



The G7 Research Group presents the

2021 G7 Cornwall Summit Interim 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

Contents

Introduction	3
Research Team	4
Compliance Directors	4
Lead Analysts	4
Compliance Analysts	4
Summary	6
The Interim Compliance Score	6
Compliance by Member	6
Compliance by Commitment	6
The Compliance Gap Between Members	6
Future Research and Reports	6
Table A: 2021 Priority Commitments Selected for Assessment	7
Table B: 2020 G7 Cornwall Interim Compliance Scores	9
Table C: 2020 G7 Cornwall Interim Compliance Scores by Member	10
Table D: 2020 G7 Cornwall Interim Compliance Scores by Commitment	11
1. Health: Vaccines	12
2. Health: Vaccine Equity	44
3. Health: Disease Prevention	55
4. Health: Indirect Impacts of COVID-19	78
5. Climate Change: Zero Emission Vehicles	111
6. Agriculture, Forestry and Land Use	131
7. Crime and Corruption: Environmental Crime	163
8. Environment: Halting and Reversing Biodiversity Loss	176
9. Environment: Marine Health and Litter	201
10. Energy: Renewables	226
11. Energy: Coal	249
12. Trade: Free Trade	276
13. Gender: Education Equality	298
14. Democracy: China	315
15. Regional Security: Addressing Instability	333
16. Development: Sustainable Growth in Africa	368
17. Infrastructure: Build Back Better	386
18. Human Rights: Forced Labour	407
19. Digital Economy: Open Internet	427
20. Macroeconomics: Strong, Resilient, Sustainable, Balanced and Inclusive Growth	446
21. International Cooperation: Research Transparency	509
22. International Cooperation: Research and Knowledge Sharing	530

10. Energy: Renewables

“[In our energy sectors, we will]...accelerate renewable and other zero emissions energy deployment.”

Carbis Bay G7 Summit Communiqué

Assessment

	No Compliance	Partial Compliance	Full Compliance
Canada			+1
France			+1
Germany			+1
Italy		0	
Japan			+1
United Kingdom			+1
United States			+1
European Union			+1
Average		+0.88 (94%)	

Background

Over the decades, there has been an increase in net-zero energy emissions pledges to combat climate change on the global stage. However, organizations like the International Energy Agency (IEA) argue that, even if positive changes have been made, current government strategies are in poor form to achieve their goals of net-zero energy emissions by 2050, never mind 2030.¹²¹⁰ Despite its recent urgency, energy and its renewable alternatives have been pushed by the G7 since its early summits as a key way to move away from imported oil and, according to the G7, improve energy security.¹²¹¹

At the 1978 Bonn Summit in Germany, the G7 leaders first introduced the importance of pursuing research and development (R&D) initiatives for renewable energy alternatives as a way to combat the worsening OPEC oil energy crisis.¹²¹² At the time, the leaders prioritized reducing their dependency on imported oils while also emphasizing the importance coal would play as an energy source in the long term.

At the 2000 Okinawa Summit, the G7 leaders discussed renewable energy for the first time since 1981. This conversation preceded the findings of the G8 Environment Ministers' Meeting in Otsu and Cartagena Protocol on Biosafety.¹²¹³ At this summit, the leaders committed to investigate renewable energy barriers and solutions in developing countries as a way to combat pollution and climate change.

At the 2001 Trieste Summit in France, the leaders committed to take the lead by strengthening and implementing national programs and actions in order to reduce the GHG emissions and, to also promote renewable energies.¹²¹⁴

¹²¹⁰ Net Zero by 2050, International Energy Agency (Paris) 18 May 2021. Access Date: 24 September 2021.

<https://www.iea.org/reports/net-zero-by-2050>

¹²¹¹ Bonn Summit G7 Communiqué, G7 Information Centre (Toronto) 17 July 1978. Access Date: 24 September 2021.

<http://www.g7.utoronto.ca/summit/1978bonn/communique.html>

¹²¹² Bonn Summit G7 Communiqué, G7 Information Centre (Toronto) 17 July 1978. Access Date: 24 September 2021.

<http://www.g7.utoronto.ca/summit/1978bonn/communique.html>

¹²¹³ G8 Communiqué Okinawa 2000, G7 Information Centre (Toronto) 23 July 2000. Access Date: 24 September 2021.

<http://www.g7.utoronto.ca/summit/2000okinawa/finalcom.html>

¹²¹⁴ G7/8 Environment Ministers Commitments, G7 Information Centre (Toronto) 8 May 2018. Access Date: 16 October 2021.

<http://www.g7.utoronto.ca/evaluations/g7-commitments-environment.html>

At the 2002 Summit in Banff, Canada, the leaders committed to work together with governments and other partners to take effective actions in the field of energy.¹²¹⁵ The leaders committed to increase energy efficiency, improving energy resources, developing new technologies and promoting the usage of renewable energy sources in all countries.

At the 2005 Gleneagles Summit, the G8 leaders committed to tackle climate change and promote clean energy.¹²¹⁶ The leaders committed to take measures to develop markets for clean energy technologies in order to increase their availability in developing nations, and to help vulnerable communities to adapt to the impact of climate change.

At the 2009 at the L'Aquila Summit in Italy, renewable energy was given a larger role in global climate talks following the 2008 Economic Crisis. At this summit, renewable energy was incorporated into action-based discussions on green recovery, technology-driven paths to tackle climate change, and the preliminary talks of carbon markets.¹²¹⁷ However, a focus still was put on the importance of R&D of sustainable alternatives in developing countries.

At the 2014 Rome Summit in Italy, the energy ministers committed to promote the use of low carbon technologies like renewable energies.¹²¹⁸ They also committed to work with known institutions like the International Renewable Energy Agency and international financial institutions to supply technical assistance for renewable energies in Ukraine and other European nations.

At the 2015 Hamburg Summit in Germany, the leaders committed to support the use of renewable energy sources.¹²¹⁹ The leaders mentioned that their goal with the usage of renewable energy sources is to reduce the GHG emissions in their energy systems.

At the 2016 Ise-Shima Summit in Japan, the G7 leaders committed to invest in the energy sectors such as innovations in renewable energy sources and other low carbon technologies in order to help to build an economic growth from carbon emissions.¹²²⁰ The leaders reaffirmed their commitment to enhance cooperation in energy technology innovation, research, development, and deployment, in order to accelerate the technological progress towards clean energy, including renewable energy sources.

At the 2018 Charlevoix Summit in Canada, the US took the lead on the issue of renewable energy.¹²²¹ The US committed to “work closely with other countries” to “help deploy renewable and other clean energy sources” to aid in the fight against climate change and foster sustainable development. The other members subsequently committed to work towards emissions reductions by fostering innovation.

¹²¹⁵ G7/8 Environment Ministers Commitments, G7 Information Centre (Toronto) 8 May 2018. Access Date: 16 October 2021. <http://www.g7.utoronto.ca/evaluations/g7-commitments-environment.html>

¹²¹⁶ Chairs' Summary, G7 Information Centre (Toronto) 8 July 2005. Access Date: 16 October 2021. <http://www.g8.utoronto.ca/summit/2005gleneagles/summary.html>

¹²¹⁷ Responsible Leadership for a Sustainable Future, G7 Information Centre (Toronto) 8 July 2009. Access Date: 24 September 2021. <http://www.g7.utoronto.ca/summit/2009laquila/2009-declaration.pdf>

¹²¹⁸ Rome G7 Energy Initiative for Energy Security, G7 Information Centre (Toronto) 6 May 2014. Access Date: 16 October 2021. <http://www.g7.utoronto.ca/energy/140506-rome.html>

¹²¹⁹ G7 Hamburg Initiative for Sustainable Energy Security, G7 Information Centre (Toronto) 12 May 2015. Access Date: 16 October 2021. <http://www.g7.utoronto.ca/energy/150512-hamburg.html>

¹²²⁰ G7 Kitakyushu Energy Ministerial Meeting Kitakyushu Initiative on Energy Security for Global Growth Joint Statement, G7 Information Centre (Toronto) 2 May 2016. Access Date: 16 October 2021. <http://www.g7.utoronto.ca/energy/160502-statement.html>

¹²²¹ The Charlevoix G7 Summit Communiqué, G7 Information Centre (Toronto) 9 June 2018. Access Date: 10 February 2022. <http://www.g7.utoronto.ca/summit/2018charlevoix/communique.html>

Finally, at the 2021 at the Cornwall Summit, the G7 strived to push renewable energy alternatives as a way to holistically “build back better” from the COVID-19 pandemic, as per the roadmap designed by the International Energy Agency and adhere to the targets from the Paris Agreement.¹²²²

Commitment Features

At the 2021 Cornwall Summit, G7 leaders strived to push renewable energy alternatives as a way to holistically “build back better” from the COVID-19 pandemic, as per the roadmap designed by the IEA in order to adhere to the targets from the Paris Agreement.¹²²³ The G7 leaders declared that “[in our energy sectors, we will]...accelerate renewable and other zero emissions energy deployment.” There are two criteria components of this commitment that must be fulfilled in order to achieve full compliance. These include accelerating renewable energy deployment and accelerating other zero emissions energy deployment. Since the commitment specifies “in our energy sectors” only domestic actions will count towards compliance.

