



2021 G7 Cornwall Summit Final Compliance Report

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“We have meanwhile set up a process and there are also independent institutions monitoring which objectives of our G7 meetings we actually achieve. When it comes to these goals we have a compliance rate of about 80%, according to the University of Toronto. Germany, with its 87%, comes off pretty well. That means that next year too, under the Japanese G7 presidency, we are going to check where we stand in comparison to what we have discussed with each other now. So a lot of what we have resolved to do here together is something that we are going to have to work very hard at over the next few months. But I think that it has become apparent that we, as the G7, want to assume responsibility far beyond the prosperity in our own countries. That’s why today’s outreach meetings, that is the meetings with our guests, were also of great importance.”

Chancellor Angela Merkel, Schloss Elmau, 8 June 2015

G7 summits are a moment for people to judge whether aspirational intent is met by concrete commitments. The G7 Research Group provides a report card on the implementation of G7 and G20 commitments. It is a good moment for the public to interact with leaders and say, you took a leadership position on these issues — a year later, or three years later, what have you accomplished?

Achim Steiner, Administrator, United Nations Development Programme,
in G7 Canada: The 2018 Charlevoix Summit

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21. International Cooperation: Research Transparency

“Collaborate on science-based responses to global challenges and drive innovation by calling on every nation to increase their research transparency and integrity.”

2021 Open Societies Statement

Assessment

	No Compliance	Partial Compliance	Full Compliance
Canada			+1
France		0	
Germany		0	
Italy		0	
Japan		0	
United Kingdom			+1
United States		0	
European Union			+1
Average		+0.38 (69%)	

Background

Scientific innovation and collaboration on global issues have been consistent priorities of the G7. More recently, intergovernmental organizations have acknowledged the damage that misconduct in research has on scientific advancement, economic competitiveness, health, national security and the motivation of public officials.⁴⁴⁴⁸ Additionally, the recent COVID-19 pandemic has shown how international collaboration can result in rapid scientific advances that can save lives.⁴⁴⁴⁹ Given the diversity of global challenges faced, the G7 recognizes the importance of collaboration between nations and of the ambition that drives innovation.

The 1978 Bonn Summit marked the first time G7 leaders highlighted the need to conduct joint and coordinated research to address a global problem.⁴⁴⁵⁰ Leaders specifically addressed the development of renewable energy and aimed to discover and innovate new energy sources and find more efficient uses of existing sources through research.

At the 1985 Bonn Summit, G7 leaders emphasized that international cooperation in research and technology in major projects should be enhanced to maximize scientific potential.⁴⁴⁵¹ Thus, they committed to ensuring that shared participation, responsibility, and adequate rules concerning access to the results achieved, the transfer of technology, and the use of technologies involved would be present in future scientific projects.

At the 1990 Houston Summit, G7 leaders agreed that successfully integrating environmental and economic goals required decision-makers in government and industry to have expanded cooperative scientific and economic research and analysis on the environment.⁴⁴⁵² Thus, the G7 leaders supported accelerated scientific research, analysis on the potential impacts of climate change, and potential responses of various countries.

⁴⁴⁴⁸ Best Practices for Ensuring Scientific Integrity and Preventing Misconduct, Organisation for Economic Co-operation and Development (Paris) 28 November 2007. Access Date: 25 September 2021. <https://www.oecd.org/science/inno/40188303.pdf>

⁴⁴⁴⁹ Data for international health emergencies: governance, operations and skills, Royal Society of Canada (Ottawa) 31 March 2021. Access Date: 26 October 2021. https://rsc-src.ca/sites/default/files/DES7289_3_S7%20Statement_Data_EN_FINAL.pdf

⁴⁴⁵⁰ Declaration, G7 Information Centre Group (Toronto) 17 July 1978. Access Date: 25 September 2021. <http://www.g7.utoronto.ca/summit/1978bonn/communique.html>

⁴⁴⁵¹ The Bonn Economic Declaration: Towards Sustained Growth and Higher Employment, G7 Information Centre (Toronto) 4 May 1985. Access Date: 25 September 2021. <http://www.g7.utoronto.ca/summit/1985bonn/communique.html>

⁴⁴⁵² Houston Economic Declaration, G7 Information Centre (Toronto) 11 July 1990. Access Date: 25 September 2021. <http://www.g7.utoronto.ca/summit/1990houston/declaration.html>

The leaders also discussed the launching of the Human Frontier Science Program, which they hoped would make positive contributions to the advancement of basic research in life sciences for the benefit of all people.

At the 1995 Halifax Summit, G7 leaders discussed the challenges of the upcoming 21st century and asked for closer international cooperation in safeguarding the financial system.⁴⁴⁵³ They agreed on the deepening of cooperation among regulators and supervisory agencies to ensure an integrated approach to enhancing the transparency necessary to monitor and contain risks. The leaders also agreed that transparent and accountable governance, investment in people, and environmental protection are the foundations of sustainable development and are essential to reinforcing national efforts.

At the 2006 St. Petersburg Summit, G8 leaders agreed to promote global innovation by developing the “knowledge triangle,” consisting of education, research, and innovation.⁴⁴⁵⁴ They acknowledged that as scientific progress becomes increasingly global, international collaboration is essential to find solutions to global challenges, and called for improved scientific research and exchanges between states. The leaders also committed to involving scientists from developing countries in efforts to further develop the Global HIV Vaccine Enterprise and welcomed the Government of Russia’s initiative to involve Eastern European and Central Asian countries in its activities through the establishment of a regional coordination mechanism.⁴⁴⁵⁵

At the 2007 Heiligendamm Summit, G8 leaders agreed on innovation as one of the crucial drivers of economic growth and agreed to promote innovation, research, and development.⁴⁴⁵⁶ They also recognized the need for innovation to be protected worldwide and identified Intellectual Property Rights (IPRs) as a precondition for innovation.

At the 2012 Camp David Summit, G8 leaders committed to the New Alliance for Food Security and Nutrition as part of a shared commitment to achieve global food security.⁴⁴⁵⁷ As part of the Alliance, G8 leaders pledged to share relevant agricultural data available from G8 countries with African partners, explore approaches that could expand African access to nutritional technologies developed by national research institutions, and develop a policy research agenda.

At the 2016 Ise-Shima Summit, G7 leaders committed to taking concrete actions for advancing global health as elaborated in the G7 Ise-Shima Vision for Global Health and emphasized promoting research and development in other health areas.⁴⁴⁵⁸ The leaders also recognized that innovation was critical for an effective global response to the climate challenge and committed to playing a leading role in Mission Innovation. Additionally, G7 leaders pledged support for scientific work to enhance global ocean observation and assessment for the science-based and sustainable use of marine resources.

At the 2020 USA Virtual Summit G7 leaders recognized that the challenges related to the COVID-19 pandemic need a coordinated international approach based on scientific evidence, consistent with democratic values and utilizing the strengths of private enterprise through encouraging cooperative research and collaboration in

⁴⁴⁵³ Halifax Summit Communiqué, G7 Information Centre (Toronto) 16 June 1995. Access Date: 24 September 2021.

<http://www.g7.utoronto.ca/summit/1995halifax/communique/index.html>

⁴⁴⁵⁴ Education for Innovation Societies in the 21st Century, G7 Information Centre (Toronto) 16 July 2006. Access Date: 24 September 2021. <http://www.g7.utoronto.ca/summit/2006stpetersburg/education.html>

⁴⁴⁵⁵ Fight Against Infectious Disease, G7 Information Centre (Toronto) 16 July 2006. Access Date: 24 September 2021. <http://www.g7.utoronto.ca/summit/2006stpetersburg/education.html>

⁴⁴⁵⁶ Chair’s Summary, G7 Information Centre (Toronto) 8 June 2007. Access Date: 24 September 2021. <http://www.g7.utoronto.ca/summit/2007heilgendamm/g8-2007-summary.pdf>

⁴⁴⁵⁷ Fact Sheet: G8 Action on Food Security and Nutrition, G7 Information Centre (Toronto) 18 May 2012. Access Date: 24 September 2021. <http://www.g7.utoronto.ca/summit/2012campdavid/g8-food-security-factsheet.html>

⁴⁴⁵⁸ G7 Ise-Shima Leaders’ Declaration, G7 Information Centre (Toronto) 27 May 2016. Access Date: 25 September 2021. <http://www.g7.utoronto.ca/summit/2016shima/ise-shima-declaration-en.html>

scientific and technological fields.⁴⁴⁵⁹ They also agreed to increase coordinated research efforts through voluntary support for the global alliance Coalition for Epidemic Preparedness and Innovation (CEPI).

Commitment Features

At the 2021 Cornwall Summit, G7 leaders committed to “collaborate on science-based responses to global challenges and drive innovation by calling on every nation to increase their research transparency and integrity.” This commitment can be broken down into two parts and to receive full compliance, G7 members must take action in both. These parts are: “Collaborate on science-based responses to global challenges,” and “drive innovation by calling on every nation to increase their research transparency and integrity.”

“Collaborate” is understood to mean a coordinated, synchronous activity that is the result of a continued attempt to construct and maintain a shared conception of a problem.⁴⁴⁶⁰ Compliance can be achieved by two or more G7 members working to solve the same issue and consistently sharing data and/or creating joint initiatives to implement positive changes until the next summit. G7 members that collaborate with non-G7 members would only count for partial compliance, unless the G7 member collaborates with non-members in addition to working with other G7 members.

In the context of the commitment, “science-based responses” refers to decisions made using knowledge about or study of the natural world based on facts learned through experiments and observation.⁴⁴⁶¹ This includes, but is not limited to, empirical data, geographic measurements and analyzed lab experiments.

“Global challenges” are understood to mean any major trend, shock or development that has the potential for serious global impacts.⁴⁴⁶² Examples of current global challenges include the COVID-19 pandemic and climate change, both of which continue to have negative impacts on the health and security of people and the global economy.

“Drive” is understood to mean urging relentlessly to continuous exertion.⁴⁴⁶³ In the context of the commitment, it refers to urging continuous exertion to innovate.

“Innovation” is understood as the embodiment of an idea in a technology, product or process that is new and creates value.⁴⁴⁶⁴ An innovation is the implementation of a new or significantly improved product (good or service), or process which derives from creative ideas, technological progress, a new marketing method, a new organizational method in business practices, workplace organization or external relations. Innovation covers a wide range of domains with science and technology as the core.

⁴⁴⁵⁹ G7 Leaders’ Statement, G7 Information Centre (Toronto) 16 March 2020. Access Date: 23 September 2021.

<http://www.g7.utoronto.ca/summit/2020usa/covid-200316.html>

⁴⁴⁶⁰ PISA 2015 Collaborative Problem-Solving Framework, Organisation for Economic Co-operation and Development (Paris) July 2017. Access Date: 25 September 2021.

<https://www.oecd.org/pisa/pisaproducts/Draft%20PISA%202015%20Collaborative%20Problem%20Solving%20Framework%20.pdf>

⁴⁴⁶¹ Science, Merriam-Webster (Springfield) n.d. Access Date: 26 September 2021. <https://www.merriam-webster.com/dictionary/science>

⁴⁴⁶² Global Challenges and their Impact on International Humanitarian Action, United Nations Office for the Coordination of Humanitarian Affairs (New York) January 2010. Access Date: 26 October 2021. <https://www.unocha.org/sites/unocha/files/Global%20challenges%20and%20their%20impact%20on%20international%20humanitarian%20action.pdf>

⁴⁴⁶³ Drive, Merriam-Webster (Springfield) n.d. Access Date: 26 October 2021. <https://www.merriam-webster.com/dictionary/drive>

⁴⁴⁶⁴ Compliance Coding Manual for International Institutional Commitments, G7 and G20 Research Groups (Toronto) 12 November 2020. Access Date: 26 October 2021 http://www.g7.utoronto.ca/compliance/Compliance_Coding_Manual_2020.pdf

“Calling on” is understood to mean promoting or motioning others to associate with the mentioned requirement.⁴⁴⁶⁵ In the context of the commitment, “others” refers to every nation and the “mentioned requirement” refers to increasing their research transparency and integrity.

“Increase” refers to something becoming progressively greater in amount, number, or intensity.⁴⁴⁶⁶ In the context of the commitment, it refers to research transparency and integrity becoming greater.

