

2.9. Republic of Korea

2.9.1. The Republic of Korea as a partner of the EU

Since 2010, the EU and the Republic of Korea (South Korea) have upgraded their relationship to a Strategic Partnership with agreements in key areas of political, trade and security cooperation, including on global challenges such as terrorism, energy security, and climate change. South Korea is the EU's 8th largest export destination, whereas the EU is South Korea's 4th export destination. EU investment in South Korea is the largest source of Foreign Direct Investment.

Over the past few decades, South Korea has achieved tremendous economic growth and global integration to become a high-tech industrialised economy. South Korean R&D spending as a share of GDP has exceeded 4.1%, which has placed the country at the frontier of cutting-edge technologies, advanced systems and solutions in a range of sectors, from ICT, materials, chemistry and nanotechnologies to health and energy.

EU-South Korea cooperation in a range of strategic R&I areas is therefore increasing the impact of research, promoting breakthroughs and boosting the ability of both sides to tackle global societal challenges effectively and to compete on world markets.

2.9.2. Priorities for S&T cooperation

Both the EU and South Korea emphasise the need to deepen, scale up and open opportunities for cooperation in selected thematic areas.

In the ICT area, a joint call was launched under the 2016-17 WP of Horizon 2020 addressing the topics of 5G communication networks, Internet of Things and brokerage of mobile cloud services. A second joint call is foreseen under Horizon 2020 WP 2018-20 addressing these areas with ongoing discussion with Korean counterparts at MSIP/IITP. The bilateral ICT cooperation also includes other ICT and 5G policy areas such as standardisation and spectrum management.

In the non-nuclear energy area, both sides are engaging in twinning activities in the area of technologies and processes for post- and/or pre-combustion carbon capture. Initiatives for collaboration between EU projects, selected under the 2016-17 WP of Horizon 2020, and endorsed South Korean projects are launched from 2016 onwards.

In the area of nanotechnology, during 2015 and 2016 both sides cooperate through Nanoreg, the multilateral nanosafety initiative for regulatory testing of nanomaterials.

In the area of health and bio-medical challenges, cooperation continues in the context of the Global Research Collaboration for Infectious Disease Preparedness (GloPID-R). The EU and South Korea are also both participating in the International Rare Diseases Research Consortium (IRDiRC) and the International Human Epigenome Consortium (IHEC).

In the area of satellite navigation, the EC-Korea Satellite Navigation Cooperation Agreement, which entered into force on 1 July 2016, foresees the promotion of joint research activities.

Potential further areas of future EU-South Korea S&T cooperation include micro/nanoelectronics, where the two sides have agreed to exchange roadmaps and pursue with twinning/joint activities in view of exploiting synergies and developing a more intense cooperation. Another potential area is materials modelling, where both sides have agreed to promote cooperation and South Korea's active cooperation with the European Materials Modelling Council, a network of materials modelling stakeholders.

In the area of satellite navigation both sides have agreed to continue promoting joint research activities and partnering. Further possibilities are in the areas of innovative medicine and medical equipment, where cooperation could be strengthened e.g. on Anti-Microbial Resistance, via the existing Joint Programming Initiative, and the International Initiative for Traumatic Brain Injury Research. New cooperation opportunities are also being sought in Smart Grids and other emerging areas in the energy industry sector, e.g. through the 'Mission Innovation' initiative on clean energy innovation.

In nuclear energy research, a bilateral Work Program has been adopted with consolidation and extension of collaborative activities, specific cooperation between the South Korean KSTAR and the European JET programmes, joint exploitation of fusion facilities for risk mitigation in ITER delays, discussion on principles of an international networking of facilities in support to ITER, and potential South Korean participation in specific Broader Approach activities.

In fission, cooperation could continue under the calls of the Euratom Programme, and future nuclear energy systems will continue to be addressed (including within the Framework Agreement for International Collaboration on R&D of Generation IV Nuclear Energy Systems). In fusion, South Korea and Euratom have roadmaps for Demonstration Power Station developments. South Korea might be involved in the European fusion programme and the EUROfusion programme including through consolidation of cooperation between the JET and KSTAR tokamaks.

The European Commission's Joint Research Centre collaborates with South Korean institutions on seismic testing techniques for infrastructures, R&D and standardisation in construction.

2.9.3. Framework Conditions

The EU-South Korea Free Trade Agreement is creating new opportunities for market access. It includes provisions in areas such as competition policy, government procurement, intellectual property rights, transparency in regulation and sustainable development.

In spite of the government-level agreement setting positive framework conditions, some practical issues in R&I cooperation still remain to be improved. These are illustrated by the low real access for South Korean-based European entities to South Korean R&I programmes, and the lack of penetration in public procurement of R&D services and innovative solutions. Today, only very few European companies undertake R&D activities in South Korea, whereas there are growing opportunities for cooperation, both in research and in innovation.

To support the participation of entities established in South Korea in Horizon 2020 projects, the South Korean government regularly launches calls for application to co-fund such participation. The mechanism covers all thematic areas of Horizon 2020. The two sides have agreed on early exchange of programme information to enable provision of such co-funding and to allow for monitoring of the cooperation intensity, as well as to continue to support efforts of multipliers, notably National Contact Points and matchmaking events to facilitate partnering with both academia and industry.

Schemes for researchers' mobility are important cooperation arrangements. The Implementing Arrangement for South Korean researchers to join the teams of European Research Council Principal Investigators, signed during the EU-South Korea summit in 2013, is progressing well with several calls and successful visits already undertaken.

Mobility of researchers is also promoted through the EU's Marie Skłodowska-Curie Research Fellowship Programme with hundreds of exchanges already taking place.