To “accelerate” is understood to mean “to hasten the progress or development of.”¹²²⁴ In the context of this commitment, “accelerate” refers to increasing the rate of development of new projects or initiatives that seek to implement the deployment of renewable and other zero emissions energy. In addition, “accelerate” also refers to increasing the rate of pre-established initiatives that work towards this goal.

“Renewable energy” is understood to mean, “any naturally occurring, theoretically inexhaustible source of energy, such as biomass, solar, wind, tidal, wave, and hydroelectric power, that is not derived from fossil or nuclear fuel.”¹²²⁵ In the context of this commitment, examples of strong action to accelerate renewable energy can include, but are not limited to: funding the utilization of solar, wind and hydro power; supporting research and development initiatives that promote renewable energy; and implementing renewable energies in government buildings and properties. Examples of weaker actions related to the acceleration of renewable energy include, but are not limited to: chairing/organizing a conference on the importance of renewable energy and making a public statement on the importance of accelerating renewable energy without actually providing concrete support.

“Other zero emissions energies” refer to energy technology that produces no emissions (or that the GHGs going “into the atmosphere are balanced by removal out of the atmosphere”).¹²²⁶ In the context of this commitment, other zero emissions energies refer to the non-renewable net-zero energy technologies. Examples of other zero emissions energies include, but are not limited to: nuclear power and carbon capture and sequestration technologies. Similar to renewable energies, examples of a strong action to accelerate other zero emissions energies can include, but are not limited to: funding the utilization of nuclear and carbon capture technologies and supporting research and development initiatives that promote zero-emissions energies (other than renewable ones). Examples of weaker actions related to the acceleration of other zero emissions energies include, but are not limited to: chairing/organizing a conference on the importance of other zero emissions energies beyond renewable ones and by making a public statement on the importance of accelerating these initiatives without actually providing concrete support.

In order to achieve full compliance, or a score of +1, a G7 member must take at least two strong actions in each of the two commitment components. The two commitment components that must be fulfilled, as stated above, include accelerating renewable energy deployment and accelerating other zero emissions energy

¹²²² Carbis Bay G7 Summit Communiqué, Group of Seven (Cornwall) 13 June 2021. Access Date: 25 September 2021. <https://www.g7uk.org/wp-content/uploads/2021/06/Carbis-Bay-G7-Summit-Communique-PDF-430KB-25-pages-3.pdf>

¹²²³ Carbis Bay G7 Summit Communiqué, Group of Seven (Cornwall) 13 June 2021. Access Date: 25 September 2021. <https://www.g7uk.org/wp-content/uploads/2021/06/Carbis-Bay-G7-Summit-Communique-PDF-430KB-25-pages-3.pdf>

¹²²⁴ Accelerate, Merriam-Webster (Springfield) n.d. Access Date: 18 October 2021. <https://www.merriam-webster.com/dictionary/accelerate>

¹²²⁵ Renewable Energy, Dictionary.com . Access Date: 13 October 2021. <https://www.dictionary.com/browse/renewable-energy>

¹²²⁶ What Is Net Zero, Net Zero Climate (Oxford) n.d. Access Date: 18 October 2021. <https://netzeroclimate.org/what-is-net-zero/>

deployment. Examples of what is considered strong action for each component is described above. An example of overall full compliance includes: one action that designates funding to a municipality to incorporate renewable energy technologies, one action that creates a task force for researching how to efficiently implement renewable technologies in the energy sector, one action that provides funding for R&D of carbon capture and sequestration technologies and one action that provides funding for research into adopting nuclear energy.

In order to achieve partial compliance, or a score of 0, a G7 member will have either taken at least one strong and one partial action in each of the two commitment components or the G7 member has taken at least two strong actions in one component and only weak action in the other component. For example, if a G7 member were to have only provided funding for both a research initiative that seeks to develop carbon capture technologies and for a project that utilizes solar panels, they would have taken a strong action in each component. However, if a G7 member only took weak action in each component beyond the two examples of strong action, they would achieve partial compliance. Additionally, if a member takes two strong actions in only one component (such as only taking strong action for renewable technologies) but only partial action in the other component, they will achieve partial compliance.

Non-compliance, or a score of -1, will be awarded to any G7 member that fails to meet the threshold of partial compliance, whether by only taking one strong action, taking only weak action(s) or taking no action towards fulfilling the commitment.

Scoring Guidelines

-1	The G7 member has either only taken ONE strong action overall, only taken weak actions overall or taken no actions towards fulfilling the two commitment components.
0	The G7 member has taken at least ONE strong action and ONE weak action in EACH of the two commitment components OR the member has taken TWO strong actions in one of the components and only weak action in the other.
+1	The G7 member has taken at least TWO strong actions in BOTH of the two commitment components.

*Compliance Director: Aida Zarghami
Lead Analyst: Angelina Zabajko*

Canada: +1

Canada has fully complied with its commitment to accelerate renewable energy deployment and accelerate other zero emissions energy deployment.

On 30 June 2021, the Parliamentary Secretary to the Minister of Infrastructure and Communities, Andy Fillmore, announced in partnership with other ministers, announced that government funding will be provided for an ambient temperature district energy system in downtown Halifax.¹²²⁷ The project will support a “district energy system that supplies renewable energy” to buildings in the district.

On 12 July 2021, the Government of Canada announced that it will provide CAD1.8 million in federal funding for the New Dawn Enterprises and the Verschuren Centre for Sustainability in Energy and the

¹²²⁷ Canada and Nova Scotia invest in renewable energy infrastructure for the Cogswell Redevelopment Area, Infrastructure Canada (Halifax) 30 June 2021. Access Date: 5 February 2022. <https://www.canada.ca/en/office-infrastructure/news/2021/06/canada-and-nova-scotia-invest-in-renewable-energy-infrastructure-for-the-cogswell-redevelopment-area.html>

Environment to produce the first net-zero community in Pine Tree Park Estates, Nova Scotia.¹²²⁸ This will serve as a model for other communities to implement similar objectives.

On 14 July 2021, Prime Minister Justin Trudeau announced CAD25 million in funding, in collaboration with the Government of Quebec and LM Wind Power, as contribution to a CAD160 million project for LM Wind Power to expand its wind turbine blades manufacturing facility in Gaspé, Québec.¹²²⁹ Energy generated from wind turbines is renewable.

On 16 July 2021, Minister Andy Fillmore announced that the Government of Canada will provide additional funding to “support energy efficiency upgrades to five community buildings in Halifax.”¹²³⁰ The funding will go to installing solar power energy production infrastructure to reduce emissions and aid the transition to renewables.

On 23 July 2021, the Special Representative for the Prairies, Jim Carr, announced that the Government of Canada will provide funding for nine new projects in Manitoba to “support green infrastructure and upgrade” facilities.¹²³¹ This will help buildings to become more energy efficient and aid in the energy transition.

On 9 August 2021, Minister of Natural Resources Seamus O’Regan Jr. opened calls for studies on carbon capture technologies, supplementing the government’s pledge to contribute CAD319 million as a part of Budget 2021 to fund research, development, and commercialization of carbon capture technologies.¹²³² Carbon capture technologies contribute to the goal of net-zero.

On 30 August 2021, it was announced that a Canadian government document outlined plans to build two new carbon capture hubs, with capacities for at least 15 million tonnes of carbon captured annually. The document also details plans to have both sites in planning and under construction by 2030.¹²³³

On 1 November 2021, Prime Minister Justin Trudeau announced CAD25 million in funding to the Energy Sector Management Assistance Program, a partnership with the World Bank that seeks to develop and implement clean energy alternatives in low- and middle-income countries.¹²³⁴ This will help countries that can’t afford it to transition to renewable energy.

¹²²⁸ Government of Canada announces support for the first net-zero energy community in Nova Scotia, Atlantic Canada Opportunities Agency (Ottawa) 12 July 2021. Access Date: 5 February 2022. <https://www.canada.ca/en/atlantic-canada-opportunities/news/2021/07/government-of-canada-announces-support-for-the-first-net-zero-energy-community-in-nova-scotia.html>

¹²²⁹ Supporting renewable energy manufacturing in Quebec to create jobs and build a cleaner future, Prime Minister of Canada (Ottawa) 14 July 2021. Access date: 9 November 2021. <https://pm.gc.ca/en/news/news-releases/2021/07/14/supporting-renewable-energy-manufacturing-quebec-create-jobs-and>

¹²³⁰ Canada and Nova Scotia invest in energy efficiency upgrades for five community buildings in Halifax, Infrastructure Canada (Halifax) 16 July 2021. Access Date: 5 February 2022. <https://www.canada.ca/en/office-infrastructure/news/2021/07/canada-and-nova-scotia-invest-in-energy-efficiency-upgrades-for-five-community-buildings-in-halifax.html>

¹²³¹ Canada and Manitoba support green infrastructure and upgrades to community, culture, and recreation facilities, Infrastructure Canada (Manitoba) 23 July 2021. Access Date: 5 February 2022. <https://www.canada.ca/en/office-infrastructure/news/2021/07/canada-and-manitoba-support-green-infrastructure-and-upgrades-to-community-culture-and-recreation-facilities.html>