“Transparency” is understood to mean something being open, frank and candid.⁴⁴⁶⁷ In the context of the research, it can refer to the obligation to make data, analysis, methods and the researcher’s interpretive choices visible in a way that allows others to evaluate them.⁴⁴⁶⁸

“Integrity” is understood to mean the consistent alignment of, and adherence to, shared ethical values, principles, and norms for upholding and prioritising the public interest over private interests in the public sector.⁴⁴⁶⁹ Calling on increased research integrity is often closely linked to transparency, and can include calling on increased accountability of research errors, open communication of findings and the respect of all research participants.

Full compliance, or a score of +1, for this commitment requires G7 members to satisfy both commitment targets. They must take strong actions to “collaborate on science-based responses to global challenges” and “drive innovation by calling on every nation to increase their research transparency and integrity.” As well, this commitment is subject to a depth analysis which includes both domestic and international actions. Examples of strong domestic actions include, but are not limited to, allocating money towards science-based research to impact issues such as climate change and global hunger and creating programs or governmental departments dedicated to specific research. Examples of strong international action can include, but are not limited to, ratifying treaties whose purpose is to encourage scientific innovation and/or encourage transparency in that research.

Partial compliance, or a score of 0, will be assigned to G7 members if one of the following scenarios takes place: the member satisfies only one of the commitment targets, either collaborating on science-based responses to global challenges with other G7 members or making efforts to drive innovation by calling on every nation to increase their research transparency and integrity, or the member takes only weak action on both parts of the commitment. Examples of weak action include, but are not limited to, attending a meeting that discusses the importance of scientific collaboration and/or research transparency, and verbally reaffirming the commitment but taking no strong steps to achieve any part of it.

Non-compliance, or a score of -1, will be assigned to G7 members who satisfy neither of the commitment targets by neither collaborating on science-based responses to global challenges with other G7 members nor making efforts to drive innovation by calling on every nation to increase their research transparency.

⁴⁴⁶⁵ Compliance Coding Manual for International Institutional Commitments, G7 and G20 Research Groups (Toronto) 12 November 2020. Access Date: 26 October 2021 http://www.g7.utoronto.ca/compliance/Compliance_Coding_Manual_2020.pdf

⁴⁴⁶⁶ Increase, Merriam-Webster (Springfield) n.d. Access Date: 26 October 2021. <https://www.merriam-webster.com/dictionary/increase>

⁴⁴⁶⁷ Compliance Coding Manual for International Institutional Commitments, G7 and G20 Research Groups (Toronto) 12 November 2020. Access Date: 23 September 2021 http://www.g7.utoronto.ca/compliance/Compliance_Coding_Manual_2020.pdf

⁴⁴⁶⁸ Transparency in Qualitative Research, Princeton University (Princeton) n.d. Access Date: 26 September 2021. <https://www.princeton.edu/~amoravcs/library/TransparencyinQualitativeResearch.pdf>

⁴⁴⁶⁹ OECD Recommendation on Public Integrity, Organisation for Economic Co-operation and Development (Paris) n.d. Access Date: 25 September 2021. <https://www.oecd.org/gov/ethics/recommendation-public-integrity/>

Scoring Guidelines

-1	The G7 member has not taken any or has taken insufficient steps to collaborate on science-based responses to global challenges with other G7 members NOR made any efforts to drive innovation by calling on every nation to increase their research transparency and integrity.
0	The G7 member has taken strong steps to collaborate on science-based responses to global challenges with other G7 members OR made efforts to drive innovation by calling on every nation to increase their research transparency and integrity, OR the G7 member has only taken partial action on both components.
+1	The G7 member has taken strong steps to collaborate on science-based responses to global challenges with other G7 members AND made efforts to drive innovation by calling on every nation to increase their research transparency and integrity.

Compliance Director: Sofia Shatrova

Lead Analyst: Madison Skoblo

Canada: +1

Canada has fully complied with its commitment to collaborate on science-based responses to global challenges and drive innovation by calling on every nation to increase their research transparency and integrity.

On 15 June 2021, the Natural Sciences and Engineering Research Council of Canada (NSERC) announced its partnership with the US National Science Foundation.⁴⁴⁷⁰ The partnership will allow both countries to collaborate on science and emerging technology research to promote economic well-being and technological creativity.

On 25 June 2021, the NSERC and the Federal Ministry of Education and Research of Germany (BMBF) jointly selected ten projects to deepen both countries' collaborative hydrogen research.⁴⁴⁷¹ The projects aim to lead to findings that advance hydrogen as a major renewable source worldwide, putting Canada and Germany at the forefront of the new green hydrogen economy and fight against climate change. These projects also set a precedent for future joint activities, as agreed at the Cornwall G7 summit between Prime Minister Trudeau and Chancellor Merkel.

On 29 June 2021, Minister of Infrastructure and Communities Catherine McKenna announced Canada's entry into the Coalition on Disaster Resilient Infrastructure.⁴⁴⁷² The Coalition promotes the resilience of infrastructure systems to better resist climate change, and allows climate experts around the world to advance innovative and sustainable climate change solutions.

On 6 July 2021, Health Canada published improved Development Safety Update Reports alongside the Medicines and Healthcare products Regulatory Agency.⁴⁴⁷³ The report aims to improve the safety of patients in clinical trials globally to increase trial transparency and thus improve the quality of international research.

⁴⁴⁷⁰ New US-Canada partnership announced for collaboration in research and innovation, Natural Sciences and Engineering Research Council of Canada (Ottawa) 15 June 2021. Access Date: 30 January 2022. https://www.nserc-crsng.gc.ca/Media-Media/NewsDetail-DetailNouvelles_eng.asp?ID=1271

⁴⁴⁷¹ Strong impetus for the German-Canadian hydrogen cooperation, Federal Ministry of Education and Research (Berlin) 25 June 2021. Translation provided by Google Translate. Access Date: 15 December 2021. <https://www.bmbf.de/bmbf/shareddocs/pressemitteilungen/de/starke-impulse-fuer-die-deutsch-adische-wasserstoffkooperation.html>

⁴⁴⁷² Government of Canada joins the Coalition on Disaster Resilient Infrastructure, Infrastructure Canada (Ottawa) 29 June 2021. Access Date: 19 December 2021. <https://www.canada.ca/en/office-infrastructure/news/2021/06/government-of-canada-joins-the-coalition-on-disaster-resilient-infrastructure.html>

⁴⁴⁷³ MHRA releases guidance in collaboration with Health Canada to improve patient safety in clinical trials through improving the quality of Development Safety Update Reports, Medicines and Healthcare products Regulatory Agency (London) 6 July 2021. Access Date: 23 December 2021. <https://www.gov.uk/government/news/mhra-releases-guidance-in-collaboration-with-health-canada-to-improve-patient-safety-in-clinical-trials-through-improving-the-quality-of-development-s>

On 12 July 2021, the Government of Canada released new National Security Guidelines for Research Partnerships.⁴⁴⁷⁴ The Guidelines will require Canadian researchers to complete security risk assessment before submitting grant applications for projects involving collaboration with foreign countries. This requirement aims to preserve Canada's scientific collaboration with other countries while protecting Canadian intellectual property against foreign theft and interference. The guidelines aim to promote research openness and transparency in Canada and the countries with which it collaborates.⁴⁴⁷⁵

On 6 August 2021, Minister of Innovation, Science and Industry François-Philippe Champagne announced that the National Research Council of Canada (NRC) would provide 114 research projects with more than CAD23 million in funding.⁴⁴⁷⁶ The funds will allow NRC scientists to collaborate with international academics on projects to improve virus diagnosis and environmental sustainability.

On 3 November, Minister Champagne met with the US' Secretary of Commerce Gina Raimondo to outline a plan to increase cross-border COVID-19 collaboration between the US and Canada.⁴⁴⁷⁷ Under the plan, Ministers Raimondo and Champagne agreed to share approaches on enhancing security of software supply chains and expand work on net-zero industrial transformation and renewable energy sources.

On 14 January 2022, Minister of Health Jean-Yves Duclos announced the creation of the Centre for Research on Pandemic Preparedness and Health Emergencies with an ongoing investment of CAD18.5 million per year.⁴⁴⁷⁸ The Research Center collaborates with federal departments and agencies and domestic and international stakeholders to enhance Canada's capacity to research and mobilize knowledge to prevent, prepare for, respond to and recover from existing and future pandemics and public health emergencies.

On 25 April 2022, the NSERC announced a formal partnership with the French National Centre for Scientific Research.⁴⁴⁷⁹ The partnership will allow Canadian and French scientists and engineers to explore cutting-edge research that can address environmental, economic and social issues.

Canada has fully complied with its commitment to collaborate on science-based responses to global challenges and drive innovation by calling on every nation to increase their research transparency and integrity. Canada has taken strong action to collaborate on scientific research with G7 members by creating partnerships and guidelines and allocating funds. Canada has also created guidelines that encourage international research transparency.

Thus, Canada has received a score of +1.

Analyst: Qianai Cheng

⁴⁴⁷⁴ Government of Canada takes action to protect Canadian research and intellectual property, Innovation, Science and Economic Development Canada (Ottawa) 12 July 2021. Access Date: 30 January 2022. <https://www.canada.ca/en/innovation-science-economic-development/news/2021/07/government-of-canada-takes-action-to-protect-canadian-research-and-intellectual-property.html>

⁴⁴⁷⁵ How can I assess risks in partnerships? Executive Summary of National Security Guidelines for Research Partnerships, Government of Canada (Ottawa) 12 July 2021. Access Date: 30 January 2022. https://science.gc.ca/eic/site/063.nsf/eng/h_98256.html

⁴⁴⁷⁶ Government of Canada funding research collaborations for breakthrough technologies, National Research Council Canada (Ottawa) 6 August 2021. Access Date: 30 January 2022. <https://www.canada.ca/en/national-research-council/news/2021/08/government-of-canada-funding-research-collaborations-for-breakthrough-technologies.html>

⁴⁴⁷⁷ Joint Readout on Cooperation between the U.S. Department of Commerce and Innovation, Science and Economic Development Canada, U.S. Department of Commerce (Washington, D.C.) 3 November 2021. Access Date: 30 January 2022. <https://www.commerce.gov/news/press-releases/2021/11/joint-readout-cooperation-between-us-department-commerce-and-innovation>

⁴⁴⁷⁸ Government of Canada creates Centre for Research on Pandemic Preparedness and Health Emergencies, Canadian Institutes of Health Research (Ottawa) 14 January 2022. Access Date: 16 January 2022. <https://www.canada.ca/en/institutes-health-research/news/2022/01/government-of-canada-creates-centre-for-research-on-pandemic-preparedness-and-health-emergencies.html>

⁴⁴⁷⁹ New Canada–France partnership for collaboration in research and innovation, Natural Sciences and Engineering Research Council of Canada (Ottawa) 25 April 2022. Access Date: 8 May 2022. https://www.nserc-crsng.gc.ca/Media-Media/NewsDetail-DetailNouvelles_eng.asp?ID=1324

France: 0

France has partially complied with its commitment to collaborate on science-based responses to global challenges and drive innovation by calling on every nation to increase their research transparency and integrity.

On 6 July 2021, Minister for Higher Education, Research and Innovation Frédérique Vidal announced the 2nd National Plan for Open Science.⁴⁴⁸⁰ The plan aims to triple the budget for open science from EUR5 million to EUR15 million, with a target of 100 per cent open access publications by 2030. This plan has an international component by contributing to France's commitments to transparency of public action within the framework of the Open Government Partnership, which involves more than 70 countries worldwide, including United Kingdom, United States, Canada, Germany and Italy.⁴⁴⁸¹

On 9 August 2021, the Intergovernmental Panel on Climate Change published its Sixth Assessment Report of the Intergovernmental Panel on Climate Change, which French scientists co-authored alongside 250 scientists from over 60 countries.⁴⁴⁸² The report outlined climate change trends and reaffirmed the need to globally reduce greenhouse gas emissions.

On 3 September 2021, France hosted the International Union for Conservation of Nature World Conservation Congress.⁴⁴⁸³ 1500 members representing more than 160 states, government agencies, economic development agencies, scientific and university institutions, businesses, civil society and indigenous peoples met in support of biodiversity research and conservation efforts.⁴⁴⁸⁴

On 15 September 2021, France, Germany, and the United Kingdom announced they were extending their partnership in neutron research.⁴⁴⁸⁵ The three states signed an agreement that extends their longstanding cooperation as the sponsors of the Laue-Langevin Institute from 2024 to 2033. In this new period, the three signatory G7 members expect a total of EUR1 billion in contributions. The extended partnership will continue to grant experts access to world-class neutron radiation research, which has wide-ranging applications in understanding and treating COVID-19, Alzheimer's, and improving batteries for electric cars.

