



2026 IERE-KEPCO Seoul Energy Equation Workshop
Seoul, South Korea
May 19–22, 2026

Overview of IDPP Platform and Future Research Plan

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Keywords: *Intelligent Digital Power Plant (IDPP), tag standardization, data quality management, AI-native architecture, digital twin*

Abstract

The rapid expansion of renewable energy and carbon neutrality policies has significantly increased operational variability and complexity in power plants. Addressing these challenges requires a data-centric platform capable of real-time acquisition, standardization, validation, and AI-driven utilization of large-scale sensor data. The Intelligent Digital Power Plant (IDPP) integrates heterogeneous OT data, embeds continuous data quality management, and delivers analysis-ready datasets for advanced applications. This paper presents the platform architecture and field deployment experience, and outlines future directions toward global-level productization and AI-native data architecture enabling digital twin-based intelligent plant operations.