¹²³² News release: Canada Opens Call for Studies on Carbon Capture Technologies, Natural Resources Canada (Ottawa) 9 August 2021. Access date: 10 November 2021. <https://www.canada.ca/en/natural-resources-canada/news/2021/08/canada-opens-call-for-studies-on-carbon-capture-technologies.html>

¹²³³ Exclusive Canada pushes to build 2 new carbon capture hubs - gov't document, Reuters (Winnipeg/Calgary) 30 August 2021. Access date: 9 November 2021. <https://www.reuters.com/world/americas/exclusive-canada-pushes-build-2-new-carbon-capture-hubs-document-2021-08-30/>

¹²³⁴ Prime Minister Trudeau announces enhanced and ambitious climate action to cut pollution at the COP26 summit, Office of the Prime Minister (Ottawa) 1 November 2021. Access date: 10 November 2021. <https://pm.gc.ca/en/news/news-releases/2021/11/01/prime-minister-trudeau-announces-enhanced-and-ambitious-climate>

On 4 November 2021, Canada was a signatory to the Statement of International Public Support for the Clean Energy Transition at the 2021 United Nations Climate Change Conference in Glasgow, pledging to accelerate adoption of clean and renewable energy and ending investment in unabated fossil fuel production globally.¹²³⁵

On 5 November 2021, Minister of Natural Resources Jonathan Wilkinson announced CAD500,000 in a new partnership with the International Renewable Energy Agency to support the transition of remote communities to renewable energy.¹²³⁶

On 13 January 2022, the International Energy Agency (IEA) conducted its first in-depth review of Canada since 2015.¹²³⁷ The report praises Canada's ambitious policy plans, and the carbon pricing schemes and the energy technology innovation it has developed to do so, including "carbon capture, utilization and storage (CCUS); hydrogen; and nuclear small modular reactors (SMRs)." Based on current policy plans, the IEA makes the following relevant recommendations: work with provincial governments to create clear, net-zero plans for 2050 and energy efficiency, especially for key energy sectors (e.g., "transport, oil and gas, buildings, industry") and "increasing federal funding to the research and development on clean energy technology" to ensure both the success of their own policy plans and their status as a strong competitor in the energy export market.

Canada has fully committed to accelerate renewable energy and other net zero emission energy deployment. Canada is willing to allocate several different funds to its energy sector as part of its commitment to accelerate renewable energy deployment and other net zero emissions. At the United Nations Climate Change Conference in Glasgow Canada made a strong commitment to accelerate adoption of clean and renewable energy and ending investment in unabated fossil fuel production globally.

Thus, Canada receives a score of +1.

Analyst: Peter Lee

France: +1

France has fully complied with its commitment to accelerate renewable energy deployment and accelerate other zero emissions energy deployment.

On 24 August 2021, the Government Gazette announced a new framework that commits to the ban of advertisements for fossil fuel starting in July 2022, the declination of the Multi-year Energy Plan into regional objectives of renewable developments, the extension of the mandatory deployment of solar panels or vegetized roofs on commercial developments, offices, and parking lots, and support for hydroelectricity, hydrogen and biogas.¹²³⁸ The role of towns regarding the deployment of wind farms is reinforced.

On 8 September 2021, the French Government extended the timeline for achieving renovation work through the CEE Boost by two months. The CEE Boost: a subsidy scheme for citizens deploying energy efficiency

¹²³⁵ Statement of International Public Support for the Clean Energy Transition, UN Climate Change Conference UK 2021 (Glasgow) 4 November 2021. Access date: 10 November 2021. <https://ukcop26.org/statement-on-international-public-support-for-the-clean-energy-transition/>

¹²³⁶ News release: Canada Invests in a New Global Initiative for Transitioning Remote Communities to Renewable Energy, Natural Resources Canada (Hamilton) 5 November 2021. Access date: 10 November 2021. <https://www.canada.ca/en/natural-resources-canada/news/2021/11/canada-invests-in-a-new-global-initiative-for-transitioning-remote-communities-to-renewable-energy.html>

¹²³⁷ Canada 2022: Energy Policy Review, International Energy Agency (Paris) 13 January 2022. Access date: 30 January 2022. <https://iea.blob.core.windows.net/assets/7ec2467c-78b4-4c0c-a966-a42b8861ec5a/Canada2022.pdf>

¹²³⁸ Law of August 22, 2021 on the fight against climate change and strengthening resilience to its effects, Republic of France (Paris) 24 August 2021. Translation provided by Analyst. Access Date: 20 November 2021. <https://www.vie-publique.fr/loi/278460-loi-22-aout-2021-climat-et-resilience-convention-citoyenne-climat>

measures in their household.¹²³⁹ This initiative is aiming at supporting citizens to finance heating systems overhaul, increase thermal isolation or global renovation.¹²⁴⁰

On 30 September 2021, the National Hydrogen Council held its third meeting in order to discuss the execution of the National Strategy for the Development of Carbon-free Hydrogen, adopted on 8 September 2020.¹²⁴¹ Economy, Finance and Recovery Minister Bruno Le Maire and Ecological Transition Minister Barbara Pompili reaffirmed France's commitment to develop decarbonized hydrogen.¹²⁴²

On 7 October 2021, the Ministry of Ecological Transition announced 10 measures for developing wind farms.¹²⁴³ It includes instructions to map zones suitable for the development of wind farms, the creation of a wind energy mediator in the Ministry for Ecological Transition, the setting up of regional committees for energy and measures to make citizen engagement in wind energy projects easier.¹²⁴⁴

On 12 October 2021, President Emmanuel Macron announced the France 2030 investment plan, which strives to develop France's industrial competitiveness and future technologies.¹²⁴⁵ Among the EUR30 billion prepared for France 2030, 12 will be dedicated to decarbonizing the economy, with 8 solely devoted to the energy sector. EUR2 billion will be added to complement the existing EUR7 billion hydrogen strategy.¹²⁴⁶ EUR1 billion will be invested to develop small modular reactors (SMR), and EUR500 million will be invested toward breakthrough technologies in renewable energies.

On 18 October 2021, the French Government launched Innovative Solutions and Technologies for Batteries' call for projects as part of the 4th Future Investments Program and the plan 'France Relance'.¹²⁴⁷ This call aims at supporting projects dedicated to creating an integrated value chain for batteries, by supporting R&D, innovation and industrial deployment. Operated by the State and BPI France, the call for projects will run until 10 January 2023.

On 2 November 2021, France joined South Africa, Germany, the United States, United Kingdom and the European Union governments to launch the International Partnership for a Fair Energy Transition, aimed at

¹²³⁹ Energy saving boost (EEC): a two-month period to benefit from the aid, Ministry of Economy Finances, and Recovery (Paris) 9 September 2021. Translation provided by Analyst. Access Date: 20 November 2021. <https://www.economie.gouv.fr/coup-de-pouce-economies-energie-cee-delai-deux-mois-beneficier-aide#>

¹²⁴⁰ "Energy boost" bonuses, Ministry of Economy, Finances and Recovery (Paris) 9 November 2021. Translation provided by Analyst. Access Date: 20 November 2021. <https://www.economie.gouv.fr/cedef/coup-pouce-energie>

¹²⁴¹ France must become the world "leader" in green hydrogen, Government of France (Paris) 1 October 2021. Translation provided by Analyst. Access Date: 20 November 2021. <https://www.gouvernement.fr/la-france-doit-devenir-le-leader-mondial-de-l-hydrogene-vert>

¹²⁴² [Video] Meeting of the National Hydrogen Council Thursday, September 30, at Bercy, Ministry of Economy, Finances and Recovery (Paris) 30 September 2021. Translation provided by Analyst. Access Date: 20 November 2021. <https://www.economie.gouv.fr/direct-video-conseil-national-hydrogene>

¹²⁴³ [Video] Meeting of the National Hydrogen Council Thursday, September 30, at Bercy, Ministry of Economy, Finances and Recovery (Paris) 7 October 2021. Translation provided by Analyst. Access Date: 20 November 2021. <https://www.gouvernement.fr/des-mesures-pour-un-developpement-maitrise-de-l-eolien>

¹²⁴⁴ Measures for controlled development of wind power, Government of France (Paris) 07 October 2021. Translation provided by Analyst. Access Date: 20 November 2021. <https://www.gouvernement.fr/des-mesures-pour-un-developpement-maitrise-de-l-eolien>

¹²⁴⁵ France 2030: an investment plan for the France of tomorrow, Government of France (Paris) 13 October 2021. Translation provided by Analyst. Access Date: 20 November 2021. <https://www.gouvernement.fr/france-2030-un-plan-d-investissement-pour-la-france-de-demain>

¹²⁴⁶ Discours du Président de la République à l'occasion de la présentation du plan France 2030, Élysée (Paris) 12 October 2021. Translation provided Analyst. Access Date: 20 November 2021. <https://www.gouvernement.fr/sites/default/files/contenu/piece-jointe/2021/10/elysee-module-18543-fr.pdf>