On 28 September 2021, French pharmaceutical company Sanofi announced the halt of its own mRNA-based COVID-19 vaccine development due to the challenges of competing with BioNTech.⁴⁴⁸⁶ Instead, Sanofi will collaborate with British company GlaxoSmithKline to bring another COVID-19 vaccine to the market.

⁴⁴⁸⁰ INRAE committed to open science, National Institute of Agricultural Research (Paris) 6 July 2021. Access Date: 19 March 2022. <https://www.inrae.fr/en/inrae-committed-open-science>

⁴⁴⁸¹ The Minister of Higher Education, Research and Innovation, Frédérique Vidal, announces a 2nd National Plan for Open Science, Ministry of Higher Education, Research and Innovation (Paris) 6 July 2021. Access Date: 19 March 2022. <https://www.enseignementsup-recherche.gouv.fr/fr/la-ministre-de-l-enseignement-superieur-de-la-recherche-et-de-l-innovation-frederique-vidal-annonce-48548>

⁴⁴⁸² France welcomes the publication of the first volume of the IPCC's Sixth Assessment Report - Press release (9 August 2021), Ministry for Europe and Foreign Affairs (Paris) 9 August 2021. Access Date: 30 January 2022. <https://www.diplomatie.gouv.fr/en/french-foreign-policy/climate-and-environment/news/article/france-welcomes-the-publication-of-the-first-volume-of-the-ipcc-s-sixth>

⁴⁴⁸³ World Conservation Congress, International Union for Conservation of Nature (Gland) n.d. Access Date: 30 January 2022. <https://www.iucn.org/about/world-conservation-congress>.

⁴⁴⁸⁴ IUCN Director General's statement for the UN Biodiversity Conference, International Union for Conservation of Nature (Gland) 11 October 2021. Access Date: 22 December 2021. <https://www.iucn.org/news/secretariat/202110/iucn-director-generals-statement-un-biodiversity-conference>

⁴⁴⁸⁵ Germany, France, and the United Kingdom extend their partnership in neutron research, Federal Ministry of Education and Research (Berlin) 15 September 2021. Translation provided by Google Translate. Access Date: 21 December 2021. <https://www.bmbf.de/bmbf/shareddocs/pressemitteilungen/de/2021/09/150921-Neutronenforschung.html>

⁴⁴⁸⁶ Sanofi ditches mRNA COVID-19 vaccine after rivals' success, Reuters (London) 28 September 2021. Access Date: 24 December 2021. <https://www.reuters.com/business/healthcare-pharmaceuticals/frances-sanofi-announces-positive-update-mrna-based-covid-19-vaccine-candidate-2021-09-28/>

On 2 November 2021, Director of Sustainable Development of the French Space Agency Laurence Monnoyer-Smith and Chief Executive of the UK Space Agency Paul Bate announced MicroCarb, a joint British and French satellite mission intended to monitor atmospheric carbon dioxide.⁴⁴⁸⁷ MicroCarb will become operational in 2023, and will collect data essential to monitoring international efforts to meet Paris Agreement climate targets.

On 18 November 2021, the Ministry of Research of France and the German Federal Ministry of Education and Research launched a series of Franco-German joint projects to strengthen both states' knowledge, technology transfer and cutting-edge research in the field of artificial intelligence (AI).⁴⁴⁸⁸ France and Germany will provide funding worth around EUR12 million to 20 projects that pool research strengths and create the foundation for developing cutting-edge technologies in the two countries. German Federal Minister of Education and Research Anja Karliczek said this was an important contribution to the “development of trustworthy AI made in Europe” and the strengthening of “technological sovereignty.”

On 25 November 2021, France attended the Sixth Ministerial Meeting of the East Mediterranean Gas Forum and committed to engaging governments, businesses, and the private sector to use financing and technologies to reduce carbon emissions.⁴⁴⁸⁹ Ministers present at the meeting also committed to working together to develop joint initiatives for climate action before the COP27 summit.

On 4 February 2022, Minister for Higher Education, Research and Innovation Frédérique Vidal inaugurated the Paris Open Science European Conference (OSEC).⁴⁴⁹⁰ OSEC focuses on research assessment reform and the possibility of implementing systems that make health research transparent and widely available.

On 9 February 2022, France hosted the One Ocean Summit in Brest as part of its Presidency of the European Union.⁴⁴⁹¹ The summit aims to rally the international community around issues affecting the ocean, including climate change, pollution and overfishing. The 41 states and representatives present committed to jointly preserving biodiversity and mitigating climate change.⁴⁴⁹²

On 24 March 2022, President Macron announced the launch of the Food and Agriculture Resilience Mission (FARM) with the European Union, G7 and African Union partners.⁴⁴⁹³ FARM aims to protect global food security by improving sustainable agricultural capabilities.

On 25 April 2022, the French National Centre for Scientific Research announced a formal partnership with the Natural Sciences and Engineering Research Council of Canada.⁴⁴⁹⁴ The partnership will allow French and

⁴⁴⁸⁷ UK and France reach new agreement on climate change mission, UK Space Agency (Swindon) 2 November 2021. Access Date: 23 December 2021. <https://www.ukspace.org/uk-and-france-reach-new-agreement-on-climate-change-mission/>

⁴⁴⁸⁸ Karliczek: Together with France, we are promoting trustworthy “AI made in Europe”, Federal Ministry of Education and Research (Berlin) 18 November 2021. Translation provided by Google Translate. Access Date: 22 December 2021. <https://www.bmbf.de/bmbf/shareddocs/pressemitteilungen/de/2021/11/181121-Deu-Frz-KI-Projekte.html>

⁴⁴⁸⁹ 6th EMGF Ministerial Meeting – November 25th, 2021, East Mediterranean Gas Forum (Cairo) 25 November 2021. Access Date: 30 January 2022. https://emgf.org/gva_event/6th-emgf-ministerial-meeting-november-25th-2021/

⁴⁴⁹⁰ Success of the European Open Science Days (OSEC) in Paris as part of the French Presidency of the European Union, Ministry of Higher Education, Research and Innovation (Paris) 10 February 2022. Translation provided by Google Translate. Access Date: 19 March 2022. <https://www.enseignementsup-recherche.gouv.fr/fr/succes-des-journees-europeennes-de-la-science-ouverte-osec-paris-dans-le-cadre-de-la-presidence-83762>

⁴⁴⁹¹ One Ocean Summit - Jean-Yves Le Drian takes part in the One Ocean Summit (10-11 February 2022), Ministry of Europe and Foreign Affairs (Paris) 10 February 2022. Access Date: 19 March 2022. <https://www.diplomatie.gouv.fr/en/french-foreign-policy/climate-and-environment/news/article/one-ocean-summit-jean-yves-le-drian-takes-part-in-the-one-ocean-summit-10-11>

⁴⁴⁹² One Ocean Summit: for a more sustainable ocean, Ministry of Europe and Foreign Affairs (Paris) 9 February 2022. Access Date: 3 April 2022. <https://www.diplomatie.gouv.fr/en/french-foreign-policy/climate-and-environment/news/article/one-ocean-summit-for-a-more-sustainable-ocean-9-11-feb-2022>

⁴⁴⁹³ Food security: implementation of the FARM initiative (05 Apr. 2022), Ministry for Europe and Foreign Affairs (Paris) 5 April 2022. Access Date: 9 March 2022. <https://www.diplomatie.gouv.fr/en/french-foreign-policy/development-assistance/food-security-nutrition-and-sustainable-agriculture/news/article/food-security-implementation-of-the-farm-initiative-05-apr-2022>

Canadian scientists and engineers to explore cutting-edge research that can address environmental, economic and social issues.

France has partially complied with its commitment to collaborate on science-based responses to global challenges and drive innovation by calling on every nation to increase their research transparency and integrity. France has demonstrated strong leadership in issues of climate change, the COVID-19 pandemic, biodiversity preservation and green energy initiatives in close collaboration with G7 and foreign countries. However, France has not taken strong action to call on nations to increase research transparency.

Thus, France receives a score of 0.

Analyst: Xiaolong (James) Wang

Germany: 0

Germany has partially complied with its commitment to collaborate on science-based responses to global challenges and drive innovation by calling on every nation to increase their research transparency and integrity.

On 18 June 2021, the Federal Ministry for Economic Cooperation and Development announced that they will support the Institut Pasteur in Senegal by providing EUR20 million to finance the production of COVID-19 vaccines.⁴⁴⁹⁵ The funding will help the Institut utilize science-based approaches to tackle the COVID-19 pandemic by increasing domestic vaccine production potential.

On 25 June 2021, the Federal Ministry of Education and Research of Germany (BMBF) and the Natural Sciences and Engineering Research Council of Canada jointly selected ten projects to deepen both countries' collaborative hydrogen research.⁴⁴⁹⁶ The projects aim to lead to findings that advance hydrogen as a major renewable source worldwide, putting Canada and Germany at the forefront of the new green hydrogen economy and fight against climate change. These projects also set a precedent for future joint activities, as agreed at the Cornwall G7 summit between Prime Minister Trudeau and Chancellor Merkel.

On 30 June 2021, Germany and the United Kingdom issued a joint declaration of intent on German-British foreign policy cooperation.⁴⁴⁹⁷ Both states agreed on a shared global responsibility to deepen their cooperation on artificial intelligence, cybersecurity, climate change and COVID-19. Germany and the United Kingdom committed to promoting a multilateral approach to address these global issues, primarily by using international organizations and agreements as the "leading and coordinating authority."

On 16 July 2021, the Government of Germany contributed to the drafting of a proposal adopted by the European Commission for a "Council Recommendation on 'A Pact for Research and Innovation in Europe.'"⁴⁴⁹⁸ The Pact will update policy coordination and monitoring for EU Member States regarding the best practices for exchanging research.

⁴⁴⁹⁴ The CNRS expands its presence in Canada, French National Centre for Scientific Research (Paris) 25 April 2022. Access Date: 9 May 2022. <https://www.cnrs.fr/en/cnrs-expands-its-presence-canada>

⁴⁴⁹⁵ Minister Müller and Institut Pasteur give the go-ahead for setting up corona vaccine production in Africa, Federal Ministry for Economic Cooperation and Development (Berlin) 18 June 2021. Translation provided by Google Translate. Access Date: 8 March 2022. <https://www.bmz.de/de/aktuelles/archiv-aktuelle-meldungen/aufbau-einer-corona-impfstoffproduktion-in-afrika-84088>

⁴⁴⁹⁶ Strong impetus for the German-Canadian hydrogen cooperation, Federal Ministry of Education and Research (Berlin) 25 June 2021. Translation provided by Google Translate. Access Date: 15 December 2021.

<https://www.bmbf.de/bmbf/shareddocs/pressemitteilungen/de/starke-impulse-fuer-die-deutsch-adische-wasserstoffkooperation.html>

⁴⁴⁹⁷ Joint declaration of intent by Foreign Minister Heiko Maas and British Foreign Minister Dominic Raab on German-British foreign policy cooperation, Ministry of Foreign Affairs (Berlin) 30 June 2021. Translation provided by Google Translate Access Date: 20 December 2021. <https://www.auswaertiges-amt.de/de/newsroom/gbr-joint-declaration/2468906>

⁴⁴⁹⁸ Commission adopts proposals for a Pact for Research and Innovation in Europe, European Commission (Brussels) 16 July 2021. Access Date: 8 March 2022. https://ec.europa.eu/info/news/commission-adopts-proposal-pact-research-and-innovation-europe-2021-jul-16_en

On 21 July 2021, Germany and the United States launched the German-American Climate and Energy Partnership.⁴⁴⁹⁹ The partnership seeks to encourage close collaboration on research and action plans to reduce domestic emissions and aid emerging countries in their energy transition efforts. Particularly, the German-American partnership aims to support Central and Eastern European countries in tackling climate change. Both states pledged investments of at least US1 billion in Ukraine to promote renewables, facilitate the development of hydrogen-powered energy, accelerate coal phase-out and support carbon neutrality.

On 25 August 2021, Finance Minister Olaf Scholz announced the federal government's intention to create an international climate club.⁴⁵⁰⁰ The club aims to give the implementation of the Paris Agreement an additional boost internationally by ensuring states commit to ambitious climate goals and take appropriate measures. The club would define minimum standards and promote coordinated climate protection between states. This initiative also serves as an invitation to scientists across borders to get involved in the club's design.

