

## Exploring Taiwan's Meteorological Data Provision Strategy Through International Experiences

**Chen, Chu-Wei** | Research Associate, The Third Research Division, CIER

**Wen, Fang-I** | Associate Research Fellow, The First Research Division, CIER

**Lin, Hen-I** | Associate Research Fellow, The Third Research Division, CIER

As the challenges posed by climate change continue to intensify globally, the applications of meteorological data in modern society are increasingly diverse. Beyond daily weather forecasts, meteorological data is extensively applied in fields such as agriculture, energy, aviation, and disaster prevention. Different countries have developed various management models for the provision and cross-domain application of meteorological data. This article synthesizes representative cases from Japan, South Korea, the United Kingdom, and Hong Kong to explore specific practices in meteorological data provision and charging mechanisms, data integration, and application promotion. It also offers strategic recommendations for Taiwan's future development in this area.

Firstly, regarding the free provision or charging mechanisms for meteorological data, most countries primarily offer free downloadable meteorological data. However, such services often come with limitations on download capacity and frequency and may not guarantee users real-time access to the required data. For more comprehensive services, users may need customized processing, which incurs additional costs related to labor and data transmission. Secondly, in terms of the provision and transmission of meteorological information, some countries utilize intermediary agencies to offer more stable and detailed meteorological data. For example, in Japan, while the Japan Meteorological Agency provides free open data, it also collaborates with the Japan Meteorological Business Support Center (JMBSC) to deliver real-time, stable paid data, successfully establishing a cooperative model between the government and intermediary organizations. Similarly, South Korea relies on the Korea Meteorological Institute (KMI) as a "weather information support agency" to provide stable services for businesses applying for meteorological data. KMI also actively participates in cross-organizational data cooperation projects, promoting the integration of meteorological data across domains. Meanwhile, the UK Met Office has designed flexible charging schemes to meet the needs of different user groups. The Hong Kong Observatory enhances data-sharing efficiency through open

data and an online application system, while also offering paid services tailored to specific needs. It is worth noting that the scope of meteorological data provision and services varies across countries. For example, the UK Met Office not only provides public weather services and meteorological data but also offers paid, customized commercial data services, assisting businesses in integrating weather data into their operations and strategy formulation.

Lastly, in terms of data integration and application promotion, the ability to integrate meteorological data with other fields and establish cross-domain data platforms is a topic worthy of further exploration. Taking South Korea as an example, the country has established the National Climate Data Center (NCDC) and the Korea Meteorological Institute, and has also actively promoted an "environmental big data platform." By integrating public and private sector data resources, South Korea effectively facilitates the collection and circulation of meteorological and climate big data, gradually forming a collaborative ecosystem.

In conclusion, this article examines various international meteorological data service models and draws on global experiences to propose potential developmental directions for Taiwan's meteorological data provision and service models. In addition to referencing international experiences regarding the scope of free meteorological data and charging mechanisms, further exploration could focus on whether intermediary organizations or units are needed to assist in data transmission or promote the commercial application of meteorological data.

©Chung-Hua Institution for Economic Research 2025