¹²⁴⁷ Launch of the call for projects "innovative solutions and technologies for batteries," Building the France of Tomorrow (Paris) 18 October 2021. Translation provided by Analyst. Access Date: 21 October 2021. <https://www.economie.gouv.fr/plan-de-relance/lancement-appel-projets-solutions-technologies-innovantes-batteries>

helping South Africa to decarbonize its economy through cleaner energies.¹²⁴⁸ The countries involved will engage USD8.5 billion in the next three to five years through subventions, loans, investments and shared risk instruments, in order to support South Africa's transition from coal to renewable energies.¹²⁴⁹

On 3 November 2021, the Ministry of Ecological Transition announced 10 measures for the development of solar energy.¹²⁵⁰ It includes the setting up of support plans for deploying solar panels on buildings and wastelands, mandatory solar panels on warehouses, hangars and parking lots, regular bids with dedicated budgets for roof solar panels, the target of deploying 1,000 photovoltaic projects on public properties, the relief of administrative procedures for small-scale projects, support for project developers and collectivities, the lowering of grid connection costs for small-scale projects and the creation of a Solar Cities and Solar Departments label.¹²⁵¹

On 4 November 2021, Minister of Europe and Foreign Affairs Jean-Yves Le Drian announced that he would meet COP26 President Alok Sharma to defend France's priorities regarding the summit: the launching of the Green Grids Initiative and the deployment of an initiative for favoring private investments for solar energy.¹²⁵² Minister Le Drian participated in an event on nuclear and renewable energy complementarity, as well as an event focusing on the development of the decarbonized hydrogen French industry, along with Engie, GRTgaz and Lhyfe.

On 4 November 2021, Minister Pompili, Minister Delegate in Charge of Industry Agnès Pannier-Runacher and industry leaders signed a sector contract for new energy systems to take the acceleration of renewable deployments as an opportunity for improving France's industrial competitiveness.¹²⁵³ The renewed sector contract reunites the state, industrialists, and union around reciprocal engagements, thanks to the consultation of more than 600 contributors.

On 5 November 2021, the Ministry of Ecological Transition announced 10 measures to favor the development of "citizen renewable energies," organized around three main axes: accelerating local governance projects, accompanying projects and their communication and simplifying project development and financing.¹²⁵⁴ The Minister's target is to reach 1,000 new locally governed renewable projects associating collectivities and citizens between now and 2028.

¹²⁴⁸ Joint Communiqué on the International Partnership for a Just Energy Transition, Elysée (Paris) 2 November 2021. Translation provided by Analyst. Access Date: 23 November 2021. <https://www.elysee.fr/emmanuel-macron/2021/11/02/communique-conjoint-sur-le-partenariat-international-pour-une-transition-energetique-juste>

¹²⁴⁹ France, Germany, UK, US and EU launch ground-breaking International Just Energy Transition Partnership with South Africa, European Commission (Brussels) 02 November 2021. Access Date: 20 November 2021. https://ec.europa.eu/commission/presscorner/detail/en/IP_21_5768

¹²⁵⁰ 10 measures to accelerate photovoltaics, Ministry for the Ecological Transition (Paris) 3 November 2021. Translation provided by Analyst. Access Date: 20 November 2021. <https://www.gouvernement.fr/10-mesures-pour-accelerer-le-photovoltaïque>

¹²⁵¹ Plan d'actions pour accélérer le développement du photovoltaïque, ministère de la Transition écologique (Paris) 3 November 2021. Translation provided by Analyst. Access Date: 20 November 2021. https://www.ecologie.gouv.fr/sites/default/files/21189_Plan-actions_PhotoVoltaire-1.pdf

¹²⁵² Climate – Participation of Jean-Yves Le Drian at COP26 (Glasgow, November 4, 2021), Ministry of Europe and Foreign Affairs (Paris) 4 November 2021. Translation provided by Analyst. Access Date: 20 November 2021. <https://www.diplomatie.gouv.fr/fr/politique-etrangere-de-la-france/climat-et-environnement/actualites-et-evenements/2021/article/climat-participation-de-jean-yves-le-drian-a-la-cop26-glasgow-04-11-21>

¹²⁵³ CSF New Energy Systems: Signature of the New Sector Contract, national council of industry (Paris) 4 November 2021. Translation provided by Analyst. Access Date: 23 November 2021. <https://www.conseil-national-industrie.gouv.fr/actualites/comites-strategiques-de-filiere/nouveaux-systemes-energetiques/csf-nouveaux-systemes-energetiques-signature-du-nouveau-contrat-de-filiere>

¹²⁵⁴ 10 measures for the development of citizen renewable energies, Ministry for the Ecological Transition (Paris) 5 November 2021. Translation provided by Analyst. Access Date: 23 November 2021. <https://www.ecologie.gouv.fr/10-mesures-developpement-des-energies-renouvelables-citoyennes>

On 15 November 2021, Minister Pompili announced that France will stop financing foreign fossil fuel projects starting at the end of 2022.¹²⁵⁵ Minister Pompili reiterated that France joined the international coalition Beyond Oil and Gas, aiming at progressively phasing out fossil fuel production.

On 10 December 2021, Minister Pompili and Minister Delegate Pannier-Runacher announced an investment of EUR420 million for the development of industrial biotechnologies and the manufacturing of biosourced products, in order to replace petroleum products, it includes biofuels, and synthetic fuels produced from renewable energies.¹²⁵⁶

On 14 December 2021, France and the United States inaugurated the Bilateral Partnership France-United States for Clean Energies in Paris, an initiative planned at the United Nations Climate Change Conference.¹²⁵⁷ The goals of the partnership are to discuss policies and innovation in clean energies, and exchange on diplomatic efforts to accelerate the energy transition. The next partnership meeting is planned for 2022 in Washington DC.

France has fully complied with its commitment to accelerate renewable and other net zero energy deployment, by taking actions to favorize the deployment of decarbonized energy production at the local, national and international levels. France has committed to allocate several different funds toward accelerating renewable energy sources. France has also signed multiple agreements with other G7 members such as the United States, United Kingdom and Germany and other non-G7 members such as South Africa.

Thus, France receives a score of +1.

Analyst: Thomas Houlié

Germany: +1

Germany has fully complied with its commitment to accelerate renewable energy deployment and accelerate other zero emissions energy deployment.

On 25 August 2021, the German government outlined preliminary plans to refurbish and retrofit government buildings to increase energy efficiency and usage of renewable energy as a part of Climate Action Plan 2030.¹²⁵⁸

On 22 September 2021, Andreas Feicht, State Secretary for Economic Affairs and Energy, attended an informal meeting with energy ministers to discuss the 'Fit for 55' legislation to revise the new proposals submitted by the European Union in regard to higher energy savings and increasing the proportion of renewable energy by 2030.¹²⁵⁹

¹²⁵⁵ France stops foreign public funding of fossil fuel projects, Government of France (Paris) 15 November 2021. Translation provided by Analyst. Access Date: 21 November 2021. <https://www.gouvernement.fr/la-france-cesse-les-financements-publics-a-l-etranger-de-projets-d-energies-fossiles>

¹²⁵⁶ Investments for the future: Barbara Pompili and Agnès Pannier-Runacher announce 420 million euros to accelerate the development of industrial biotechnologies and the manufacture of biosourced products in France, Ministry for the Ecological Transition (Paris) 10 December 2021. Translation provided by Analyst. Access Date: 2 January 2022. <https://www.ecologie.gouv.fr/investissements-davenir-barbara-pompili-et-agnes-pannier-runacher-annoncent-420-millions-deuros>

¹²⁵⁸ A role model for climate-neutral buildings, The Federal Government (Berlin) 25 August 2021. Access date: 27 November 2021. <https://www.bundesregierung.de/breg-en/news/climate-neutral-federal-government-buildings-1953906>

¹²⁵⁹ State Secretary Feicht discusses energy-policy aspects of the 'Fit for 55' package of measures with European Energy Ministers, Federal Ministry for Economic Affairs and Climate Action (Berlin) 22 September 2021. Access Date: 31 January 2022. <https://www.bmwi.de/Redaktion/EN/Pressemitteilungen/2021/09/20210922-state-secretary-feicht-discusses-energy-policy-aspects-of-the-fit-for-55-package-of-measures-with-european-energy-ministers.html>

On 14 October 2021, the German government will eliminate the surcharge on electricity generated from renewable sources, designed to fund renewable energy generation projects, by 2022.¹²⁶⁰ The typical household is projected to save EUR132 from this measure.

On 2 November 2021, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) released a press statement detailing an agreement between the German and South African delegations at the United Nations Climate Change Conference in Glasgow.¹²⁶¹ The agreement outlined plans for Germany to give EUR700 million to South Africa in phasing out the use of coal and promote investment in developing renewable energy sources.

On 23 November 2021, an agreement signed by the Danish national grid operator Energinet with Belgium's Eila (a transmission systems operator) and Germany's 50Hertz (a high-voltage grid operator) to build power grid links in facilitating the export of Danish green energy to mainland Europe.¹²⁶²

On 24 November 2021, the Government of Germany announced an agreement on climate action between the parties of the incoming German government (Social Democrats, Greens and Free Democrats) to install 200 gigawatts capacity of solar electricity generation and 30 gigawatts capacity of offshore wind generation by 2030, raising the targeted proportion of renewable energy as a part of Germany's gross energy demand from 65 per cent to 80 per cent by 2030.¹²⁶³

On 25 November 2021, it was reported that a supplementary budget by the incoming German government allocated EUR50 billion toward the country's climate action fund.¹²⁶⁴ The funding will help make homes more energy efficient and reduce emissions.

