

**Session Title: Nuclear Power as a Power Source for Decarbonization**

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**Abstract title: Development of hydrogen production technology using a high-temperature gas-cooled reactor at JAEA**

The high-temperature gas-cooled reactor (HTGR) has excellent safety features and can generate heat above 900°C, which can be used not only for power generation but also for effective heat utilization including low-cost carbon-free hydrogen production. JAEA possesses the high temperature engineering test reactor equipped with world-leading technologies, which has achieved an operation of world's highest 950°C for 50 days. Also, JAEA succeeded in producing hydrogen continuously for 150 hours using a thermochemical iodine-sulfur process herein necessary heat was supplied from electric heaters instead of heat from HTGR. JAEA will continue to develop innovation technologies for realizing decarbonization and hydrogen society.