures for carbon reduction goals in Taiwan: http://www.aec.gov.tw/webpage/policy/plans/files/plans_04_e-102_18.pdf

³¹ETS research from Chung-Hua Institution for Economic Research (2009).

trading day. It may reduce the willingness of financial institutions to participate the carbon emission trading market.³²

Although the GHG Act has yet to directly authorize the government to stipulate a regulated carbon trading price, the Penalty Provisions of the GHG Act specify that when calculating the emission source account balance at the end of the year, any account with an allowance below zero must pay a monetary penalty amounting to three times the carbon market price per metric ton and the cap of the penalty will not exceed to the maximum of NT\$ 1500 per metric ton. In other words, the upper limit of the carbon trading price in Taiwan would be NT\$ 1500. If carbon prices are beyond this limitation, the entities would prefer to the penalty instead of purchasing allowance to reduce costs. To set a cap on the carbon trading price, however, is contradictory to the call for establishing a globally uniform carbon price and is severely restrictive to the potential of growth for carbon trading prices³³.

Fossil Fuels and Power Generation

Given that the GHG Reduction Act has set up the total amount of the emission reduction goal, it is critical to monitor the ways to achieve it. The Act divides emission sources into five sectors, which are energy, manufacturing, transportation, residential and commercial, and agriculture.³⁴ The EPA sets up the 5 years goal for each sector in consultation with the central industry competent authorities.

Where does this division come from? On 5 January 2016, the EPA released the Preliminary Reductions Action Guideline Report. The contents of this report are worrisome. It narrowed the scope on the fuel combustion (87% of total GHG emissions) only, and excluded emissions from manufacturing process (8%) and other greenhouse gases resources (5%) except CO₂. It seems to ease the burden of the energy sector.

The reason was in the method of emission calculation of each sector. EPA has adopted the 'sharing power consumption by various sectors' method, which counts emissions from power users rather than the power generation sectors. As a result, the emissions of the energy sector decreased from 66% to 10%, while residential and commercial sector increased to 26% from 2.6%.

³²Design and assessment of market policies and package measures for carbon reduction goals in Taiwan: http://www.aec.gov.tw/webpage/policy/plans/files/plans_04_e-102_18.pdf.

³³Please refer to:<http://ppt.cc/MDNrN>.

³⁴Art. 9 Para. 3.

The power generation structure in Taiwan shows that 34% of Taiwan's electricity is generated by coal, 31.1% by natural gas, 18.8% by nuclear energy, and 4.5% by renewable energy sources.³⁵ Currently, most of Taiwan's power is generated from burning coal.

Under the method of 'sharing power consumption by various sectors', the efficiency of coal-fired power plants will be ignored and diluted so that the focus of emission reduction responsibility will be inappropriately transferred to the households, consumers and other electricity end-users. It could severely slow energy transformation in Taiwan, and the carbon reduction policy will remain focused on the level of 'switching off lights' and 'use less air conditioning'. Moreover, carbon reduction from the residential and commercial sector does not mean that the energy sector would reduce power generation. Any spare capacity would eventually be taken up by industrial sectors to enhance the economic growth.

To promote energy transformation, article 5 of the Act specifies that:

*To ensure the nation's energy security, the government shall initiate mid and long-term strategies for gradually reducing the dependence on fossil fuels and in the meanwhile to regulate a mid and long-term aim of renewable energy policies to realize of the vision of a nuclear-free homeland.*³⁶

According to this provision, fossil fuel and nuclear energy will be replaced by renewable energy in the long-term.

Given the above, if Taiwan does not set a clear proportion and timetable for the development of renewable energy, it is very hard to see the achievement of the goal of a low carbon future.

Conclusion

After decades of legislative drafting, the GHG Reduction Act was eventually adopted on 1 July 2015. Taiwan is one of the few countries that have established a law dedicated to fighting climate change. However, a number of issues remain unresolved, such as: the reduction objectives lack sufficient scientific based methods, and Taiwan's industrial structure may not be suitable for the introduction of carbon trading schemes. All of the above are the issues the Act will encounter in the near future.

³⁵MOEA power structure (2013): http://anuclear-safety.twenergy.org.tw/Faq/index_more?id=82.

³⁶Art. 5.

Is a new climate law more antipyretic? People always think that a new law is a symbol of progress, but will this hold true for the GHG Reduction Act? On 9 May 2012, the EPA formally listed six major GHGs as air pollutants regulated under the air pollution law. However, in the past 3 years, the EPA has not established any emissions standards for those GHGs. Instead, government has attempted to reduce the burden of the energy sector, especially the responsibility of coal power plants. A Chinese proverb states that 'Acts method is not sufficient by their own.' Although it is not easy to pass a new climate change act, we still need to examine the new act very carefully. If the pattern of development is not likely to adjust, the policy of energy transformation is not aggressive, political will to achieve the goals of the act is lacking, and innovation fails to take place, we cannot expect a bright future even though the new climate law has been legislated.