On 13 January 2022, Robert Habeck, Minister of Economic Affairs and Climate Action, announced that Germany will become climate-neutral by the year of 2045 and will boost its share of renewable energy by 80 per cent by 2030.¹²⁶⁵

Germany has strongly committed towards increasing its renewable energy deployments and other net zero emission energy deployments. Germany has taken actions both domestically and internationally. Germany has allocated several different funds towards increasing renewable energy sources domestically but has also helped other nations such as South Africa. Germany has also cooperated with other countries such as Denmark.

Thus, Germany receives a score of +1.

Analyst: Peter Lee

¹²⁶⁰ EXCLUSIVE Germany to slash renewable power fee to ease burden of higher energy bills – sources, Reuters (Toronto) 14 October 2021. Access date: 27 November 2021. <https://www.reuters.com/business/energy/exclusive-germany-slash-renewable-power-fee-ease-burden-higher-energy-bills-2021-10-14/>

¹²⁶¹ Germany supports South Africa in coal phase-out, Reuters (Toronto) Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (Berlin) 2 November 2021. Access date: 17 January 2022. <https://www.bmu.de/en/pressrelease/deutschland-unterstuetzt-suedafrika-beim-kohleausstieg>

¹²⁶² Denmark signs deals to facilitate wind power links to Germany and Belgium, Reuters (Toronto) 23 November 2021. Access date: 27 November 2021. <https://www.reuters.com/markets/europe/denmark-signs-deals-facilitate-wind-power-links-germany-belgium-2021-11-23/>

¹²⁶³ Germany hits renewable accelerator, targets coal exit by 2030, Reuters (Toronto) 24 November 2021. Access date: 27 November 2021. <https://www.reuters.com/markets/commodities/german-coalition-commits-faster-decarbonisation-2021-11-24/>

¹²⁶⁴ Germany to pump more than 50 bln euros into climate fund – sources, Reuters (Toronto) 25 November 2021. Access date: 27 November 2021. <https://www.reuters.com/world/europe/germany-pump-more-than-50-bln-eurs-into-climate-fund-sources-2021-11-25/>

¹²⁶⁵ Habeck presents Germany's current climate action status: "Need to triple the rate of emission reductions", Federal Ministry of Economic Affairs and Climate Action (Berlin) 13 January 2022. Access Date: 31 January 2022. <https://www.bmwi.de/Redaktion/EN/Pressemitteilungen/2022/20220111-habeck-presents-germanys-current-climate-action-status-need-to-triple-the-rate-of-emission-reductions.html>

Italy: 0

Italy has partially complied with its commitment to accelerate renewable energy deployment and accelerate other zero emissions energy deployment.

On 20 September 2021, the Ministry of Ecological Transition issued a request for proposals for their Green Ports Initiative.¹²⁶⁶ The goal of the project is to reduce carbon dioxide emissions in ports by implementing systems to generate energy from renewable sources, and the amount of EUR270 million of expenditure expected for the project.

On 15 December 2021, the Ministry of Ecological Transition invested EUR200 million towards greening 19 small islands.¹²⁶⁷ This action will accelerate renewable energy deployment by increasing renewable energy production on the islands.

On 15 December 2021, the Ministry of Ecological Transition pledged to develop hydrogen supply chains and to support the research, development and regulation needed to facilitate the use and transport of hydrogen fuel.¹²⁶⁸ This action will contribute to increasing the use of zero emissions fuels by providing the technology and infrastructure needed for successful implementation of hydrogen fuels.

On 15 December 2021, the Ministry of Ecological Transition pledged to develop infrastructure for 21,250 recharging stations and renew transportation fleets with vehicles that use zero emissions fuels.¹²⁶⁹ This action will contribute to accelerating the use of zero emissions technologies in transport.

On 15 December 2021, the Ministry of Ecological Transition pledged to increase the share of Italy's energy produced by renewable sources through investment in developing small-scale energy distribution systems.¹²⁷⁰ This action will contribute to accelerating the use of zero emissions technologies by increasing investment in the infrastructure needed for its implementation.

Italy has partially complied with its commitment to accelerate renewable and other zero emissions energy deployment. Italy has taken strong actions to reduce the carbon dioxide emissions of their port infrastructure and increase their ports' usage of renewable energy sources. Italy has taken strong action by investing EUR200 million in renewable deployment on 19 of their islands. Additionally, Italy has taken weak action to accelerate zero emissions deployment by pledging to develop hydrogen supply chains and building charging infrastructure and fuel transportation infrastructure with zero emissions fuels. Lastly, Italy has taken weak action to accelerate the implementation of renewable energy by pledging to invest in developing small scale energy distribution systems for renewable energy.

¹²⁶⁶ Il Mite starts the PNRR with the Green Ports projects, Ministry of Ecological Transition (Rome) 20 September 2021.

Translation provided by Analyst. Access date: 26 November 2021. <https://www.mite.gov.it/pagina/il-mite-avvia-il-pnrr-con-il-progetto-green-ports>

¹²⁶⁷ PNRR, 200 million to make 19 smaller islands more sustainable, Ministry of Ecological Transition (Rome) 15 December 2021.

Translation provided by Analyst. Access date: 17 January 2022. <https://www.mite.gov.it/comunicati/pnrr-200-milioni-rendere-piu-sostenibili-19-isole-minori>

¹²⁶⁸ MEASURE 3 – Promote the production, distribution and end uses of hydrogen, Ministry of Ecological Transition (Rome) 15

December 2021. Translation provided by Analyst. Access date: 17 January 2021. <https://www.mite.gov.it/pagina/misura-3-promuovere-la-produzione-la-distribuzione-e-gli-usi-finali-dell-idrogeno>

¹²⁶⁹ MEASURE 4 – Developing more sustainable local transport, Ministry of Ecological Transition (Rome) 15 December 2021.

Translation provided by Analyst. Access Date: 17 January 2022. <https://www.mite.gov.it/pagina/misura-4-sviluppare-un-trasporto-locale-piu-sostenibile>

¹²⁷⁰ MEASURE 1 – Increase the share of energy produced from renewable energy sources, Ministry of Ecological Transition

(Rome) 15 December 2021. Translation provided by Analyst. Access Date: 17 January 2022.

<https://www.mite.gov.it/pagina/misura-1-incrementare-la-quota-di-energia-prodotta-da-fonti-di-energia-rinnovabile>

Thus, Italy receives a score of 0.

Analyst: Emilio Ortelli

Japan: +1

Japan has fully complied with its commitment to accelerate renewable energy deployment and accelerate other zero emissions energy deployment.

On 18 June 2021, the Ministry of Economy, Trade and Industry (METI), along with related ministries and agencies, updated the Green Growth Strategy Through Achieving Carbon Neutrality in 2050.¹²⁷¹ METI added policy measures, taking into consideration how carbon neutrality could improve people's lives, and addressed how to implement renewable and zero emissions tech to contribute to decarbonization goals.¹²⁷²

On 21 June 2021, Minister of Economy, Trade and Industry Hiroshi Kajiyama pledged to offer USD10 billion to 10 Southeastern Asian countries for developing renewable and liquefied natural gas projects.¹²⁷³ As part of this initiative, called Asian Energy Transition, Minister Kajiyama proposed that Japan could help countries in the region to design their roadmaps for reaching carbon neutrality, as well as sharing technological developments and deployment support.

On 22 June 2021, Minister Kajiyama announced the launch of the Asia Carbon Capture, Utilization and Storage (CCUS) Network, a new platform that aims at promoting overseas projects, and sharing knowledge and best practices for using CCUS technologies.¹²⁷⁴ The CCUS Network regroups all members of the Association of Southeast Asian Nations, Japan, the United States and Australia, and over 100 companies, research, and international organizations.

On 15 July 2021, the New Energy and Industrial Technology Development Organization started 14 R&D projects for geothermal power generation.¹²⁷⁵ The projects are grouped under three items: the evaluation of Japanese domestic geothermal resources, the development of exploration technologies for supercritical resources and the development of geothermal power generation technologies.

