

Key technologies of integration and operation optimization of Hydrogen production system powered by renewable energy.

Abstract-Hydrogen energy has become the energy strategy of many countries, which is of great significance for China to achieve the goal of "double carbon". In the report, it first combs the policies and engineering demonstration of hydrogen energy in many countries, and compares the gap between China and the world's advanced technologies from the aspects of core equipment performance indicators and patent ownership distribution, aiming at renewable energy power generation as the main way to obtain "green hydrogen"; Then, the key problems and countermeasures of large-scale renewable energy power generation and hydrogen production are discussed from the system integration design, modeling and simulation, key equipment development, system operation and maintenance, security monitoring and other dimensions. Finally, the research overview of Tongji University research team in this technology field is introduced.