

AI Innovation Powers Energy Transition and National Electrification

- MCEE holds meeting on the Energy Digital and AI Transformation Strategy
- Development of a flagship national AI model for the energy sector and integration of public-sector data
- Government, state-run companies, and AI industry sign MOU on energy data and AI cooperation

The Ministry of Climate, Energy and Environment (MCEE, Minister Kim Sungwhan) announced that it will hold the 4th meeting of the Energy Digital and AI Transformation (DX/AX) Strategy Task Force (TF) on the morning of May 20 at Nine Tree ROKAUS (located in Yongsan-gu, Seoul), together with state-run energy companies and public institutions, the AI industry, and related organizations.

At the meeting, participants will discuss the Energy Digital and AI Transformation Strategy prepared by the MCEE.

In addition, to strengthen public-private cooperation on data and AI in the energy sector, state-run energy companies and public institutions, AI industry players, and related organizations will also sign a memorandum of understanding (MOU) on data and AI collaboration.

The Energy Digital and AI Transformation Strategy consists of key implementation measures including: developing AI models tailored to the energy sector; promoting the use of energy data; and fostering a new industrial ecosystem for

energy AI. The main details are as follows.

1. Development of a flagship national AI model for the energy sector and large-scale demonstration projects

To support the energy transition, the strategy will focus on AI that enables the efficient and stable operation of power grids and promotes electrification on the demand side.

First, the government will pursue a demonstration project for a “Korean-style Kraken^{*}” energy AI service that optimizes the real-time operation, control, and trading of flexible resources within distributed energy-specialized zones, including solar power, wind power, electric vehicles (V2G), energy storage systems (ESS), and heat pumps.

* Named after “Kraken,” the operating platform of a UK energy company, Octopus Energy, the term refers to a large-scale integrated power grid control platform.

In addition, to ensure the stable deployment of renewable energy, AI models for power grid operation and management will be developed to support real-time operational and control optimization, as well as enhanced forecasting capabilities.

In addition, the government plans to promote distributed electricity consumption by combining a “Korean-style Green Button,” which helps optimize energy consumption through efficient electricity-use management at energy-intensive industrial sites and public institutions, with Plus DR (demand response)*.

* A system that provides incentives for electricity consumption, such as charging electric vehicles or energy storage system (ESS), during periods of surplus power supply.

2. Promoting the sharing and utilization of energy data

The government will also establish a foundation for the sharing and utilization of energy data, a key enabler of AI adoption. As a major policy option, it

is considering a highly secure “community cloud*” to create an environment that enables data sharing in the public sector and the safe use of data by private-sector entities such as academia and research institutions.

* A highly secure platform that enables safe data sharing among institutions.

First, the number of participating institutions in the data safe zone currently operated by the Korea Electric Power Corporation (KEPCO) will be expanded from five to 16, and the safe zone at KEPCO headquarters (located in Naju, Jeollanam-do) will be operated as a “data free zone” to improve user access to data.

3. Laying the groundwork for the creation of new energy AI industries

To promote the growth of new industries that combine energy and AI, the government plans to fully launch an “Energy New Industry Accelerator” program that supports the entire business cycle, from idea development and startup formation to investment attraction and overseas market entry, thereby encouraging entrepreneurship and supporting early-stage companies.

In addition, the government will continue to support the development of interdisciplinary talent in high-impact fields where energy and AI can be integrated, such as solar power, ESS, and building energy management.

Lee Hohyeon, Second Vice Minister of MCEE, said, “The digital and AI transformation of the energy sector is a key task in preparing for the era of 100 GW of renewable energy.” He added, “We will expand public-private cooperation on data and AI to revitalize the energy new industry ecosystem and deliver tangible energy innovation outcomes that people can experience.”