On 20 July 2021, Japanese government's Independent Administrative Institution Japan Oil, Gas and Metals National Corporation, Woodside Energy, Marubeni Corp., Hokuriku Electric Power Company, and Kansai Electric Power company signed a joint research agreement for conducting a feasibility study regarding the development of a clean ammonia supply chain from Australia to Japan.¹²⁷⁶ This agreement comes a few days

¹²⁷¹ "Green Growth Strategy Through Achieving Carbon Neutrality in 2050" Formulated, Ministry of Economy, Trade and Industry (Tokyo) 18 June 2021. Access Date: 21 November 2021. https://www.meti.go.jp/english/press/2021/0618_002.html

¹²⁷² METI Issues New Green Growth Strategy Through Achieving Carbon Neutrality, Japan Atomic Industrial Forum (Tokyo) 24 June 2021. Access Date: 21 November 2021. <https://www.jaif.or.jp/en/meti-issues-new-green-growth-strategy-through-achieving-carbon-neutrality/>

¹²⁷³ Japan proposes \$10 bil in finance for ASEAN renewables, LNG to aid energy transition, S&P Global (New York City) 21 June 2021. Access Date: 21 November 2021. <https://www.spglobal.com/platts/en/market-insights/latest-news/natural-gas/062121-japan-proposes-10-bil-in-finance-for-asean-renewables-lng-to-aid-energy-transition>

¹²⁷⁴ "Asia CCUS Network" has launched, Ministry of Economy, Trade and Industry (Tokyo) 22 June 2021. Access Date: 21 November 2021. https://www.meti.go.jp/english/press/2021/0622_001.html

¹²⁷⁵ Started research and development to expand the introduction of geothermal power generation, National Research and Development Corporation (Tokyo) 15 July 2022. Translation provided by Google Translate. Access Date: 21 November 2022. https://www.nedo.go.jp/news/press/AA5_101460.html

¹²⁷⁶ Feasibility Study on Establishing a Clean Fuel Ammonia Supply Chain from Australia to Japan, Japan Oil, Gas and Metals National Corporation (Tokyo) 20 July 2021. Access Date: 21 November 2021. https://www.jogmec.go.jp/english/news/release/news_15_000001_00022.html

after the 15 July 2021 Japan-Australia Ministerial Economic Dialogue, in which both countries renewed their will to collaborate on CCUS, clean hydrogen and clean ammonia.¹²⁷⁷

On 26 July 2021, METI revised the roadmap for carbon recycling technologies.¹²⁷⁸ The revision considers the significant progress made in the areas covered by the roadmap, as well as the 2050 carbon neutrality objective. Compared to the original roadmap published in 2019, the revision integrates new technologies such as direct air capture and synthetic fuels, brings forward the beginning of widespread adoption of carbon recycling products to 2040, and adds efforts regarding international cooperation.

On 26 August 2021, the New Energy and Industrial Technology Development Organization announced the launch of research projects on 11 themes related to hydrogen, as part of the Green Innovation Fund Project.¹²⁷⁹ The projects funded focus on the building of a large-scale hydrogen supply chain and the development of green hydrogen production projects.¹²⁸⁰

On 1 September 2021, during the visit of John Kerry, United States Special Presidential Envoy for Climate, to Japan, both countries issued a joint statement to express their intention to further cooperate on innovation on areas such as renewable energy, energy storage, smart grid, energy efficiency, low carbon hydrogen, carbon capture, utilization, storage and recycling of carbon, industrial decarbonization and advanced nuclear power.¹²⁸¹ The two sides agreed on the importance of cooperating with developing countries for supporting their emission reduction efforts.¹²⁸²

On 8 September 2021, METI signed a memorandum of cooperation with Gazprom regarding hydrogen, ammonia, carbon capture and storage, carbon utilization and recycling.¹²⁸³ In addition, the two countries' governments are working on a science and technology cooperation program from 2021 to 2023, focused on private partnerships for hydrogen projects.

On 14 September 2021, METI formulated an R&D and Social Implementation Plan for hydrogen use in steelmaking processes.¹²⁸⁴ The plan aims at developing hydrogen reduction technology using blast furnaces, and direct hydrogen reduction technology through joint public and private research and development. The strategy, implemented with the support of the New Energy and Industrial Technology Development Organization, strives at lowering the emission of the carbon-intensive steel industry.

¹²⁷⁷ Japan-Australia Ministerial Economic Dialogue, Ministry of Economy, Trade and Industry (Tokyo) 15 July 2021. Access Date: 21 November 2021. <https://www.meti.go.jp/press/2021/07/20210715008/20210715008-1.pdf>

¹²⁷⁸ Roadmap for carbon recycling technologies revised, Ministry of Economy, Trade and Industry (Tokyo) 26 July 2021. Access Date: 21 November 2021. https://www.meti.go.jp/english/press/2021/0726_003.html

¹²⁷⁹ Roadmap for Carbon Recycling Technologies Revised, Ministry of Economy, Trade and Industry (Tokyo) 26 August 2021. Translation provided by Google Translate. Access Date: 21 November 2022. https://www.nedo.go.jp/news/press/AA5_101471.html

¹²⁸⁰ Green Innovation Fund Project Starts Demonstration Research Project on Hydrogen as the First Projects, National Research and Development Coordination (Tokyo) 26 August 2021. Translation provided by Google Translate. Access Date: 21 November 2022. https://www.nedo.go.jp/news/press/AA5_101471.html

¹²⁸¹ Japan-U.S. Joint Media Statement on the occasion of Special Presidential Envoy for Climate John Kerry's visit to Japan, Ministry of Foreign Affairs (Tokyo) 1 September 2021. Access Date: 21 November 2021. https://www.mofa.go.jp/press/release/press6e_000323.html

¹²⁸² Meeting between Foreign Minister MOTEGI and The Honorable John F. Kerry, United States Special Presidential Envoy for Climate, Ministry of Foreign Affairs (Tokyo) 31 August 2021. Access Date: 21 November 2021. https://www.mofa.go.jp/press/release/press6e_000322.html

¹²⁸³ METI and Gazprom Sign a Memorandum of Cooperation on Hydrogen, Ammonia, CCS, and CCU/Carbon Recycling, Ministry of Economy, Trade and Industry (Tokyo) 8 September 2021. Access Date: 21 November 2021. https://www.meti.go.jp/english/press/2021/0908_001.html

¹²⁸⁴ An R&D and Social Implementation Plan for "Hydrogen Use in Steelmaking Processes" Projects Formulated, Ministry of Economy, Trade and Industry (Tokyo) 14 September 2021. Access Date: 21 November 2021. https://www.meti.go.jp/english/press/2021/0914_001.html

On 16 September 2021, during the Eastern Economic Forum, METI signed a Memorandum of Cooperation with Russian company Rosneft regarding carbon management.¹²⁸⁵ The Ministry and Rosneft will continue their cooperation in order to bring Rosneft and Japanese companies to build less carbonized projects, and promote synergies in technologies like hydrogen, ammonia, carbon capture, storage and utilization.¹²⁸⁶

On 1 October 2021, the New Energy and Industrial Technology Development Organization started a call for applicants for two projects: cost reductions for offshore wind power generation and next-generation solar cell development.¹²⁸⁷ Both projects will be implemented using the Green Innovation Fund established by the New Energy and Industrial Technology Development Organization.

On 8-12 October 2021, METI launched the Beyond-Zero Week 2021 in Tokyo in which 17,000 participants attended the event's 8 conferences, where ministers and experts from various countries were invited to discuss challenges, paths and methods to accelerate the transition to global carbon neutrality.¹²⁸⁸

On 22 October 2021, the Cabinet of Japan approved the Sixth Strategic Energy Plan after deliberations by the Advisory Committee for Natural Resources and Energy.¹²⁸⁹ In the strategy, the Government is aiming for 36 to 38 per cent of renewable energy capacity by the end of 2030 (up from 22 to 24 per cent in the previous plan), and a decrease of thermal power capacity to 41 per cent (down from 56 per cent in the previous plan).¹²⁹⁰ The contribution of nuclear energy is expected to increase to 20 to 22 per cent by 2030, the same value as in the previous strategy.

On 28 October 2021, State Minister of Economy, Trade and Industry Ishii Masahiro attended the 22nd Council of the International Renewable Energy Agency in Abu Dhabi as chair.¹²⁹¹ Minister Ishii stated that Japan will continue its efforts toward maximal introduction of renewable energy.

On 2 November 2021, Prime Minister Fumio Kishida declared as part of the United Nations Climate Change Conference that Japan will commit USD10 billion for developing countries over the next five years.¹²⁹² Prime Minister Kishida mentioned that Japan will spend USD100 million for the adaptation of thermal power plants to carbon-free fuels such as ammonia and hydrogen.¹²⁹³

¹²⁸⁵ METI and Rosneft Sign a Memorandum of Cooperation on Carbon Management, Ministry of Economy, Trade and Industry (Tokyo) 17 September 2021. Access Date: 21 November 2021. https://www.meti.go.jp/english/press/2021/0917_004.html

¹²⁸⁶ Rosneft and Japan's METI to Develop Cooperation in Carbon Management, Rosneft (Moscow) 16 September 2021. Access Date: 21 November 2021. <https://www.rosneft.com/press/releases/item/207793>

¹²⁸⁷ Call Starts for Applicants for "Cost Reductions for Offshore Wind Power Generation" Projects, Ministry of Economy, Trade and Industry (Tokyo) 01 October 2021. Access Date: 21 November 2021. https://www.meti.go.jp/english/press/2021/1001_007.html

¹²⁸⁸ Results of Tokyo "Beyond-Zero" Week 2021, Ministry of Economy, Trade and Industry (Tokyo) 20 October 2021. Access Date: 21 November 2021. <https://www.mofa.go.jp/files/100256813.pdf>

¹²⁸⁹ Cabinet Decision on the Sixth Strategic Energy Plan, Ministry of Economy, Trade and Industry (Tokyo) 22 October 2021. Access Date: 21 November 2021. https://www.meti.go.jp/english/press/2021/1022_002.html