On 23 September 2021, German Foreign Minister Heiko Maas called on all members of the Alliance for Multilateralism to promote a strong, inclusive and effective multilateral system to tackle global health and climate challenges.⁴⁵⁰¹ Minister Maas stressed the advantages of cooperation in the fight against the pandemic and urged other states to participate in international mechanisms like the World Health Organization's COVAX and the Access to COVID-19 Tools Accelerator.

On 27 September 2021, the German Foreign Ministry hosted the Third Berlin Conference on Climate and Security.⁴⁵⁰² With the participation of eight Foreign Ministers and State Secretaries, the 2021 Berlin Climate and Security Conference served as a platform to strengthen collaboration, research, and innovation between states to address climate change and its related drivers of conflict and instability.⁴⁵⁰³ Foreign Ministers, State Secretaries and partner organizations shared best practices to inform multilateral, regional, and local approaches to forward-looking and preventive policymaking.

On 15 September 2021, Germany, France, and the United Kingdom announced they were extending their partnership in neutron research.⁴⁵⁰⁴ The three states signed an agreement that extends their longstanding cooperation as the sponsors of the Laue-Langevin Institute from 2024 to 2033. In this new period, the three signatory G7 members expect a total of EUR1 billion in contributions. The extended partnership will continue to grant experts access to world-class neutron radiation research, which has wide-ranging applications in understanding and treating COVID-19, Alzheimer's, and improving batteries for electric cars.

⁴⁴⁹⁹ Joint statement of USA and Germany in support of Ukraine, European energy security and our climate goals, Ministry of Foreign Affairs (Berlin) 21 July 2021. Translation provided by Google Translate. Access Date: 15 December 2021. <https://www.auswaertiges-amt.de/de/newsroom/gemeinsame-erklaerung-usa-und-deutschland/2472074>

⁴⁵⁰⁰ Federal government wants to found international climate club, Federal Ministry of Finance (Berlin) 25 August 2021. Translation provided by Google Translate. Access Date: 16 December 2021. <https://www.bundesfinanzministerium.de/Content/DE/Pressemitteilungen/Finanzpolitik/2021/08/20210825-bundesregierung-will-internationalen-klimaclub-gruenden.html>

⁴⁵⁰¹ #Multilateralism Matters: Ministerial meeting of the Alliance for Multilateralism, Ministry of Foreign Affairs (Berlin) 23 September 2021. Translation provided by Google Translate. Access Date: 22 December 2021. <https://www.auswaertiges-amt.de/de/aussenpolitik/-/2484204>

⁴⁵⁰² Welcome address by Foreign Minister Heiko Maas at the opening of the Third Berlin Conference on Climate and Security, Ministry of Foreign Affairs (Berlin) 27 September 2021. Translation provided by Google Translate. Access Date: 15 December 2021. <https://www.auswaertiges-amt.de/de/newsroom/-/2483630>

⁴⁵⁰³ Summary: Berlin Climate and Security Conference 2021, Berlin Climate and Security Conference (Berlin) 8 October 2021. Access Date: 16 December 2021. <https://berlin-climate-security-conference.de/>

⁴⁵⁰⁴ Germany, France, and the United Kingdom extend their partnership in neutron research, Federal Ministry of Education and Research (Berlin) 15 September 2021. Translation provided by Google Translate. Access Date: 21 December 2021. <https://www.bmbf.de/bmbf/shareddocs/pressemitteilungen/de/2021/09/150921-Neutronenforschung.html>

On 2 November 2021, the German Federal Foreign Office hosted a digital conference on climate, peace and security.⁴⁵⁰⁵ The conference was a high-level side event at COP26 that built multilateral momentum to establish principles for climate action to advance peace and stability.⁴⁵⁰⁶ Speakers highlighted the importance of “cross-border, cross-sector, and multilateral projects” and stressed the need to accelerate “agricultural innovation and forecast-based financing.” State Secretary of the German Federal Foreign Office Miguel Berger announced a substantive multilateral initiative to bring together experts and drive forward research, innovation and joint action on climate, peace and stability.⁴⁵⁰⁷

On 8 November 2021, the Federal Ministry for Economic Cooperation and Development announced more robust support for climate change adaptation in developing countries following the COP26 in Glasgow.⁴⁵⁰⁸ Germany committed a total of EUR150 million, of which EUR100 million will be devoted to the Global Environment Facility fund for least developed countries and EUR50 million to the Adaptation Fund. Federal Development Minister Gerd Müller stated that “Germany is leading the way” and other countries “must now follow suit,” including G7 members.

On 18 November 2021, the BMBF and the Ministry of Research of France launched a series of Franco-German joint projects to strengthen both states’ knowledge, technology transfer and cutting-edge research in the field of artificial intelligence (AI).⁴⁵⁰⁹ Germany and France will provide funding worth around EUR12 million to 20 projects that pool research strengths and create the foundation for developing cutting-edge technologies in the two countries. Minister Karliczek said this was an important contribution to the “development of trustworthy AI made in Europe” and the strengthening of “technological sovereignty.”

On 23 November 2021, Minister Maas highlighted Germany’s pursuit of multilateral solutions as a cornerstone of the country’s foreign policy.⁴⁵¹⁰ Minister Maas stressed Germany’s significant contribution to the vaccination program COVAX, now totalling EUR2.2 billion and 100 million vaccine doses, making Germany the second-largest supporter worldwide of this initiative.

On 1 December 2021, the BMBF announced the beginning of research at the International Green Hydrogen Future Laboratory.⁴⁵¹¹ Minister Karliczek stressed the importance of green hydrogen as an alternative renewable energy source to tackle climate change. The Laboratory will bring together researchers from Europe, North America, South America and Australia for up to three years to develop technologies for the clean production of green hydrogen.

⁴⁵⁰⁵ World Climate Conference: The security policy effects of climate change in focus, Ministry of Foreign Affairs (Berlin) 31 October 2021. Translation provided by Google Translate. Access Date: 15 December 2021. <https://www.auswaertiges-amt.de/de/aussenpolitik/themen/klima/cop26/2493334>

⁴⁵⁰⁶ Climate, Peace and Stability: Weathering Risk Through COP and Beyond, Weathering Risk (Berlin) 2 November 2021. Access Date: 16 December 2021. <https://weatheringrisk.org/en/event/climate-peace-and-stability-weathering-risk-through-cop-and-beyond>

⁴⁵⁰⁷ World Climate Conference: The security policy effects of climate change in focus, Ministry of Foreign Affairs (Berlin) 31 October 2021. Translation provided by Google Translate. Access Date: 15 December 2021. <https://www.auswaertiges-amt.de/de/aussenpolitik/themen/klima/cop26/2493334>

⁴⁵⁰⁸ Germany is supporting the Adaptation Fund with €50 million, Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (Berlin) 8 November 2021. Access Date: 30 January 2022. https://www.international-climate-initiative.com/en/news/article/germany_is_supporting_the_adaptation_fund_with_eur50_million

⁴⁵⁰⁹ Karliczek: Together with France, we are promoting trustworthy “AI made in Europe”, Federal Ministry of Education and Research (Berlin) 18 November 2021. Translation provided by Google Translate. Access Date: 22 December 2021. <https://www.bmbf.de/bmbf/shareddocs/pressemitteilungen/de/2021/11/181121-Deu-Frz-KI-Projekte.html>

⁴⁵¹⁰ Opening speech by Foreign Minister Heiko Maas at the Berlin Foreign Policy Forum of the Körber Foundation, Ministry of Foreign Affairs (Berlin) 23 November 2021. Translation provided by Google Translate. Access Date: 16 December 2021. <https://www.auswaertiges-amt.de/de/newsroom/maas-koerber/2497280>

⁴⁵¹¹ Karliczek: International future laboratory researches new climate-neutral technologies for the production of green hydrogen, Federal Ministry of Education and Research (Berlin) 1 December 2021. Translation provided by Google Translate. Access Date: 22 December 2021. <https://www.bmbf.de/bmbf/shareddocs/pressemitteilungen/de/2021/12/011221-IZGW.html>

On 20 December 2021, Federal Chancellor Scholz announced a joint plan of action between Germany and Italy to deepen bilateral relations with respect to COVID-19, climate change, digitalization, and security.⁴⁵¹² The plan for bilateral cooperation emphasizes the imperative of collaboration between both states to achieve high vaccination rates, investment in modern technologies, successful digitalization and economic strength and competitiveness.

On 10 February 2022, Federal Minister for Economic Cooperation and Development Svenja Schulze announced that up to EUR2.5 billion would be made available for green infrastructure research and development projects in Indonesia between 2022 and 2025.⁴⁵¹³ This new funding will support green infrastructure to boost sustainable mobility in Indonesia and improve its management of waste, water supply and wastewater to combat greenhouse gas emissions.

On 18 February 2022, Minister Schulze announced further support and progress on the transfer of technology for mRNA vaccine production in Africa.⁴⁵¹⁴ The Federal Ministry for Economic Cooperation and Development made EUR3 million available to the transfer hub administered by the World Health Organization in South Africa, which improves access to mRNA technology worldwide.

On 1 March 2022, Ministers launched the Rwandan-German Climate and Development Partnership.⁴⁵¹⁵ Minister Schulze stressed that the partnership would enhance cooperation with the Rwandan scientific community to scale up climate change mitigation and adaptation initiatives in Rwanda. The German Development Bank KfW donated EUR56 million to start the partnership.

On 7 March 2022, Federal Research Minister Bettina Stark-Watzinger launched the funding program for the German-Australian Hydrogen Innovation and Technology Incubator (HyGATE).⁴⁵¹⁶ HyGATE will be a joint tool to fund the research and development of green hydrogen technologies along the entire value chain of both countries. The German Federal Ministry of Education and Research will provide up to EUR50 million for the program, as per the German-Australian Hydrogen Accord signed by both parties at the G7 Summit in Cornwall.

On 5 May 2022, the German Aerospace Center adopted the Inter Agency Arrangement for Strategic Partnership with the Japan Aerospace Exploration Agency.⁴⁵¹⁷ The partnership aims to strengthen aerospace research in both countries and promote cooperation between their aerospace industries. This cooperation will promote emission-free air transport and ecologically responsibility.

On 2 May 2022, Minister Schulze signed declarations of intent on the Indo-German Renewable Energy Partnership and on Triangular Cooperation alongside Indian Foreign Minister Subrahmanyam Jaishankar.⁴⁵¹⁸

⁴⁵¹² "We are firmly committed to fighting the coronavirus pandemic together," The Federal Government (Berlin) 20 December 2021. Access Date: 26 December 2021. <https://www.bundesregierung.de/breg-en/search/bk-scholz-italy-1992640>

⁴⁵¹³ Minister Schulze pledges support for Indonesian-German initiative to improve Green Infrastructure, Federal Ministry for Economic Cooperation and Development (Berlin) 10 February 2022. Access Date: 20 March 2022. <https://www.bmz.de/en/news/press-releases/indonesian-german-initiative-to-improve-green-infrastructure-104378>

⁴⁵¹⁴ Cooperation between Europe and Africa brings more progress, Federal Ministry for Economic Cooperation and Development (Berlin) 18 February 2022. Access Date: 20 March 2022. <https://www.bmz.de/en/news/press-releases/worldwide-fairness-in-vaccine-production-104628>

⁴⁵¹⁵ Germany and Rwanda sign Climate and Development Partnership, Federal Ministry for Economic Cooperation and Development (Berlin) 1 March 2022. Access Date: 20 March 2022. <https://www.bmz.de/en/news/press-releases/germany-and-rwanda-sign-climate-and-development-partnership-105014>

⁴⁵¹⁶ German Research Minister Stark-Watzinger: German-Australian supply chain for Green Hydrogen an important step towards climate neutrality and greater independence, Federal Ministry for Economic Cooperation and Development (Berlin) 7 March 2022. Access Date: 20 March 2022. https://www.bmbf.de/bmbf/en/home/_documents/german-australian-supply-chain-for-green-hydrogen.html

⁴⁵¹⁷ German-Japanese cooperation in aerospace, German Aerospace Center (Cologne) 13 April 2022. Access Date: 9 May 2022. https://www.dlr.de/content/en/articles/news/2022/02/20220413_german-japanese-cooperation-in-aerospace.html

⁴⁵¹⁸ Cooperation with India: Development Minister Schulze signs three agreements, Federal Ministry of Economic Cooperation and Development (Berlin) 2 May 2022. Access Date: 8 May 2022. <https://www.bmz.de/en/news/press-releases/indo-german-cabinet-consultations-108470>

The Energy Partnership will focus on solar technology innovation, while Triangular Cooperation will promote Germany and India's climate and sustainability cooperation with countries in Asia, Africa or Latin America. Both declarations aim to, among other goals, reduce greenhouse gas emissions and adapt to climate change.

