



## **Boosting Green Energy in Taiwan: Legal and Political Reform**

by Po-Hsiang OU & Paul J. CASSINGHAM

Following the recent adoption of the “Nuclear Free Homeland Initiative”, Taiwan’s government will mothball the island’s controversial fourth nuclear power plant and decommission the first three nuclear power plants completely by 2025<sup>1</sup>. Taiwan has also committed to reduce its greenhouse gas emissions to 50 percent of its 2005 levels by 2050<sup>2</sup>. Achieving these targets while maintaining a stable power supply will require increased reliance on renewable energy. Recognizing this situation, the government is seeking to increase the supply of renewable energy to about 10 percent of total electricity generation by 2025 - more than double the current renewable energy percentage contribution in Taiwan's power mix.

This is an extremely ambitious goal, but it offers great opportunities. Taiwan’s renewable energy sector has grown significantly over the past decade, and with strong government support, this growth will most likely continue and be further enhanced. The government is also discussing reorganization of the Taiwan



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Power Company (Taipower) and liberalization of Taiwan’s energy sector as a whole. Against this backdrop, this article introduces the backbone of Taiwan’s renewable energy policy, i.e., the 2009 Renewable Energy Development Act, and discusses its incentive mechanisms as well as its implementation.

### **Developing Renewable Energy: the Incentives**

The main incentive provided by the Renewable Energy Development Act (the Act) is the so-called Feed-in Tariff (FIT) scheme. This guarantees the purchase of renewable energy at a fixed price for a certain period of time in order to mitigate

<sup>1</sup> <http://topics.amcham.com.tw/2015/09/is-renewable-energy-the-way-forward-for-taiwan/>

<sup>2</sup> Article 4 of the Greenhouse Gas Reduction and Management Act; this Act forms the basis of the Intended Nationally Determined Contribution (INDC) that Taiwan submitted to the UNFCCC.

the market risk for investors<sup>3</sup>. One example is the current tariff for offshore wind energy. The FIT scheme guarantees payment of TWD 5.74 per kWh for 20 years. This price is even higher than the price currently offered by the German FIT scheme, which is 15 euro cents (about TWD 5.55) per kWh for only 12 years<sup>4</sup>. A full list of the FIT formula tariffs for 2016 can be found on the Bureau of Energy's (BOE) website<sup>5</sup>.

In addition to the FIT scheme, other mechanisms in the Act also encourage investment in renewable energy. These mechanisms include establishing a renewable energy fund (Article 7), assuring parallel connections with the nearest existing power grids (Article 8), prioritizing the use of renewable energy facilities in public buildings (Article 12), subsidizing heat utilization of renewable energy, such as solar energy and biomass fuel (Article 13), supporting the use and acquisition of land (Articles 14 and 15), and an exemption from import tariffs related to the construction or operation of renewable energy facilities (Article 16). In addition, the Energy Bureau has also launched several other policy programs, including the so-called "Million Solar Rooftop PVs" and "Thousand Wind Turbines Promotion" to encourage solar and wind energy development.

The Act and related policy framework provide many incentives for the investment and development of renewable energy, but these mechanisms require better implementation. The challenge of ensuring

a smooth transition from nuclear to renewable energy, therefore, lies in implementing and potentially expanding the Act.

### **Managing the Renewable Energy Transition**

For the Act to guarantee a smooth transition from nuclear power to renewable energy before 2025, strong and efficient implementation is necessary, as well as reform to optimize the entire regulatory framework.

The national competent authority of the Act is the Bureau of Energy, under the Ministry of Economic Affairs (MOEA). However, setting up a renewable energy business requires more than just approval from the BOE. For an offshore wind project, for example, additional approvals are required from various national and local authorities in charge of military defense, aviation, navigation, environmental protection, fisheries and mines. Communication between the BOE/MOEA and other central/local authorities is not always easy. In practice, the responsibility lies generally with the applicant to liaise separately with each authority, imposing very significant costs, delays and uncertainty on a new industry that the government wishes to encourage. The entire institutional structure of energy regulation should be a key focus of future reform in order to centralize, streamline and expedite the process of obtaining regulatory approvals.

An even more urgent issue for the development of renewable energy is timing. Taiwan's economy relies heavily on a stable and reliable energy supply. Government

<sup>3</sup> Articles 9 and 10 of the Renewable Energy Development Act

<sup>4</sup> § 50 Erneuerbare-Energien-Gesetz

<sup>5</sup> [http://web3.moeaboe.gov.tw/ECW/english/content/Content.aspx?menu\\_id=3008](http://web3.moeaboe.gov.tw/ECW/english/content/Content.aspx?menu_id=3008)

policy over the long term is to secure enough electricity from renewable energy, conservation and other techniques to fill the gap caused by the elimination of nuclear power. The path to sufficient and stable power between now and 2025 is, however, far from clear. The three existing nuclear plants all have scheduled decommissioning dates before 2025, and shortages of storage space for spent nuclear fuel rods could cause the use of these plants to be curtailed even before their scheduled decommissioning.

Unseasonably warm weather in late May of this year caused Taipower's reserve margin to fall significantly, reportedly to two percent or less. Some opponents of nuclear power suggest this shortage is exaggerated, but Taiwan's future economic growth depends on business confidence that the transition to a nuclear-free future will be smooth and stable. It is unrealistic to expect business to make significant new

investments in Taiwan's future based simply on trust that the energy transition will somehow be satisfactory.

In addition to the critical challenges of regulatory efficiency and timing, the government should strengthen the availability of project financing, encourage advanced energy storage technologies (especially important for unstable energy sources like solar and wind power), and evaluate how to develop Taiwan's energy sector into a significant contributor to Taiwan's future export growth. These and other areas all require attention if the Act is to fulfill its initial promise.

To conclude, current challenges bring opportunities. The Renewable Energy Development Act has established a foundation of appropriate incentive mechanisms. More robust implementation of the Act's policies is needed to assure that Taiwan's energy transition is successful.

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