¹²⁹⁰ Japan Govt Approves Its Sixth Strategic Energy Plan, Seeks To Increase Renewables, Republicworld.com (Delhi) 22 October 2021. Access Date: 21 November 2021. <https://www.republicworld.com/world-news/rest-of-the-world-news/japan-govt-approves-its-sixth-strategic-energy-plan-seeks-to-increase-renewables.html>

¹²⁹¹ State Minister Ishii Attends the 22nd Council of the International Renewable Energy Agency (IRENA), Ministry of Economy, Trade and Industry (Tokyo) 28 October 2021. Access Date: 21 November 2021. https://www.meti.go.jp/english/press/2021/1028_001.html

¹²⁹² Japan's Kishida Pledges Up to \$10 Billion in New Climate Finance, Bloomberg (New York) 2 November 2021. Access Date: 21 November 2021. <https://www.bloomberg.com/news/articles/2021-11-02/japan-s-kishida-pledges-up-to-10-billion-in-new-climate-finance>

¹²⁹³ Japan pledges extra \$10 billion to bridge climate financing gap at COP26, HIS Markit (London) 2 November 2021. Access Date: 21 November 2021. <https://ihsmarkit.com/research-analysis/japan-pledges-extra-10-billion-to-bridge-climate-finance-gap-a.html>

On 25 November 2021, METI and Vietnam's Ministry of Industry and Trade signed the Joint Statement for Cooperation on Energy Transition to Carbon Neutrality.¹²⁹⁴ Both parties committed to support Japanese private investments for clean energy projects, financial and technical supports for low-carbon energies and assistance for formulating Vietnam's energy transition roadmaps.

On 11 December 2021, the New Energy and Industrial Technology Development Organization issued updated guidelines for photovoltaic capacities.¹²⁹⁵ The directions, made to ensure the sustainability of new installations, focuses on agrivoltaics, on slope and floating solar panels.

On 28 December 2021, the New Energy and Industrial Technology Development Organization announced its support for R&D on solar cells through the Green Innovation Fund Project.¹²⁹⁶ The program includes two items: the development of infrastructures for R&D projects on next-generation solar cell, and the improvement of photovoltaic technologies application scalability.

On 7 January 2022, the New Energy and Industrial Technology Development Organization announced the Fuel Ammonia Supply Chain Construction Project.¹²⁹⁷ With a budget of USD524 million, the project aims at developing green ammonia production technologies, and supporting projects for ammonia use in thermal power plants. It targets a production cost in "the high JPY10 range per Nm³" by 2030.

Japan has committed both domestically and internationally, through signing joint partnerships with other G7 and non G7 members, allocating funds internationally and accelerating the deployment of renewables and net zero energy. Japan has committed to allocate funds in order to help other non-G7 members in Southeastern Asia to utilize renewable and zero emissions technologies. Japan has also signed multiple agreements with other nations as part of its commitment towards these goals.

Thus, Japan receives a score of +1.

Analyst: Thomas Houlie

United Kingdom: +1

The United Kingdom has fully complied with its commitment to accelerate renewable energy deployment and accelerate other zero emissions energy deployment.

On 25 August 2021, the Department for Business, Energy, and Industrial Strategy awarded a collective GBP4 million to 24 projects designed to increase production of biomass in the UK.¹²⁹⁸ This biomass can then be used to facilitate green production and create green energy.¹²⁹⁹

¹²⁹⁴ Joint Statement between the Ministry of Trade, Economy and Industry of Japan and the Ministry of Industry and Trade of Viet Nam for Cooperation on Energy Transition to carbon neutrality, Ministry of Economy, Trade and Industry (Tokyo) 25 November 2021. Access Date: 2 January 2022. <https://www.meti.go.jp/press/2021/11/20211125005/20211125005-1.pdf>

¹²⁹⁵ Regarding the provisions of the 2021 version of the technical standards for the design and construction of solar power generation systems installed on slopes, farming, and water., Ministry of Economy, Trade and Industry (Tokyo) 20 December 2021. Translation provided by Google Translate. Access Date: 15 January 2022.

https://www.meti.go.jp/policy/safety_security/industrial_safety/oshirase/2021/12/20211220-1.html

¹²⁹⁶ Started development of next-generation solar cells in the Green Innovation Fund Project, National Research and Development Corporation (Tokyo) 28 December 2021. Translation provided by Google Translate. Access Date: 15 January 2022. https://www.nedo.go.jp/news/press/AA5_101501.html

¹²⁹⁷ Started the Green Innovation Fund project "Building a supply chain for fuel ammonia," National Research and Development Corporation (Tokyo) 7 January 2022. Translation provided by Google Translate. Access Date: 15 January 2022. https://www.nedo.go.jp/news/press/AA5_101502.html

¹²⁹⁸ £4 million funding to boost UK biomass production, Department for Business, Energy and Industrial Strategy (London) 25 August 2021. Access Date: 8 January 2022. <https://www.gov.uk/government/news/4-million-funding-to-boost-uk-biomass-production>

On 7 October 2021, the Department for Business, Energy and Industrial Strategy unveiled plans to decarbonize the UK power system by 2035.¹³⁰⁰ The UK is planning to deploy offshore wind, hydrogen, solar, nuclear and onshore wind energy generation as well as carbon capture and storage. This plan accelerates the UK government's commitment to a fully decarbonized power system by 2050.

On 26 October 2021, the Department for Business, Energy and Industrial Strategy deployed the Nuclear Energy (Financing) Bill, a new funding model to attract increased amounts of private investment for new nuclear power projects.¹³⁰¹ Under this new funding model, consumers contribute to funding in the construction phase of a nuclear power project to give private investors certainty of returns on investment in new nuclear power projects.

On 24 November 2021, the UK government announced that it will invest GBP20 million per year into tidal power generation.¹³⁰² This is part of the fourth allocation round of the UK government's Contracts for Difference Scheme intended to help the Tidal Stream projects increase its ability to develop technology and lower costs. This will bring funding for the 2021 Contracts for Difference Scheme allocation round to GBP285 million. The government of the United Kingdom will also be investing GBP11 million to help distilleries pivot away from fossil fuels.¹³⁰³ Hydrogen and biogas will replace fossil fuels.

On 7 December 2021, the UK government invested GBP116 million towards zero emissions and renewable energy innovation in the UK, including for the development of technologies to absorb carbon dioxide emissions, replace diesel engines in boats with hydrogen power and research into green technologies for powering homes.¹³⁰⁴ The funding also directly supports research to improve carbon capture technology.

On 20 December 2021, the UK government launched a consultation on a proposed oil and gas climate checkpoint requiring future oil and gas licenses to pass a climate screening which ensures that the license complies with the UK's commitment to net zero emissions by 2050.¹³⁰⁵

On 20 December 2021, the UK government announced that it will invest GBP26 million to boost sustainable biomass production for power generation.¹³⁰⁶ Biomass innovators from across the UK can bid to receive portions of this funding to support increased production of sustainable biomass in the UK.

¹²⁹⁹ £4 million funding to boost UK biomass production, Department for Business, Energy and Industrial Strategy (London) 25 August 2021. Access Date: 8 January 2022. <https://www.gov.uk/government/news/4-million-funding-to-boost-uk-biomass-production>

¹³⁰⁰ Plans unveiled to decarbonise the UK power system by 2035, Department for Business, Energy & Industrial Strategy (London) 7 October 2021. Access date: 26 November 2021. <https://www.gov.uk/government/news/plans-unveiled-to-decarbonise-uk-power-system-by-2035>

¹³⁰¹ New finance model to cut cost of new nuclear power stations, Government of the United Kingdom (London) 26 October 2021. Access date: 26 November 2021. <https://www.gov.uk/government/news/funding-helps-uk-distilleries-fuel-a-greener-future>

¹³⁰² UK government announces biggest investment into Britain's tidal power, Department for Business, Energy & Industrial Strategy (London) 24 November 2021. Access date: 26 November 2021. <https://www.gov.uk/government/news/uk-government-announces-biggest-investment-into-britains-tidal-power>

¹³⁰³ Funding helps UK distilleries fuel a greener future, Department for Business, Energy & Industrial Strategy (London) 24 November 2021. Access date: 26 November 2021. <https://www.gov.uk/government/news/funding-helps-uk-distilleries-fuel-a-greener-future>

¹³⁰⁴ Government invests over £116 million to drive forward green innovation in the UK, Department for Business, Energy & Industrial Strategy (London) 7 December 2021. Access date: 17 January 2022. <https://www.gov.uk/government/news/government-invests-over-116-million-to-drive-forward-green-innovation-in-the-uk>

¹³⁰⁵ UK government seeks views on new oil and gas climate checkpoint, Department for Business, Energy & Industrial Strategy, Oil and Gas Authority (London) 20 December 2021. Access date: 17 January 2022. <https://www.gov.uk/government/news/uk-government-seeks-views-on-new-oil-and-gas-climate-checkpoint>

¹³⁰⁶ £26 million government funding to boost biomass in UK, Department for Business, Energy & Industrial Strategy (London) 20 November 2021. Access date: 17 January 2022. <https://www.gov.uk/government/news/26-million-government-funding-to-boost-biomass-in-uk>

On 29 December 2021, the UK government announced a cash boost of GBP19 million for the expansion of green energy powered heating networks.¹³⁰⁷ This will increase the use of renewable and other zero emission energy in the heating of homes and public buildings.