On 2 May 2022, the Government of Germany signed an agreement with the Government of India to cooperate on increasing sustainable green hydrogen production.⁴⁵¹⁹ The agreement will promote collaboration between German and Indian research institutions and will allow green hydrogen to become commercially viable, which will reduce both countries' dependence on fossil fuels.

On 25 May 2022, Federal Environment Minister Steffi Lemke and Environment Agency (UBA) President Dirk Messner signed a joint declaration with US Environmental Protection Agency (EPA) Administrator Michael Regan.⁴⁵²⁰ The declaration aims to promote cooperation between the UBA and EPA on global environmental issues including climate protection, air pollution and marine protection. The two institutions plan to share knowledge and coordinate on solutions to these global issues.

Germany has partially complied with its commitment to collaborate on science-based responses to global challenges and drive innovation by calling on every nation to increase their research transparency and integrity. While Germany has taken actions to collaborate on science-based responses to global challenges – such as COVID-19, climate change, and security – with both G7 and non-G7 members, it has fallen short in driving innovation by calling on other states to increase their research transparency and integrity.

Thus, Germany receives a score of 0.

Analyst: Daniel Corredor Llorente

Italy: 0

Italy has partially complied with its commitment to collaborate on science-based responses to global challenges and drive innovation by calling on every nation to increase their research transparency and integrity.

On 31 October 2021, Italy and the United Kingdom co-hosted the United Nations Climate Change Conference (COP26) as part of a Presidency Partnership.⁴⁵²¹ The conference refined the UN's 2030 agenda and the Paris Agreement for all participating countries.⁴⁵²² Participating countries also committed to accelerating the transition to zero emission vehicles and called on all developed countries to improve collaboration to facilitate a global transition to these vehicles.

On 25 November 2021, the Italian Ambassador in Cairo Giampaolo Cantini attended the 6th Ministerial Meeting for the East Mediterranean Gas Forum (EMGF).⁴⁵²³ The ministers endorsed the EMGF 2022 budget and agreed to work together towards co-developing joint initiatives for climate action. The meeting was also attended by the Cypriot, Egyptian, Greek, Israeli, Jordanian and Palestinian Ministers of Energy, as well as French Director General for Global Affairs, Ministry of Europe and Foreign Affairs Jean-Baptiste

⁴⁵¹⁹ Joint Declaration of Intent between The Republic of India And The Federal Republic of Germany on the Partnership for Green and Sustainable Development, Press and Information Office of the Federal Government of Germany (Berlin) 2 May 2022. Access Date: 8 May 2022. <https://www.bundesregierung.de/resource/blob/997532/2029828/6a4f226c3e696417d110e0651ea26d77/2022-05-02-joint-declaration-ger-ind-data.pdf>

⁴⁵²⁰ Germany and the United States of America will intensify their environmental policy cooperation, Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (Berlin) 25 May 2022. Access Date: 9 June 2022. <https://www.bmuv.de/en/pressrelease/germany-and-the-united-states-of-america-will-intensify-their-environmental-policy-cooperation>

⁴⁵²¹ The UK-Italy Partnership, UN Climate Change Conference UK 2021 (London) n.d. Access Date: 15 January 2022.

<https://ukcop26.org/pre-cop/>

⁴⁵²² COP26 Declaration on Accelerating The Transition To 100% Zero Emission Cars And Vans, UN Climate Change Conference UK 2021 (London) 11 October 2021. Access Date: 28 November 2021. <https://ukcop26.org/cop26-declaration-on-accelerating-the-transition-to-100-zero-emission-cars-and-vans/>

⁴⁵²³ 6th EMGF Ministerial Meeting, East Mediterranean Gas Forum (Cairo) 25 November 2021. Access Date: 13 December 2021. https://emgf.org/gva_event/6th-emgf-ministerial-meeting-november-25th-2021/

Lemoyne as heads of delegations of the EMGF member countries. The European Union and United States attended as observers.⁴⁵²⁴

On 26 November 2021, Italy and France signed space cooperation and energy agreements as part of the Enhancement Cooperation Treaty.⁴⁵²⁵ The treaty aims to strengthen cooperation in the energy, technology and space fields.⁴⁵²⁶

On 3 December 2021, Prime Minister Mario Draghi attended the Rome Med-Mediterranean Dialogues.⁴⁵²⁷ Draghi urged Mediterranean countries to form a “joint energy policy” and promote the development of renewables including wind and solar power by using their extensive gas reserves. He also encouraged Mediterranean countries to “go beyond bilateral relations” and increase collaboration to address climate change.

On 20 December 2021, Prime Minister Mario Draghi met with German Chancellor Olaf Scholz to discuss the COVID-19 pandemic, economic recovery and climate change.⁴⁵²⁸ Both parties agreed to boost cooperation in science, technology and research in fields such as “hydrogen, microelectronics and batteries for electric cars” to fight against climate change and promote digital transition.

Italy has partially complied with its commitment to collaborate on science-based responses to global challenges and drive innovation by calling on every nation to increase their research transparency and integrity. Italy collaborated with G7 members and Mediterranean countries on research relating to the COVID-19 pandemic and climate change. As a co-host of COP26, Italy also expressed its willingness to cooperate with foreign countries on sustainability issues. However, Italy did not call on nations to increase their research transparency and integrity.

Thus, Italy receives a score of 0.

Analyst: Xiaolong (James) Wang

Japan: 0

Japan has partially complied with its commitment to collaborate on science-based responses to global challenges and drive innovation by calling on every nation to increase their research transparency and integrity.

On 22 June 2021, Japan’s Minister of Economy, Trade, and Industry Hiroshi Kajiyama announced the launch of the Asia carbon capture, utilization and storage (CCUS) Network.⁴⁵²⁹ This platform will allow for the sharing of knowledge across industry, academia and government for the use of CCUS methods across Asia.

On 8 July 2021, the Government of Japan and the International Atomic Energy Agency signed a Terms of Reference (TOR) regarding the management of Advanced Liquid Processing System treated water from

⁴⁵²⁴ Speech of Eng. Tarek El Molla, Minister of Petroleum and Mineral Resources, at the Sixth Ministerial Meeting of the East Mediterranean Gas Forum (EMGF), Ministry of Petroleum & Mineral Resources (Cairo) 25 November 2021. Access Date: 13 December 2021. https://www.petroleum.gov.eg/en/media-center/news/news-pages/Pages/mop_25112021_01.aspx

⁴⁵²⁵ Joint press statements by PM Draghi and President Macron, Italian Government (Rome) 26 November 2021. Access Date: 29 November 2021. <https://www.governo.it/en/articolo/joint-press-statements-pm-draghi-and-president-macron/18669>

⁴⁵²⁶ Italy and France sign agreement on space launchers, Reuters (London) 27 November 2021. Access Date: 29 November 2021. <https://www.reuters.com/lifestyle/science/italy-france-sign-agreement-space-launchers-2021-11-26/>

⁴⁵²⁷ Prime Minister Draghi’s address at the ‘Rome Med-Mediterranean Dialogues’ opening ceremony, Presidency of the Council of Ministers (Rome) 3 December 2021. Access Date: 24 December 2021. <https://www.governo.it/en/articolo/prime-minister-draghi-s-address-rome-med-mediterranean-dialogues-opening-ceremony/18732>

⁴⁵²⁸ PM Draghi meets with Chancellor Scholz, introduction by Prime Minister Draghi, Presidency of the Council of Ministers (Rome) 20 December 2021. Access Date: 24 December 2021. <https://www.governo.it/en/articolo/pm-draghi-meets-chancellor-scholz-introduction-prime-minister-draghi/18863>

⁴⁵²⁹ “Asia CCUS Network” has launched, Ministry of Economy, Trade and Industry (Tokyo) 22 June 2021. Access Date: 21 December 2021. https://www.meti.go.jp/english/press/2021/0622_001.html

Tokyo Electric Power Company's Fukushima Daiichi Nuclear Power Station.⁴⁵³⁰ The TOR is intended to increase the transparency of water treatment for the international community based on environmental monitoring and review missions.

On 11 August 2021, Director General of the Trade Policy Bureau Matsuo Takehiko and Director General of the Trade and Economic Cooperation Bureau Iida Yoichi signed a memorandum of cooperation with Thailand's Ministry of Digital Economy and Society's Digital Economy Promotion Agency and the Ministry of Industry's Department of Industrial Promotion.⁴⁵³¹ The memorandum confirms cooperation for promoting Lean IoT Plant Management and Execution, a human resource development project that improves productivity through technology and increases Thailand's manufacturing capacity through sustainable methods.

On 27 October 2021, Japan's Ministry of Environment and the Association of Southeast Asian Nations (ASEAN) established a new ASEAN-Japan climate action agenda.⁴⁵³² The agenda aims to make climate change a core aspect of ASEAN climate action and increase cooperation. The agenda is based on the use of transparency, mitigation, and adaptation, for decarbonization.

On 10 November 2021, the Japan Ministry of the Environment and the United States Office of Special Presidential Envoy for Climate announced an initiative for Global Subnational Zero Carbon promotion.⁴⁵³³ The project aims for both countries to cooperate to promote climate action globally for a decarbonized society.

On 10 January 2022, Japan's Minister of Economy, Trade and Industry Minister Hagiuda announced the ASIA-Japan Investing for the Future Initiative.⁴⁵³⁴ The initiative aims to enhance economic cooperation within Asia through future investment for the post-pandemic era. It also aims to increase the importance of sustainability in rural and urban areas and promote innovation to address climate change and urbanization.

On 15 February 2022, Japan signed a Letter of Arrangement with the UK to conduct joint research on a fighter jet sensor meant to better detect lethal threats from the air, land and sea.⁴⁵³⁵ The new sensor technology will allow the Armed Forces of both countries to improve their air combat abilities and continue military innovation.

On 25 February 2022, the Government of Japan pledged USD300 million to the Coalition for Epidemic Preparedness Innovation (CEPI), to be used for the risk reduction of future pandemics and epidemics.⁴⁵³⁶

⁴⁵³⁰ The Government of Japan signed on IAEA's support for handling of ALPS treated water at TEPCO's Fukushima Daiichi Nuclear Power Station, Ministry of Economy, Trade and Industry (Tokyo) 9 July 2021. Access Date: 21 December 2021. https://www.meti.go.jp/english/press/2021/0709_001.html

⁴⁵³¹ METI and Thailand's Ministry of Industry and Ministry of Digital Economy and Society Sign a Memorandum of Cooperation toward Promoting LIPE, Which Will Help Achieve Thailand 4.0, Ministry of Economy, Trade and Industry (Tokyo) 11 August 2021. Access Date: 21 December 2021. https://www.meti.go.jp/english/press/2021/0811_001.html

⁴⁵³² Outcome of the Japan-ASEAN Summit Meeting on Environmental Cooperation, Ministry of the Environment (Tokyo) 27 October 2021. Access Date: 21 December 2021. <https://www.env.go.jp/en/headline/2547.html>

⁴⁵³³ Announcement of launch of "Global Subnational Zero Carbon Promotion Initiative" by Japan and United States of America, Ministry of the Environment (Tokyo) 19 November 2021. Access Date: 21 December 2021. <https://www.env.go.jp/en/headline/2558.html>

⁴⁵³⁴ ASIA-Japan Investing for the Future Initiative Announced, Ministry of Economy, Trade and Industry (Tokyo) 10 January 2022. Access Date: 16 January 2022. https://www.meti.go.jp/english/press/2022/0110_001.html

⁴⁵³⁵ UK and Japan to work together on world-leading fighter jet sensor, Ministry of Defence (London) 15 February 2022. Access Date: 3 April 2022. <https://www.gov.uk/government/news/uk-and-japan-to-work-together-on-world-leading-fighter-jet-sensor>

⁴⁵³⁶ About new contributions from Japan to CEPI, Ministry of Health, Labour and Welfare (Tokyo) 25 February 2022. Translation Provided by Google Translate. Access Date: 3 April 2022. https://www.mhlw.go.jp/stf/newpage_24098.html

The donation will also allow CEPI to develop “variant-proof” COVID-19 vaccines and develop vaccines for pathogens with pandemic potential.⁴⁵³⁷

On 5 May 2022, the Japan Aerospace Exploration Agency adopted the Inter Agency Arrangement for Strategic Partnership with the German Aerospace Center.⁴⁵³⁸ The partnership aims to strengthen aerospace research in both countries and promote cooperation between their aerospace industries. This cooperation will promote emission-free air transport and ecological responsibility.

