

## 2.11. United States

### 2.11.1. *The United States as a partner of the EU*

The United States of America (US) is a long standing partner of the European Union, relations having been formalised in 1990 with the adoption of the Transatlantic Declaration. The European Union and the United States have the largest bilateral trade relationship and enjoy the most integrated economic relationship in the world. Research and innovation cooperation between the EU and the US is governed by the Agreement for Scientific and Technological Cooperation, which entered into force in 1998 and, after several renewals, is valid until October 2018.

Among individual countries, the US remains by far the biggest R&D performer in the world, accounting for almost 30% of global R&D expenditures. 39% of its GDP comes from high-technology manufacturing and knowledge-intensive service industries. It has a research intensity of 2.7%.<sup>43</sup> Regarding participation to Horizon 2020, the US is so far the leading third country participant, both in number of participations and in funding.

The federal government is the primary funder of basic research with technological development primarily funded by industry. While US federal investment in R&D has somewhat stagnated since 2010, US business has increased its R&D investments, particularly in growing, high-opportunity sectors. Throughout a large country like the US certain States like California or Massachusetts play a dominant role in the overall global scientific impact of the country. Interestingly, while the USA is the current world leader in R&D, other countries are catching up and the gap to the followers is closing.

The U.S has established a global network of scientific cooperation and is also a privileged partner country for many EU Member States in science, technology or innovation cooperation.

### 2.11.2. *Priorities for S&T cooperation*

Under the EU-US Science and Technology Agreement, health research cooperation with the US National Institutes of Health (NIH) is a key priority, benefiting from mutual opening of the respective programmes leading to significant levels of cooperation in the first years of Horizon 2020. NIH participates also in several multilateral initiatives together with the EU, such as the International Rare Diseases Research Consortium (IRDiRC), International Cancer Genome Consortium (ICGC) and the Global Alliance of Chronic Diseases (GACD).

In the area of transport research there is a clear interest in collaborating in areas where inter-operability is necessary to ensure smooth and secure transatlantic/global flows (e.g. transport management systems and cargo tracking and tracing, aviation in general).

EU-US cooperation on energy technology research and innovation continues to be promoted under the EU-US Energy Council and its Technology Working Group. Horizon 2020 has put a strong emphasis on clean energy research and innovation compared to previous Research Framework Programmes. Indeed, there is strong potential for EU-US cooperation as follow up to COP21 and under the Mission Innovation initiative with both sides aiming to strengthen and accelerate global clean energy innovation with the objective to make clean energy widely affordable. Related research, development and

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<sup>43</sup> National Science Board Science and Engineering Indicators 2016:  
<http://www.nsf.gov/statistics/2016/nsb20161/#/report>

demonstration issues are expected to become a major driver to focus the cooperation between the EU and US in the years to come.

Fusion energy is one of the four priority areas agreed to expand under the EU-US Energy Council. The bilateral cooperation in the field of nuclear fission energy research cooperation will continue to focus on nuclear safety as the highest priority.

A specific call in 2017 will provide European and North American researchers, industry and policymakers with a platform to enhance and deepen transatlantic dialogue on environmental issues related to Carbon Capture and Storage (CCS) and to accelerate learning and provide advanced training on unconventional hydrocarbon development. Connecting pilots and projects across the Atlantic should bring the benefits of cross-validation of technologies, sharing results, distributing tasks, bundling expertise and expanding professional networks.

The area of marine and Arctic cooperation should further expand as the implementation of the Galway Statement increases momentum. The type of activities could be more programme level cooperation in form of programme alignment with relevant US partners as discussed with NSF, NASA and in particular NOAA.

The EU Human Brain Project<sup>44</sup> and the US BRAIN Initiative<sup>45</sup> provide a further possibility for large scale cooperation on the basis of existing initiatives. In the case of the FET Flagship Graphene, a EU-US collaboration scheme has been launched together with NSF.

Over the last years regular workshops on Future Internet Experimentation have been organised between EU and US. In the annual EU-US ICT Dialogue 2016 it was agreed to explore possibilities to scale up the collaboration.

Another ICT area where a further development of EU-US cooperation is expected is cyber-physical systems (CPS). This transatlantic collaboration on societal-scale CPS should promote global standards and interoperability for safe and secure CPS platforms and applications.

Collaboration between Europe and the United States in the domain of Research Infrastructures is considered as highly strategic especially in the frame of consolidating the support to the Transatlantic Ocean Research Alliance. Increased cooperation on marine and Arctic Research Infrastructures (interoperability, data management, better use and access, funding strategy, innovation and links with industry) is planned. The publication of the 2016 ESFRI Research Infrastructure roadmap also provides a number of additional opportunities for collaboration which could be explored in the frame of dedicated dialogues.

In addition, direct scientific cooperation between the JRC and the US is progressing with NOAA, the U.S. Geological Survey (USGS), and the U.S. Department of Energy (DOE).

### *2.11.3. Framework Conditions*

The US provides innovation-friendly framework conditions and its investment climate makes it an attractive place to commercialize innovative products, services and solutions. In addition, the US has one of the world's strongest legal systems for the protection of intellectual property rights.

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<sup>44</sup> <https://www.humanbrainproject.eu/>

<sup>45</sup> <http://www.nih.gov/science/brain/>

The general framework conditions for EU-US cooperation have been improving over successive Framework Programmes. As a unique feature in the bilateral S&T cooperation, US participants are eligible to receive EU funding in projects funded through the Horizon 2020 Health challenge, reflecting the reciprocal funding offered to EU participants by the NIH.

While cooperation tends to become more visible and effective at programme level, bottom up project participation is also a strong feature of the cooperation. Some US Federal entities are reluctant or unable to sign the Horizon 2020 grant agreements and therefore do not become formal partners in Horizon 2020 projects. The two sides have agreed that progress on reciprocal understanding of legal, administrative and financial issues of Horizon 2020 as well as relevant US programmes is needed.