

2026 AI for Energy Workshop

(April 7, 2026, Global Strategy Team, KIER)

1 Overview

■ Background

- With AI emerging as a key driver for the energy transition, this workshop is planned as a **follow-up activity to the 7th RD20 'AI for Energy' session.**

■ Event Information

- **Date:** 20–21 April 2026 (Mon–Tue), 09:30–16:30
- **Venue:** Korea Institute of Energy Research (KIER), Daejeon Headquarters
- **Hosted by** Ministry of Climate, Energy and Environment (**MCEE**)^{Korea}, Research and Development 20 for clean energy technologies (**RD20**)
- **Organized by** National Research Council of Science & Technology (**NST**)^{Korea}, Korea Institute of Energy Research (**KIER**)^{Korea}
- **Supported by** National Laboratory of The Rockies (**NLR**)^{USA}, Korea Institute of Energy Technology Evaluation and Planning (**KETEP**)^{Korea}, National Research Council Canada (**NRC**)^{Canada}, National Institute of Advanced Industrial Science and Technology (**AIST**)^{Japan}, The Institute of Physical and Chemical Research (**RIKEN**)^{Japan}, French National Centre for Scientific Research (**CNRS**)^{France}, The Scientific and Technological Research Council of Türkiye (**TUBITAK**)^{Türkiye}, **OCTR Technologies**^{Korea}, UK Energy Research Centre (**UKERC**)^{UK}, Korea Advanced Institute of Science and Technology (**KAIST**)^{Korea}, Pukyong National University (**PKNU**)^{Korea}, Korea Institute of Science and Technology (**KIST**)^{Korea}, Korea Electrotechnology Research Institute (**KERI**)^{Korea}, Korea Energy Agency (**KEA**)^{Korea}, Korea Energy Economics Institute (**KEEI**)^{Korea}

2 | Program

Time	Day 1 – April 20 (Monday)			
09:30~10:00 (30 min)	▶ Registration and Networking			
10:00~12:00 (120 min)	▶ Topic 1: AI for Energy (Chairs: Ray Grout^{NLR}, Mincheol Cho^{AIST})			
	No.	Topic	Organization	Speaker
	1	AI for Energy Systems and Innovation – Global Grid Intelligence : Democratizing AI for Power Systems through International Collaboration	NLR (USA)	Ray Grout
	2	From Fluid Dynamics to System-Level Simulation: Toward Green Hydrogen- and Biomass-Based Energy Systems	RIKEN CSRS (Japan)	Keiichi Mochida
	3	AI Applications in Japanese Home Energy Big Data and Development of External Control Technology for Home Demand-side Resources	AIST (Japan)	Mincheol Cho, Tomonori Honda
4	Physics-Informed Machine Learning for Optimal Operation of Multi-Energy Systems	CNRS, IMT Atlantique (France)	Mohamed Tahar Mabrouk	
12:00~13:30 (90 min)	▶ Lunch			
13:30~13:45 (15 min)	[Opening Ceremony]			
	▶ Opening Remarks (Hohyeon Lee, Vice Minister, Ministry of Climate, Energy and Environment)			
	▶ Welcome Remarks (Yeungshik Kim, Chairperson of NST) ▶ Congratulatory Remarks (Chang-Keun Yi, President of KIER)			
13:45~14:35 (50 min)	▶ Plenary Talks			
	– AI for Accelerating Materials Discovery, Synthesis and Characterization • Anthony Burrell (NLR, USA) – How AI Will Change the Future of the World: Substitution, Reconfiguration, and New Paradigm • Hyeonmo Ku (Former KT CEO, KAIST Professor, Korea)			
14:35~14:50 (15 min)	▶ Coffee Break for Workshop Participants			
14:50~15:50 (60 min)	▶ Topic 1: AI for Energy (Chairs: Ray Grout^{NLR}, Byunggu Yoo^{OCTR Tech.})			
	No.	Topic	Organization	Speaker
	5	AI Based Forecasting for Renewables and Demand-side	TUBITAK MRC (Türkiye)	Dogan Gezer
	6	AI-Driven Autonomous Buildings: Redefining Energy Efficiency through Smart Automation	OCTR Technologies (Korea)	Byunggu Yoo, Hassan Imran
7	A Study on the Effectiveness of Deep Learning in Time-Series Energy Forecasting	KIER (Korea)	Myeongchan Oh	
15:50~17:50 (120 min)	▶ Lab Tour for Workshop Participants (For speakers only, CAST)			
18:30~	▶ Banquet (For speakers only)			

Time	Day 2 – April 21 (Tuesday)			
09:30~10:50 (80 min)	▶ Topic 2: AI for Autonomous Discovery (Chairs: Jae Yong Lee ^{KIER} , Scott Smith ^{NRC})			
	No.	Topic	Organization	Speaker
	1	AI Multi-Agent Driven Energy Facility Operation	KIER (Korea)	Jae Yong Lee
	2	Integrating Open Source Data with Self-Driving Laboratory Design for AI Driven Materials Discovery or Process Optimization	NRC (Canada)	Scott Smith
	3	Policy, Regulation and Risks in AI and Digitalisation for Energy	UKERC, Imperial College London (UK)	Aidan Rhodes
10:50~11:05 (15 min)	▶ Coffee Break			
11:05~12:05 (60 min)	▶ Topic 2: AI for Autonomous Discovery (Chairs: Jae Yong Lee ^{KIER} , Scott Smith ^{NRC})			
	No.	Topic	Organization	Speaker
	4	AI-Powered Automated MOF Discovery	KAIST (Korea)	Jihan Kim
	5	Accelerating Green Energy Electrocatalyst Development through AI-Integrated Multiscale Modeling and Experimental Studies	PKNU (Korea)	Min Ho Seo
	6	MARK: AI Materials Scientist for Nanomaterials	KIST (Korea)	Sang Soo Han
12:05~13:10 (65 min)	▶ Lunch			
13:10~14:50 (100 min)	▶ Topic 3: Energy for AI (Chairs: Taha Selim Ustun ^{AIST} , Chi-Young Jung ^{KIER})			
	No.	Topic	Organization	Speaker
	1	Predictive Maintenance in Power Systems for Increased Performance and Reliability	AIST (Japan)	Taha Selim Ustun
	2	Modeling the Nexus of Generative AI Expansion and Power System Reliability: Quantitative Projections for 2038 Grid Stability	KIER (Korea)	Chang Ki Kim
	3	Intelligent Buildings: Leveraging AI for Electrification, Operation and Optimization	NRC (Canada)	Saptak Dutta
	4	Visual AI-Based Defect Diagnosis for PEMFC and PEMWE Electrode	KIER (Korea)	Chi-Young Jung
	5	AI-Driven Next-Generation EMS in Korea: Recent Advances and Real-Time Node-Level Forecasting of Distributed PV Generation	KERI (Korea)	Jae-Kyeong Kim
14:50~15:05 (15 min)	▶ Coffee Break			
15:05~16:25 (80 min)	▶ Joint Session (Chairs: Anthony Burrell ^{NLR} , Hyunkeong Kim ^{KETEP})			
	No.	Topic	Organization	Speaker
	1	Summary of the 3 Sessions	RD20	Chairs of each session
	2	Further Collaboration Opportunities for International Collaboration	RD20	All
	3	Future Direction of AI Workshop for RD20	RD20	All
16:25~	▶ Wrap-Up and Closing			