Japan has partially complied with its commitment to collaborate on science-based responses to global challenges and drive innovation by calling on every nation to increase their research transparency and integrity. Japan has collaborated with other countries on science-based responses to global challenges, such as climate change, by entering into bilateral agreements aimed at meeting climate targets. However, Japan has failed to drive innovation through increased transparency and integrity.

Thus, Japan receives a score of 0.

Analyst: Fiorella Maria Gaviglio-Fernandez

United Kingdom: +1

The United Kingdom has fully complied with its commitment to collaborate on science-based responses to global challenges and drive innovation by calling on every nation to increase their research transparency and integrity.

On 18 June 2021, the UK’s Centre for the Environment, Fisheries and Aquaculture Science (Cefas) committed to providing marine pollution expertise to Sri Lanka following the X-Press Pearl container vessel fire.⁴⁵³⁹ Cefas will collaborate with Sri Lankan emergency response teams to analyze the consequences for marine and coastal habitats and help prepare them to avoid future incidents. This collaboration will allow for the protection of the marine environment and mitigation of the fire’s short-term impacts.

On 30 June 2021, the UK and Germany issued a joint declaration of intent on German-British foreign policy cooperation.⁴⁵⁴⁰ Both states agreed on a shared global responsibility to deepen their cooperation on artificial intelligence, cybersecurity, climate change and COVID-19. The UK and Germany committed to promoting a multilateral approach to address these global issues, primarily by using international organizations and agreements as the “leading and coordinating authority.”

On 6 July 2021, The Medicines and Healthcare products Regulatory Agency published improved Development Safety Update Reports alongside Health Canada.⁴⁵⁴¹ The report aims to improve the safety of patients in clinical trials globally to increase trial transparency and thus improve the quality of international research.

⁴⁵³⁷ Japan pledges US\$300 million to CEPI’s pandemic preparedness plan, Coalition for Epidemic Preparedness Innovations (Oslo) 25 February 2022. Access Date: 3 April 2022. https://cepi.net/news_cepi/japan-pledges-us300-million-to-cepis-pandemic-preparedness-plan/

⁴⁵³⁸ German-Japanese cooperation in aerospace, German Aerospace Center (Cologne) 13 April 2022. Access Date: 9 May 2022. https://www.dlr.de/content/en/articles/news/2022/02/20220413_german-japanese-cooperation-in-aerospace.html

⁴⁵³⁹ UK Government marine experts to support Sri Lanka with X-press Pearl pollution response, Centre for Environment Fisheries and Aquaculture Science (Lowestoft) 18 June 2021. Access Date: 21 December 2021. <https://www.gov.uk/government/news/uk-government-marine-experts-to-support-sri-lanka-with-x-press-pearl-pollution-response>

⁴⁵⁴⁰ Joint declaration of intent by Foreign Minister Heiko Maas and British Foreign Minister Dominic Raab on German-British foreign policy cooperation, Ministry of Foreign Affairs (Berlin) 30 June 2021. Translation provided by Google Translate Access Date: 20 December 2021. <https://www.auswaertiges-amt.de/de/newsroom/gbr-joint-declaration/2468906>

⁴⁵⁴¹ MHRA releases guidance in collaboration with Health Canada to improve patient safety in clinical trials through improving the quality of Development Safety Update Reports, Medicines and Healthcare products Regulatory Agency (London) 6 July 2021. Access Date: 23 December 2021. <https://www.gov.uk/government/news/mhra-releases-guidance-in-collaboration-with-health-canada-to-improve-patient-safety-in-clinical-trials-through-improving-the-quality-of-development-s>

On 15 September 2021, Prime Minister Boris Johnson announced the launch of AUKUS, a security partnership with Australia and the United States.⁴⁵⁴² The partnership aims to enhance technology sharing, promote integration of defense-related science, technology and supply chains.

On 15 September 2021, the UK, France, and Germany announced they were extending their partnership in neutron research.⁴⁵⁴³ The three states signed an agreement that extends their longstanding cooperation as the sponsors of the Laue-Langevin Institute from 2024 to 2033. In this new period, the three signatory G7 members expect a total of EUR1 billion in contributions. The extended partnership will continue to grant experts access to world-class neutron radiation research, which has wide-ranging applications in understanding and treating COVID-19, Alzheimer's, and improving batteries for electric cars.

On 16 September 2021, Prime Minister Boris Johnson established a Partnership for the Future with the Prince of Abu Dhabi Sheikh Mohammed Bin Zayed Al Nahyan.⁴⁵⁴⁴ The partnership will promote sustainable prosperity through agreements among oil and energy companies for decarbonization and the exchange of technologies and knowledge.

On 29 October 2021, the UK Intellectual Property Office (IPO) launched a consultation on how the copyright and patent system should deal with Artificial Intelligence (AI).⁴⁵⁴⁵ The consultation seeks to create a framework that encourages innovation in AI, while preserving intellectual property rights.

On 31 October 2021, the UK and Italy co-hosted the United Nations Climate Change Conference (COP26) as part of a Presidency Partnership.⁴⁵⁴⁶ The conference refined the UN's 2030 agenda and the Paris Agreement for all participating countries.⁴⁵⁴⁷ Participating countries also committed to accelerating the transition to zero emission vehicles and called on all developed countries to improve collaboration to facilitate a global transition to these vehicles.

On 2 November 2021, the UK Space Agency provided funding for MicroCarb, a joint British and French satellite mission intended to monitor atmospheric carbon dioxide.⁴⁵⁴⁸ The UK will commit a further GBP3.9 million to measure greenhouse gas emissions caused by human activity.

On 2 November 2021, UK Prime Minister Boris Johnson and Indian Prime Minister Narendra Modi launched the Green Grids Initiative.⁴⁵⁴⁹ The initiative aims to accelerate the transition towards renewable

⁴⁵⁴² UK, US and Australia launch new security partnership, Prime Minister's Office (London) 15 September 2021. Access Date: 21 December 2021. <https://www.gov.uk/government/news/uk-us-and-australia-launch-new-security-partnership>

⁴⁵⁴³ Germany, France, and the United Kingdom extend their partnership in neutron research, Federal Ministry of Education and Research (Berlin) 15 September 2021. Translation provided by Google Translate. Access Date: 21 December 2021. <https://www.bmbf.de/bmbf/shareddocs/pressemitteilungen/de/2021/09/150921-Neutronenforschung.html>

⁴⁵⁴⁴ United Kingdom – United Arab Emirates Joint Communiqué: a Partnership for the Future, Prime Minister's Office (London) 16 September 2021. Access Date: 21 December 2021. <https://www.gov.uk/government/news/united-kingdom-united-arab-emirates-joint-communicue-a-partnership-for-the-future>

⁴⁵⁴⁵ Artificial Intelligence and IP: Consultation on copyright and patents legislation, Intellectual Property Office (Newport) 29 October 2021. Access Date: 23 December 2021. <https://www.gov.uk/government/news/artificial-intelligenceand-ip-consultation-on-copyright-and-patents-legislation>

⁴⁵⁴⁶ The UK-Italy Partnership, UN Climate Change Conference UK 2021 (London) n.d. Access Date: 15 January 2022. <https://ukcop26.org/pre-cop/>

⁴⁵⁴⁷ COP26 Declaration on Accelerating The Transition To 100% Zero Emission Cars And Vans, UN Climate Change Conference UK 2021 (London) 11 October 2021. Access Date: 28 November 2021. <https://ukcop26.org/cop26-declaration-on-accelerating-the-transition-to-100-zero-emission-cars-and-vans/>

⁴⁵⁴⁸ UK and France reach new agreement on climate change mission, UK Space Agency (Swindon) 2 November 2021. Access Date: 23 December 2021. <https://www.ukspace.org/uk-and-france-reach-new-agreement-on-climate-change-mission/>

⁴⁵⁴⁹ UK and India launch new grids initiative to deliver clean power to the world, Prime Minister's Office (London) 2 November 2021. Access Date: 21 December 2021. <https://www.gov.uk/government/news/uk-and-india-launch-new-grids-initiative-to-deliver-clean-power-to-the-world>

energy sources and increase the interconnectivity of electricity grids worldwide. The initiative will bring together governments and businesses who will collaborate to provide global access to sustainable energy.

On 2 November 2021, UK Foreign Secretary Liz Truss announced GBP110 million of financial support to the ASEAN Catalytic Green Finance Facility.⁴⁵⁵⁰ The funds will provide Southeast Asian countries with the necessary infrastructure to develop sustainable infrastructure projects such as renewable energy and clean transportation.

On 4 November 2021, the UK signed a joint statement of intent with the United States to increase collaboration on quantum science and technologies.⁴⁵⁵¹ The statement outlined priorities for joint research and noted the ability of quantum technologies to revolutionize medical diagnosis, drug discovery and cyber security.

On 4 November 2021, UK Minister for Africa Vicky Ford and Zambian Minister for Foreign Affairs Stanley K. Kakubo signed the Green Growth Compact.⁴⁵⁵² The compact will drive investment and trade between the UK and Zambia and will create the opportunity for collaboration among regarding research and innovation for renewable energy, urban planning and development.

On 8 November 2021, UK Minister for Asia Amanda Milling announced that the UK would be providing GBP274 million to the Climate Action for Resilient Asia (CARA) programme.⁴⁵⁵³ CARA aims to help people adapt to climate change and funds projects that conserve biodiversity. Minister Milling emphasized that climate change “does not respect borders” and discussed collaboration with governments to promote low carbon growth and resilience to climate change.

On 15 November 2021, UK International Trade Secretary Marie Trevelyan announced that the UK would provide over GBP217 million to Turkey’s largest solar facility.⁴⁵⁵⁴ Once completed, the facility will deliver clean energy to over 2 million Turkish households and will aid Turkey in its transition towards green energy.

On 29 November 2021, the UK Central Digital and Data Office launched an “algorithmic transparency standard” for government departments and public sector organizations.⁴⁵⁵⁵ The standard aims to strengthen the UK’s position as a leader in trustworthy AI by managing the potential for bias in algorithmic decision making and supports other UK organizations in advocating for AI transparency and trustworthiness.

On 8 December 2021, the UK Department for Digital, Culture, Media and Sport announced the UK’s collaboration with the United States on a bilateral innovation prize challenges to advance privacy-enhancing

⁴⁵⁵⁰ Truss announces major investment in clean infrastructure in Asia, Foreign, Commonwealth & Development Office (London) 2 November 2021. Access Date: 21 December 2021. <https://www.gov.uk/government/news/truss-announces-major-investment-in-clean-infrastructure-in-asia>

⁴⁵⁵¹ New joint statement between UK and US to strengthen quantum collaboration, Department for Business, Energy & Industrial Strategy (London) 4 November 2021. Access Date: 29 January 2022. <https://www.gov.uk/government/news/new-joint-statement-between-uk-and-us-to-strengthen-quantum-collaboration>

⁴⁵⁵² Green Growth Compact agreement between the UK and Zambia, Foreign, Commonwealth & Development Office (London) 5 November 2021. Access Date: 21 December 2021. <https://www.gov.uk/government/news/green-growth-compact-agreement-between-the-uk-and-zambia>

⁴⁵⁵³ UK announces £274m boost to climate resilience across Indo-Pacific, Foreign, Commonwealth & Development Office (London) 8 November 2021. Access Date: 21 December 2021. <https://www.gov.uk/government/news/uk-announces-274m-boost-to-climate-resilience-across-indo-pacific>

⁴⁵⁵⁴ UK to provide £217 million for Turkish solar project, UK Export Finance (London) 15 November 2021. Access Date: 21 December 2021. <https://www.gov.uk/government/news/uk-to-provide-217-million-for-turkish-solar-project>

⁴⁵⁵⁵ UK government publishes pioneering standard for algorithmic transparency, Central Digital and Data Office (London) 29 November 2021. Access Date: 21 December 2021. <https://www.gov.uk/government/news/uk-government-publishes-pioneering-standard-for-algorithmic-transparency>

technologies.⁴⁵⁵⁶ The challenge aims to build on the innovation already existing in this area and use the power of emerging technologies to deal with global issues such as COVID-19 while protecting “privacy, accountability, and transparency.”

On 21 December 2021, the UK signed an agreement with the UN Office for Outer Space Affairs (UNOOSA) to address the information gap for space-related climate actions.⁴⁵⁵⁷ The agreement aims to facilitate coherence of activities using space for climate action, such as satellites measuring carbon emissions and deforestation and strengthening the space sector’s contribution to climate change.

