

## A Change of Nuclear Energy Policy and Referendum in Taiwan

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### 1. Introduction

Tsai Ying-wen, who was elected president of Taiwan in 2016, is actively pursuing a change of a nuclear energy policy. To implement the policy, Tsai Ying-wen administration amended the paragraph 1 of article 95 of the Electricity Act in 2017 that all the nuclear power plants in Taiwan would permanently stop their operation by 2025.

However, due to the rapid change of nuclear energy policies and massive power blackout, Taiwanese people experienced continued lack of electricity supply and called for a referendum on whether or not the paragraph 1 of article 95 of the Electricity Act would be discarded.

This paper examines the changes of the nuclear power policy in Taiwan that are similar to Republic of Korea in a perspective of the energy policy, and the results of the referendum that called for the suspension of the current government's anti-nuclear policy.

### 2. A Change of Nuclear Energy Policy in Taiwan

#### 2.1 Changes of a Nuclear Energy Policy in Taiwan

The nuclear energy policy in Taiwan has been changed according to the energy policy of a ruling party, but after the Fukushima accident in Japan in March 2011, it was turned into the anti-nuclear policy regardless of the ruling party.

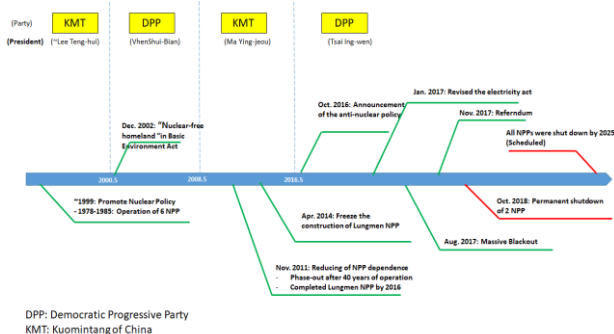


Fig.1. Process of Changes of the Nuclear Policy in Taiwan

Taiwan introduced nuclear power plants in the 1960s and 1970s to provide stable power supply, and the nuclear power plants served as the base load for electricity supply by 2000.

President Ma Ying-jeou of the Kuomintang of China (KMT) began the anti-nuclear energy policy in 2014

after Japan's Fukushima nuclear accident and President Tsai Ying-wen of the Democratic Progressive Party (DPP) elected in 2016 actively pursued it due to intense anti-nuclear activities.

However, after the massive blackout in Taiwan in August 2017, the importance of stable electricity supply became more emphasized and Taiwanese people asked for the referendum to repeal the paragraph 1 of article 95 of the Electricity Act.

As a result of the referendum held in November 2018, the relevant article of the Electricity Act was abrogated and the current government's anti-nuclear policy has been put on hold.

#### 2.2 Implementation Process of Nuclear Energy Policies in Taiwan

In Taiwan, the nuclear energy policies have been developed and decided through a series of processes - the establishment of policies by the Executive Yuen, the revision of acts by the Legislative Yuen and the national participation (a referendum on the nuclear energy policy)

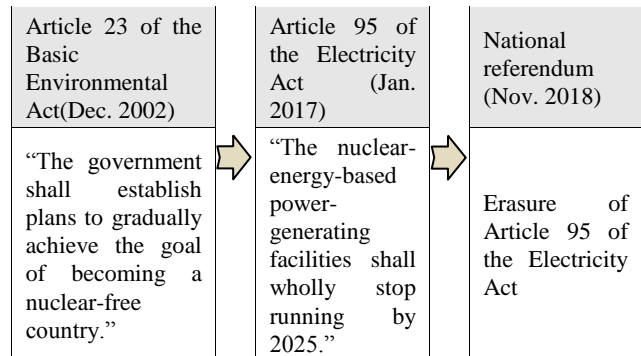


Fig.2. Taiwan's Anti-nuclear-related Legal Progress

### 3. An Analysis of Taiwan's Massive Blackout

The massive power blackout occurred in August 2017 due to the shutdown of Tadan LNG Power Plants which accounted for 8.8% of Taiwan's total installed capacity (49,753 MW). On the day of blackout, Taiwan had only 3.2% (1,157 MW) of the reserve margin to maintain a stable supply of electricity.

The increase of installed capacity since 2009 in Taiwan has been lower than that of peak load, and thus the reserve rate has been decreased.

In 2017, the reserve rate of installed capacity in Taiwan was 37%, but the reserve margin, which can

actually supply electric power due to accidents, failures and maintenance, fell to very low levels. After 2014, Ma Ying-jeou administration chose policies to reduce nuclear power plants including banning on the extension of an operation period of nuclear power plants and suspending the construction of two nuclear power plants provisionally. As a result, the power generation and utilization rate of nuclear power plants were sharply decreased by about 50 % from 2014 to 2017 along with the extended inspection of the nuclear power plants for the strengthening of safety checks.

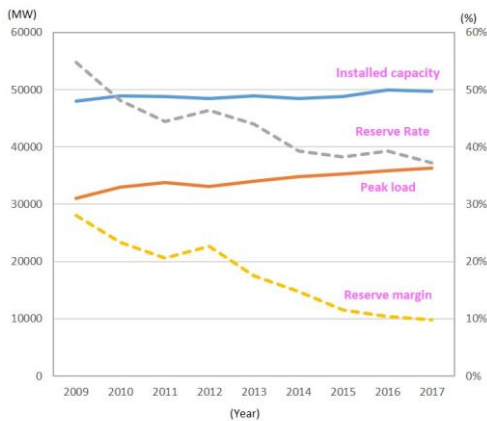


Fig. 1. Installed capacity, peak load, reserve rate, and reserve margin in Taiwan since 2009

#### 4. Results of a Referendum

In a survey conducted by the National Policy Research Foundation of KMT in June 2017, 52.6 % of the 1,070 respondents supported they did not want to pay more electricity bills which could be caused by the anti-nuclear power policy. 47% of the respondents also supported restarting the suspended nuclear power plants.

According to amendments to Referendum Act in December 2017, the voting age was lowered from 20 to 18 years old and the criteria such as the number of people's signature which can make the referendum available were eased.

In the referendum held alongside local and municipal elections on Nov. 24, 2018, 10 key national issues were asked. As a result, 59% of voters supported the abolition of paragraph 1 of Article 95 of the Electricity Act.

Tsai Ying-wen administration said on November 27, 2018 that it was decided that the law which permanently stops operation of all the nuclear power plants by 2025 will be revised in accordance with the result of a referendum.

However, two days later President Tsai Ying-wen said that despite the result of the referendum, the goal of the anti-nuclear energy policy, as described on the Basic Environment Act, remains unchanged.

#### 5. Conclusions

In the case of Taiwan, where the energy environment and policies are similar to Republic of Korea, the results of the recent referendum show that the people want to abolish the policy due to the instability of the power supply caused by the current administration's anti-nuclear policy.

In order to maintain a stable power supply in Republic of Korea, whose power grid is isolated like Taiwan, it is of utmost importance to secure and maintain reasonable energy mix and proper reserve margin in the mid- and long-term perspective.

In deciding and implementing important national policies, Taiwan has secured a series of democratic procedures, such as announcing election pledges, adopting relevant policies, revising or enacting related laws and participating in referendum.

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