

Korea and China boost future nuclear technology partnership

South Korea's Ministry of Science, ICT and Future Planning, and the China Atomic Energy Authority (CAEA) held their Nuclear Power Joint Committee meeting in Seoul last spring where they discussed ways to enhance cooperation on 43 agenda items covering six areas including nuclear power generation, nuclear technology research and development (R&D), nuclear fuel and waste management, nuclear safety, radioactive isotope and radiation applications, and nuclear security. Korean participants of the meeting were led by the 1st Vice Minister of Science, ICT and Planning Lee Seok-jun, and the team from China was headed by Chair Xu Dazhe of the CAEA.

Lee Seok-jun's Ministry aims to use the joint committee as a springboard for expanding partnerships with China, which is pursuing a policy of active expansion of its nuclear industry, in areas such as nuclear safety and security in order to strengthen the region's nuclear safety regime. Noting that China holds advanced technologies related to medical heavy ion accelerators, the Ministry also announced plans to begin a partnership in radioisotope production technologies including accelerators and treatment system manufacturing. The Ministry expects further exchanges of joint research and information between the two countries in cutting-edge designs including sodium-cooled

fast reactors and very high-temperature gas-cooled reactors.

China currently operates 26 nuclear power plants, and as per the country's medium-to-long-term nuclear power development plan (2011–2020), China is rapidly expanding its nuclear infrastructure, with 24 units under construction and 44 on the drawing boards, while actively conducting R&D in related fields such as nuclear fuel and future technologies.

Over the past 15 years the joint committee provided the backdrop for a number of projects, including the establishment of the Korea-China Hydrogen Joint Research Center within the campus of Tsinghua University, China; joint workshops on nuclear thermal hydraulics—with the next workshop planned for October 2015 in Kunming, China; and research into cutting-edge future nuclear power systems.

German and French national academies recommend collaborative energy policies

In preparation for the 21st United Nations Climate Change Conference (COP21), the French and German national academies of science and technology have published a joint statement advocating a stronger partnership between the two countries. This statement points out the fundamental challenges raised for the future: meeting the world energy demand, restraining energy consumption in developed countries, and reducing global emissions of greenhouse gases (GHGs).

While France and Germany have taken different courses in handling their electrical energy generation system (which only represents about 25% of their energy consumption), they also have many common issues. The four academies thus propose several cross-cutting subjects—energy efficiency, energy grids, mobility, nuclear technologies, renewable energy and energy storage, and social and economic aspects—which could benefit from closer scientific and technological cooperation between the two countries. They also emphasize the need for a better understanding of energy issues and their implications in society at

large. Also, the academies call for a systemic approach for European Union (EU)-wide energy policies.

To deal with the challenges raised by an energy transition resulting in a substantial reduction of GHG emissions, the academies assert the central role of science, technology, and industrial development. They consider that the energy questions should be tackled with a systemic approach balancing environmental goals, social expectations, economic objectives, and security of supply. The academies advocate, in particular, strong funding programs for research and development on energy, relying on fundamental research on long-term cross-cutting themes and innovative approaches that can also contribute to improving the international competitiveness of European industry. They call for an intensification of scientific, technological, and industrial cooperation in the priority areas of energy efficiency, network infrastructure, smart grids, mobility, security and management of nuclear waste, fusion, renewable energies, energy storage, and social and

economic aspects of energy transition. The academies underline the need to increase public awareness of energy issues and associated constraints.

The academies consider that the setting of priorities, the agreement on development programs, and the allocation of resources should constitute integral parts of any future European energy policy. EU-wide policies consistent with the long-term goals of the energy transition should be endorsed, aiming at compatibility with policies implemented in other parts of the world.

They also note that the effort committed by Europe to reduce GHG emissions would be of much greater value if the goal of GHG reductions were to be shared on a global level. The academies support the revision of the EU Emissions Trading System and stress that the inclusion of non-EU countries in this scheme should be given a high priority. The academies encourage efforts deployed by both governments to promote an ambitious international agreement in the context of COP21. And they suggest the establishment of an academy-led French-German consultative research committee that could discuss research areas of mutual interest and research priorities in connection with the transformation of the energy system. □