On 12 January 2022, the Alan Turing Institute, supported by the British Standards Institution and the National Physical Laboratory, was selected to launch the AI Standards Hub.⁴⁵⁵⁸ The Hub aims to shape global AI technical standards and increasing the UK’s contribution to those standards, which will help the UK harness the power of AI and use it to support innovation.

On 15 February 2022, the UK signed a Letter of Arrangement with Japan to conduct joint research on a fighter jet sensor meant to better detect lethal threats from the air, land and sea.⁴⁵⁵⁹ The new sensor technology will allow the Armed Forces of both countries to improve their air combat abilities and continue military innovation.

On 24 February 2022, the UK Government pledged GBP160 million to the Coalition for Epidemic Preparedness and Innovation (CEPI).⁴⁵⁶⁰ The funding will accelerate CEPI’s vaccine development for deadly infectious diseases and promote equitable global access to vaccines.

On 17 March 2022, the UK Government signed an infrastructure deal and EUR2.1 billion loan with Turkey.⁴⁵⁶¹ The funding will be used to build an electric railway line in Turkey and will provide a lower carbon alternative to current routes. This sustainable railway will allow Turkey to fulfil its climate change commitments.

On 19 April 2022, Foreign Secretary Liz Truss signed an agreement with Indonesia committing to enhance investment on sustainable infrastructure and industries.⁴⁵⁶² Applicable industries include electric vehicles and

⁴⁵⁵⁶ US and UK to partner on prize challenges to advance Privacy-Enhancing Technologies, Department for Digital, Culture, Media & Sport (London) 8 December 2021. Access Date: 23 December 2021. <https://www.gov.uk/government/news/us-and-uk-to-partner-on-prize-challenges-to-advance-privacy-enhancing-technologies>

⁴⁵⁵⁷ UNOOSA and United Kingdom sign agreement to map global space-related climate action efforts, United Nations Office for Outer Space Affairs (Vienna) 21 December 2021. Access Date: 29 January 2022. <https://www.unoosa.org/oosa/en/informationfor/media/2021-unis-os-563.html>

⁴⁵⁵⁸ New UK initiative to shape global standards for Artificial Intelligence, Department for Digital, Culture, Media and Sport (London) 12 January 2022. Access Date: 16 January 2022. <https://www.gov.uk/government/news/new-uk-initiative-to-shape-global-standards-for-artificial-intelligence>

⁴⁵⁵⁹ UK and Japan to work together on world-leading fighter jet sensor, Ministry of Defence (London) 15 February 2022. Access Date: 3 April 2022. <https://www.gov.uk/government/news/uk-and-japan-to-work-together-on-world-leading-fighter-jet-sensor>

⁴⁵⁶⁰ UK pledges £160 million to boost global vaccine development, Foreign, Commonwealth & Development Office (London) 24 February 2022. Access Date: 3 April 2022. <https://www.gov.uk/government/news/uk-pledges-160-million-to-boost-global-vaccine-development>

⁴⁵⁶¹ UK and Turkey agree clean transport deal worth £1.7 billion in boost to British rail industry, UK Export Finance (London) 17 March 2022. Access Date: 9 May 2022. <https://www.gov.uk/government/news/uk-and-turkey-agree-clean-transport-deal-worth-17-billion-in-boost-to-british-rail-industry>

⁴⁵⁶² Ties with major Asian economy boosted through new agreement, Foreign, Commonwealth & Development Office (London) 19 April 2022. Access Date: 9 May 2022. <https://www.gov.uk/government/news/ties-with-major-asian-economy-boosted-through-new-agreement>

green technology, which will strengthen global climate ambition and promote sustainable economic development.⁴⁵⁶³

On 27 May 2022, Parliamentary Under-Secretary of State for Innovation at the Department of Health and Social Care Lord Kamall signed a Memorandum of Understanding with Swedish Minister for Education Anna Ekström.⁴⁵⁶⁴ The memorandum commits the UK and Sweden to ongoing cooperation in the life sciences prioritized by both countries, including pandemic preparedness, clinical trials and antimicrobial resistance.

The United Kingdom has fully complied with its commitment to collaborate on science-based responses to global challenges and drive innovation by calling on every nation to increase their research transparency and integrity. The UK has collaborated with G7 members and African and East Asian countries on initiatives addressing climate and health issues. The UK has also shown its commitment to transparency and integrity in innovation through regulation of rapidly emerging technologies including AI.

Thus, the United Kingdom receives a score of +1.

Analyst: Fiorella Maria Gaveglia-Fernández

United States: 0

The United States has partially complied with its commitment to collaborate on science-based responses to global challenges and drive innovation by calling on every nation to increase their research transparency and integrity.

On 15 June 2021, the US National Institute of Standards and Technology (NIST) agreed to renew its cooperation with the European Commission's Joint Research Centre (JRC).⁴⁵⁶⁵ The NIST and JRC will work together over the next five years in eight fields including environment and climate, food safety and healthcare measurements to implement objectives that will help various nations face future challenges.

On 21 July 2021, the US and Germany launched the German-American Climate and Energy Partnership.⁴⁵⁶⁶ The partnership seeks to encourage close collaboration on research and action plans to reduce domestic emissions and aid emerging countries in their energy transition efforts. Particularly, the German-American partnership aims to support Central and Eastern European countries in tackling climate change. Both states pledged investments of at least US\$1 billion in Ukraine to promote renewables, facilitate the development of hydrogen-powered energy, accelerate coal phase-out and support carbon neutrality.

On 15 September 2021, Prime Minister Boris Johnson announced the launch of AUKUS, a security partnership with Australia and the United States.⁴⁵⁶⁷ The partnership aims to enhance technology sharing, promote integration of defense-related science, technology and supply chains.

On 3 November, Secretary of Commerce Gina Raimondo met with Canada's Minister of Innovation, Science and Industry François-Philippe Champagne to outline a plan to increase cross-border COVID-19

⁴⁵⁶³ UK-Indonesia Partnership Roadmap 2022 to 2024, Foreign, Commonwealth & Development Office (London) 19 April 2022. Access Date: 9 May 2022. <https://www.gov.uk/government/publications/uk-indonesia-partnership-roadmap-2022-to-2024/uk-indonesia-partnership-roadmap-2022-to-2024>

⁴⁵⁶⁴ UK commits to Life Sciences cooperation with Sweden, Department for Business, Energy & Industrial Strategy (London) 27 May 2022. Access Date: 9 June 2022. <https://www.gov.uk/government/news/uk-commits-to-life-sciences-cooperation-with-sweden>

⁴⁵⁶⁵ New arrangement boosts EU-US science cooperation to support innovation, European Commission (Brussels) 15 June 2021. Access Date: 30 January 2022. <https://ec.europa.eu/jrc/en/news/new-arrangement-boosts-eu-us-science-cooperation-support-innovation>

⁴⁵⁶⁶ Joint statement of USA and Germany in support of Ukraine, European energy security and our climate goals, Ministry of Foreign Affairs (Berlin) 21 July 2021. Translation provided by Google Translate. Access Date: 15 December 2021. <https://www.auswaertiges-amt.de/de/newsroom/gemeinsame-erklaerung-usa-und-deutschland/2472074>

⁴⁵⁶⁷ UK, US and Australia launch new security partnership, Prime Minister's Office (London) 15 September 2021. Access Date: 21 December 2021. <https://www.gov.uk/government/news/uk-us-and-australia-launch-new-security-partnership>

collaboration between the US and Canada.⁴⁵⁶⁸ Under the plan, Raimondo and Champagne agreed to share approaches on enhancing security of software supply chains and expand work on net-zero industrial transformation and renewable energy sources.

On 3 November 2021, European Union Commissioner for Agriculture Janusz Wojciechowski and United States Secretary of Agriculture Secretary Tom Vilsack announced a joint statement on a newly created transatlantic collaboration platform on agriculture.⁴⁵⁶⁹ In the statement, the two members reaffirmed EU-U.S. collaboration to address global challenges by developing sustainable and climate-smart agricultural production.

On 4 November 2021, the US government issued a joint statement with the UK addressing cooperation between the NIST and UK National Physical Laboratory on quantum science and technology.⁴⁵⁷⁰ The two nations aim to increase their collaboration on quantum technologies, which have the potential to “revolutionize everything” and protect the changing environment.

On 10 November 2021, the US Office of Special Presidential Envoy for Climate and Japan’s Ministry of the Environment announced an initiative for Global Subnational Zero Carbon promotion.⁴⁵⁷¹ The project aims for both countries to cooperate to promote climate action globally for a decarbonized society.

On 6 January 2022, the US government signed a defense collaboration deal with Japan.⁴⁵⁷² The deal aims to counter emerging defense threats to space and cyber through joint investments and innovation by the US and Japan. Scientists and engineers from both countries will be able to collaborate to address defense issues.⁴⁵⁷³

On 8 March 2022, the US Agency for International Development announced its intent to provide USD150 million over three years to the Coalition for Epidemic Preparedness Innovation (CEPI).⁴⁵⁷⁴ The donation aims to accelerate CEPI’s development of vaccines and other countermeasures against new infectious disease threats while creating strong and equitable outbreak responses.

On 14 March 2022, the European Commission and US Department of Energy announced joint support for a collaboration between the European Battery Alliance and the US Li-Bridge alliance.⁴⁵⁷⁵ The collaboration

⁴⁵⁶⁸ Joint Readout on Cooperation between the U.S. Department of Commerce and Innovation, Science and Economic Development Canada, U.S. Department of Commerce (Washington D.C.) 3 November 2021. Access Date: 30 January 2022.

<https://www.commerce.gov/news/press-releases/2021/11/joint-readout-cooperation-between-us-department-commerce-and-innovation>

⁴⁵⁶⁹ U.S., EU Launch Collaboration Platform on Agriculture, Department of Agriculture (Washington D.C.) 3 November 2021. Access Date: 19 December 2021. <https://www.usda.gov/media/press-releases/2021/11/03/us-eu-launch-collaboration-platform-agriculture>

⁴⁵⁷⁰ The United States and United Kingdom Issue Joint Statement to Enhance Cooperation on Quantum Information Science and Technology, The White House (Washington D.C.) 4 November 2021. Access Date: 30 January 2022.

<https://www.whitehouse.gov/ostp/news-updates/2021/11/04/the-united-states-and-united-kingdom-issue-joint-statement-to-enhance-cooperation-on-quantum-information-science-and-technology/>

⁴⁵⁷¹ Announcement of launch of "Global Subnational Zero Carbon Promotion Initiative" by Japan and United States of America, Ministry of the Environment (Tokyo) 19 November 2021. Access Date: 21 December 2021.

<https://www.env.go.jp/en/headline/2558.html>

⁴⁵⁷² Joint Statement of the U.S.-Japan Security Consultative Committee ("2+2"), U.S. Department of Defense (Washington D.C.) 6 January 2022. Access Date: 30 January 2022. <https://www.defense.gov/News/Releases/Release/Article/2891314/joint-statement-of-the-us-japan-security-consultative-committee-22/>

⁴⁵⁷³ US, Japan to Launch New Defense Research and Development Agreement, Voice of America (Washington D.C.) 6 January 2022. Access Date: 30 January 2022. <https://www.voanews.com/a/us-japan-to-launch-new-defense-research-and-development-agreement-/6386408.html>

⁴⁵⁷⁴ USAID Announces \$150 Million to Stimulate and Accelerate the Development of Vaccines and Other Countermeasures Against Biological Threats, United States Agency for International Development (Washington D.C.) 8 March 2022. Access Date: 3 April 2022. <https://www.usaid.gov/news-information/press-releases/mar-8-2022-usaid-announces-150-million-stimulate-and-accelerate-development>

⁴⁵⁷⁵ DEO and European Commission Support Collaboration Between the U.S. Li-Bridge Alliance and European Battery Alliance to Strengthen Supply Chain for Battery Technologies, U.S. Department of Energy (Washington D.C.) 15 March 2022. Access Date: 20 March 2022. <https://www.energy.gov/articles/doe-and-european-commission-support-collaboration-between-us-li-bridge-alliance-and>

aims to accelerate the development of lithium-ion and next-generation batteries' supply chains to increase the use of clean energy and combat the climate crisis.

On 25 May 2022, EPA Administrator Michael Regan signed a joint declaration with German Federal Environment Minister Steffi Lemke and UBA President Dirk Messner.⁴⁵⁷⁶ The declaration aims to promote cooperation between the EPA and UBA on global environmental issues including climate protection, air pollution and marine protection. The two institutions plan to share knowledge and coordinate on solutions to these global issues.

The United States has partially complied with its commitment to collaborate on science-based responses to global challenges and drive innovation by calling on every nation to increase their research transparency and integrity. The US has taken strong actions to collaborate on scientific-based research to solve global issues with G7 members. However, the US has not called on other countries to increase their research transparency and integrity.

Thus, the United States receives a score of 0.

Analyst: Qianai Cheng

European Union: +1

The European Union has fully complied with its commitment to collaborate on science-based responses to global challenges and drive innovation by calling on every nation to increase their research transparency and integrity.

On 14 June 2021, the European Commission launched 11 new European partnerships to boost investments in research and innovation and make Europe the first climate-neutral continent.⁴⁵⁷⁷ The partnerships feature a “twin green and digital transition” to advance digitalization alongside decarbonization and receive EUR22 billion from private partners and EU member states. The partnerships will “tackle emissions from energy-intensive industries” and develop and supply “high-performance batteries, sustainable fuels, artificial intelligence tools, data technologies, robotics and more.”

On 16 June 2021, the European Commission adopted the roadmap of Horizon Europe for the 2021-2022 period.⁴⁵⁷⁸ The roadmap outlines the objectives and specific topic areas that will receive EUR14.7 billion in funding for research and development. EUR5.8 billion will be invested in research and innovation to support the European Green Deal; EUR4 billion will be invested in digital tools and research to maximize innovations in healthcare, green energy and food production; EUR1.9 billion will be directed to the modernization of healthcare systems and the improvement of research capacities for COVID-19 vaccine development. The roadmap also dedicates actions to deepen the EU’s cooperation with other states through multilateral initiatives in biodiversity preservation, ocean research and global health.

⁴⁵⁷⁶ Joint Statement by the U.S. Environmental Protection Agency, the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection, and the German Environment Agency, Environmental Protection Agency (Washington D.C.) 25 May 2022. Access Date: 9 June 2022. <https://www.epa.gov/newsreleases/joint-statement-us-environmental-protection-agency-german-federal-ministry-environment>

⁴⁵⁷⁷ Commission and industry invest €22 billion in new European Partnerships to deliver solutions to major societal challenges, European Commission (Brussels) 14 June 2021. Access Date: 19 December 2021. https://ec.europa.eu/commission/presscorner/detail/en/ip_21_2943

⁴⁵⁷⁸ Commission to invest €14.7 billion from Horizon Europe for a healthier, greener and more digital Europe, European Commission (Brussels) 16 June 2021. Access Date: 19 December 2021. https://ec.europa.eu/commission/presscorner/detail/en/ip_21_2993

On 15 July 2021, the European Parliament Committee on Industry, Research and Energy Committee adopted new rules to boost data sharing across the EU.⁴⁵⁷⁹ The new rules in the EU Data Governance Act aim to increase trust in data sharing and facilitate the re-use of data held by public institutions, including certain health, agricultural and environmental data previously unavailable. According to Members of the European Parliament (MEPs), enhanced data sharing can help create new products and innovations in the EU, unlocking the potential of research centres, start-ups and businesses in fields like artificial intelligence, climate change and healthcare.

On 16 July 2021, the European Commission adopted a proposal for a “Council Recommendation on ‘A Pact for Research and Innovation in Europe.’”⁴⁵⁸⁰ The Pact will update policy coordination and monitoring for EU Member States regarding the best practices for exchanging research.

On 22 July 2021, the European Commission announced EUR120 million in research funding for projects tackling COVID-19 and its variants.⁴⁵⁸¹ The Commission short-listed 11 projects involving 312 research teams from 40 countries, including 38 participants from 23 countries outside the EU. The projects will support clinical trials for new treatments and vaccines, develop a network of experts within and outside of Europe, widen access to research infrastructure and share data, expertise and resources across borders. The projects will also “maximize synergies” at all levels of government and avoid the “duplication of research efforts,” enabling the EU and other countries to better tackle the ongoing pandemic and anticipate future ones.

On 15 September 2021, the European Parliament extended the mandate of the European Centre for Disease Prevention and Control (ECDC).⁴⁵⁸² The renewed mandate asks that EU member states “develop national preparedness and response plans, and provide timely, comparable and high-quality data.” According to MEPs, this legislative initiative strengthens the EU’s crisis prevention, preparedness, and response to ongoing and future cross-border health threats. It also calls for increased cooperation and the exchange of information, expertise and best practices between member states in addressing global health challenges.

On 28 September 2021, the Council of the European Union adopted a global approach to research and innovation.⁴⁵⁸³ Ministers of all EU member states agreed on the importance of rules-based multilateral cooperation and dialogue to address social, environmental, health, digital and economic challenges. Ministers also identified openness and international cooperation with third countries as “essential factors” in driving forward research and innovation. Ministers committed to mobilizing science, technology and innovation and tailoring the EU’s bilateral cooperation in research and innovation in an open manner.

On 29 September 2021, the European Commission launched five collaborative missions to tackle global health and climate challenges.⁴⁵⁸⁴ The missions support research and innovations to deliver on the

⁴⁵⁷⁹ Data governance: new rules to boost data sharing across the EU, European Parliament (Strasbourg) 16 July 2021. Access Date: 14 December 2021. <https://www.europarl.europa.eu/news/en/press-room/20210708IPR08014/data-governance-new-rules-to-boost-data-sharing-across-the-eu>

⁴⁵⁸⁰ Commission adopts proposals for a Pact for Research and Innovation in Europe, European Commission (Brussels) 16 July 2021. Access Date: 8 March 2022. https://ec.europa.eu/info/news/commission-adopts-proposal-pact-research-and-innovation-europe-2021-jul-16_en

⁴⁵⁸¹ Coronavirus: Commission steps up research funding with €120 million for 11 new projects to tackle the virus and its variants, European Commission (Brussels) 22 July 2021. Access Date: 19 December 2021. https://ec.europa.eu/commission/presscorner/detail/en/ip_21_3803

⁴⁵⁸² European Health Union: better disease prevention and cross-border cooperation, European Parliament (Strasbourg) 15 September 2021. Access Date: 14 December 2021. <https://www.europarl.europa.eu/news/en/press-room/20210910IPR11907/european-health-union-better-disease-prevention-and-cross-border-cooperation>

⁴⁵⁸³ Council agrees on a global approach to research and innovation, Council of the European Union (Brussels) 28 September 2021. Access Date: 19 December 2021. <https://www.consilium.europa.eu/en/press/press-releases/2021/09/28/council-agrees-on-a-global-approach-to-research-and-innovation/>

⁴⁵⁸⁴ Commission launches EU missions to tackle major challenges, European Commission (Brussels) 29 September 2021. Access Date: 19 December 2021. https://ec.europa.eu/commission/presscorner/detail/en/ip_21_4747

Commission's main priorities by 2030 and are funded by Horizon Europe's EUR95.5 billion budget.⁴⁵⁸⁵ The Adaptation to Climate Change mission aims to support at least 150 European regions to become climate resilient, the Cancer mission aims to improve the lives of more than 3 million people via prevention and treatment, the Restore our Oceans and Waters mission aims to protect Europe's marine ecosystems, the Climate-neutral and smart cities mission aim to deliver 100 climate-positive European cities and the Soil Deal for Europe mission aims to secure healthy soils in Europe via 100 living labs and lighthouses.

On 14 October 2021, the European Commission's Innovation Council announced funding for start-ups working on breakthrough innovations that address global challenges.⁴⁵⁸⁶ The Council selected 65 start-ups and small and medium-sized enterprises (SMEs) from 16 countries. Together, these companies will receive EUR363 million in funding to develop and scale up breakthrough innovations in healthcare, digital technologies, energy, biotechnology and space. These companies were selected under the guidelines of Horizon Europe—the EU program for research and innovation—and the European Innovation Council (EIC) Accelerator.

On 21 October 2021, the European Parliament demanded more transparent COVID-19 vaccine policies in the EU.⁴⁵⁸⁷ In a new resolution, the European Parliament called for legislation to make the “process of researching, purchasing and distributing COVID-19 vaccines more transparent.” According to MEPs, more transparency could help counter vaccine hesitancy and disinformation in the continent, which are obstacles in the fight against COVID-19.

On 28 October 2021, the European Parliament adopted new legislation to address cybersecurity threats, which are the fastest-growing form of crime worldwide.⁴⁵⁸⁸ The new legislation requires EU countries to “meet stricter supervisory and enforcement measures” and “harmonize their actions regimes.” The directive serves as a framework for better cooperation and information sharing between EU member states and authorities on cybersecurity.

On 1 March 2022, the European Commission selected the first 50 women-led companies to boost deep-tech innovation in Europe.⁴⁵⁸⁹ The initiative, part of Women TechEU, will offer grants worth EUR75,000 each to support women-led start-ups in 15 different countries. The selected companies address the sustainable development goals in Europe and the innovation gender gap by supporting the women leading them.

On 4 March 2022, the European Commission suspended cooperation with Russia on research, science and innovation in retaliation for its invasion of Ukraine.⁴⁵⁹⁰ The European Commission announced that it will not reach new agreements with Russian research organizations and that all ongoing projects with said organizations will undergo an extensive review. The European Commission suspended payments, effective immediately, to all Russian entities under existing contracts.

⁴⁵⁸⁵ Horizon Europe, European Commission (Brussels) 29 April 2021. Date Access: 19 December 2021. https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe_en

⁴⁵⁸⁶ European Innovation Council announces new wave of start-up champions, European Commission (Brussels) 14 October 2021. Access Date: 19 December 2021. https://ec.europa.eu/commission/presscorner/detail/en/ip_21_5225

⁴⁵⁸⁷ COVID-19: Parliament wants more transparent EU vaccine policies, European Parliament (Strasbourg) 21 October 2021. Access Date: 14 December 2021. <https://www.europarl.europa.eu/news/en/press-room/20211014IPR14927/covid-19-parliament-wants-more-transparent-eu-vaccine-policies>

⁴⁵⁸⁸ Cybersecurity: MEPs strengthen EU-wide requirements against threats, European Parliament (Strasbourg) 28 October 2021. Access Date: 14 December 2021. <https://www.europarl.europa.eu/news/en/press-room/20211022IPR15610/cybersecurity-meps-strengthen-eu-wide-requirements-against-threats>

⁴⁵⁸⁹ Commission selects first 50 women-led companies to boost deep-tech innovation in Europe, European Commission (Brussels) 1 March 2022. Access Date: 20 March 2022. https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1336

⁴⁵⁹⁰ Commission suspends cooperation with Russia on research and innovation, European Commission (Brussels) 4 March 2022. Access Date: 20 March 2022. https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1544

On 14 March 2022, the US Department of Energy and the European Commission announced joint support for a collaboration between the European Battery Alliance and the US Li-Bridge alliance.⁴⁵⁹¹ The collaboration aims to accelerate the development of lithium-ion and next-generation batteries' supply chains to increase the use of clean energy and combat the climate crisis.

On 16 May 2022, the Delegation of the European Union to Israel and the Israel-Europe Research and Innovation Directorate launched the Horizon Europe Programme in Israel.⁴⁵⁹² The program allows Israeli researchers to participate in addressing global issues like sustainability, green transition and advanced computing systems by transferring existing knowledge to innovative solutions.

The European Union has fully complied with its commitment to collaborate on science-based responses to global challenges and drive innovation by calling on every nation to increase their research transparency and integrity. The EU has launched partnerships, missions, and enacted legislation to invest in research, development and innovation in cooperation with member states and non-member states. International cooperation has primarily focused on climate change, digitalization, global health and security. The EU has also repeatedly called on its 27 members to increase their research efforts, as well as their transparency and integrity, at the European Parliament, the European Commission and the European Council.

Thus, the European Union receives a score of +1.

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⁴⁵⁹¹ European Commission and U.S. Department of Energy support collaboration between the European Battery Alliance and U.S. Li-Bridge Alliance to strengthen supply chain, European Commission (Brussels) 14 March 2022. Access Date: 3 April 2022. https://ec.europa.eu/growth/news/european-commission-and-us-department-energy-support-collaboration-between-european-battery-alliance-2022-03-14_en

⁴⁵⁹² The European Union and the Israeli Innovation Authority Mark Launch of a New Chapter in Research & Innovation Cooperation, Delegation of the European Union to the State of Israel (Tel Aviv) 19 May 2022. Access Date: 9 June 2022. https://www.eeas.europa.eu/delegations/israel/european-union-and-israeli-innovation-authority-mark-launch-new-chapter-research_en?s=200