The UK has fully complied with its commitment to accelerate renewable and other zero emissions energy deployment. The UK has taken strong action to accelerate domestic renewable energy deployment by funding tidal energy infrastructure, planning to decarbonize power generation by 2035 using renewables, investing in green energy and investing in innovation in sustainable biomass production. The UK has taken strong action to accelerate implementation and production of domestic zero emissions energy by expanding green energy powered heating networks and investing GBP116 million in zero emissions energy innovation. Additionally, the UK took weak actions to deploy and produce other zero emissions energy by implementing a new financing model to increase private sector investment in nuclear energy and by investing GBP11 million into decarbonizing the distilling industry.

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

Analyst: Emilio Ortelli

United States: +1

The United States has fully complied with its commitment to accelerate renewable energy deployment and accelerate other zero emissions energy deployment.

On 24 June 2021, Secretary of Energy Jennifer M. Granholm and Canadian Minister of Natural Resources Seamus O'Regan released the North American Renewable Integration Study.¹³⁰⁸ The study “assesses opportunities to modernize and decarbonize the North American power system through the integrated planning and operation of generation and transmission infrastructures to meet end-use demand.”¹³⁰⁹

On 7 July 2021, the Department of Energy (DOE) announced “USD52.5 million to fund 31 projects to advance next-generation clean hydrogen technologies and support the Hydrogen Energy Earthshot initiative.”¹³¹⁰ This funding aims to reduce the cost and accelerate breakthroughs in the clean hydrogen sector, a form of renewable energy, that can have a major role in tackling the climate crisis.

On 9 July 2021, the DOE announced “the selection of four projects to receive up to USD3.5 million to apply machine learning techniques to geothermal exploration and production datasets.”¹³¹¹ This funding could assist in the development of new geothermal resources that could lead to higher success rates in exploratory drilling, greater efficiency in plant operations and lower costs for geothermal energy operators.

¹³⁰⁷ UK government announces major expansion of heat networks in latest step to power homes with green energy, Department for Business, Energy & Industrial Strategy (London) 29 December 2021. Access Date: 17 January 2022. <https://www.gov.uk/government/news/uk-government-announces-major-expansion-of-heat-networks-in-latest-step-to-power-homes-with-green-energy>

¹³⁰⁸ U.S. Secretary of Energy Granholm, Canadian Minister of Natural Resources O'Regan Launch Cooperative Agreement on Clean Energy, Innovation, and Energy Justice, Office of Energy Efficiency & Renewable Energy (Washington D.C.) 24 June 2021. Access Date: 27 November 2021. <https://www.energy.gov/eere/articles/us-secretary-energy-granholm-canadian-minister-natural-resources-oregan-launch>

¹³⁰⁹ The North American Renewable Integration Study, Office of Energy Efficiency & Renewable Energy (Washington D.C.) 24 June 2021. Access Date: 27 November 2021. <https://www.energy.gov/eere/articles/north-american-renewable-integration-study>

¹³¹⁰ DOE Announces \$52.5 Million to Accelerate Progress in Clean Hydrogen, United States Department of Energy (Washington D.C.) 7 July 2021. Access Date: 27 November 2021. <https://www.energy.gov/articles/doe-announces-525-million-accelerate-progress-clean-hydrogen>

¹³¹¹ Department of Energy Selects Four Projects to Receive up to \$3.5 Million to Advance Research in Machine Learning for Geothermal Energy, Office of Energy Efficiency & Renewable Energy (Washington D.C.) 9 July 2021. Access Date: 27 November 2021. <https://www.energy.gov/eere/articles/department-energy-selects-four-projects-receive-35-million-advance-research-machine>

On 13 July 2021, the National Renewable Energy Laboratory published its 2021 U.S. Geothermal Power Production and District Heating Market Report.¹³¹² This report identifies opportunities for expanding power production through enhanced geothermal systems technology development. The report evaluates the impact of current policy as well as presenting future opportunities for the domestic geothermal industry.

On 20 July 2021, the DOE awarded USD127 million to support 110 innovative projects focused on tackling the climate crisis.¹³¹³ The funding among American small businesses and entrepreneurs will power the clean energy revolution by supporting the research and development of innovative clean energy technologies.

On 3 August 2021, the DOE announced nearly USD34 million in funding for 11 projects for the development to improve and produce biofuels, biopower, and bioproducts.¹³¹⁴ The funding for biofuel research and development can promote renewable energy and contribute to the decarbonization of the transportation sector.

On 3 August 2021, the DOE selected eight small businesses to develop wind technology under the 2021 Competitiveness Improvement Project.¹³¹⁵ The project is to help advance wind energy as a cost-effective, reliable and compatible distributed energy resource.

On 11 August 2021, the DOE announced USD45 million for projects that will help integrate clean energy sources onto the power grid.¹³¹⁶ The funding will advance the domestic manufacturing of solar energy and electric grid technologies.

On 1 September 2021, during the visit of John Kerry, Special Presidential Envoy for Climate, to Japan, both countries issued a joint statement to express their intention to further cooperate on innovation on areas such as renewable energy, energy storage, smart grid, energy efficiency, low carbon hydrogen, carbon capture, utilization, storage and recycling of carbon, industrial decarbonization and advanced nuclear power.¹³¹⁷ The two sides agreed on the importance of cooperating with developing countries for supporting their emission reduction efforts.¹³¹⁸

¹³¹² NREL 2021 U.S. Geothermal Market Report Released, Office of Energy Efficiency & Renewable Energy (Washington D.C.) 13 July 2021. Access Date: 27 November 2021. <https://www.energy.gov/eere/articles/nrel-2021-us-geothermal-market-report-released>

¹³¹³ Department of Energy Awards \$127 Million to Bring Innovative Clean Energy Technologies to Market, Office of Energy Efficiency & Renewable Energy (Washington D.C.) 20 July 2021. Access Date: 27 November 2021.

<https://www.energy.gov/eere/articles/department-energy-awards-127-million-bring-innovative-clean-energy-technologies>

¹³¹⁴ DOE Announces Nearly \$34 Million to Advance Waste and Algae Bioenergy Technology, United States Department of Energy (Washington D.C.) 3 August 2021. Access Date: 27 November 2021. <https://www.energy.gov/articles/doe-announces-nearly-34-million-advance-waste-and-algae-bioenergy-technology>

¹³¹⁵ Small Businesses Selected To Help Advance Wind Energy as a Distributed Energy Resource, Office of Energy Efficiency & Renewable Energy (Washington D.C.) 3 August 2021. Access Date: 27 November 2021.

<https://www.energy.gov/eere/articles/small-businesses-selected-help-advance-wind-energy-distributed-energy-resource>

¹³¹⁶ DOE Awards \$45 Million to Advance Solar Manufacturing and Grid Technologies, United States Department of Energy (Washington D.C.) 11 August 2021. Access Date: 27 November 2021. <https://www.energy.gov/articles/doe-awards-45-million-advance-solar-manufacturing-and-grid-technologies>

¹³¹⁷ Japan-U.S. Joint Media Statement on the occasion of Special Presidential Envoy for Climate John Kerry's visit to Japan, Ministry of Foreign Affairs (Tokyo) 1 September 2021. Access Date: 21 November 2021.

https://www.mofa.go.jp/press/release/press6e_000323.html

¹³¹⁸ Meeting between Foreign Minister MOTEGI and The Honorable John F. Kerry, United States Special Presidential Envoy for Climate, Ministry of Foreign Affairs (Tokyo) 31 August 2021. Access Date: 21 November 2021.

https://www.mofa.go.jp/press/release/press6e_000322.html

On 8 September 2021, the DOE released the Solar Futures Study.¹³¹⁹ The study details the importance of solar energy in decarbonizing the nation's power grid; the findings call for massive and equitable deployment of clean energy sources.

On 9 September 2021, the DOE "announced USD64.7 million in funding for projects focused on producing cost-effective, low-carbon biofuels."¹³²⁰ The funding will help advance technologies to create replacements for petroleum fuels used in heavy-duty forms of transportation.

On 23 September 2021, the DOE announced "USD17.9 million in funding for four research and development projects to scale up American manufacturing of flow battery and long-duration storage systems."¹³²¹ This funding along with the new USD9 million effort for the Energy Storage Social Equity Initiative will provide materials needed to expand the power grid with new, clean energy sources.

On 30 September 2021, the DOE announced a "USD8.5 million funding opportunity to improve the operational flexibility of the U.S. hydropower fleet."¹³²² DOE's Water Power Technologies Office will fund awards to advance hydropower technologies to enhance grid reliability. Funding will increase hydropower's ability to operate flexibly and support intermittent energy sources.

On 7 October 2021, the DOE announced USD20 million in funding to produce clean hydrogen energy from nuclear power.¹³²³ The approach will allow clean hydrogen to serve as a source for zero-carbon electricity.

On 8 October 2021, the DOE announced a new National Community Solar Partnership target to enable community solar systems to power five million households by 2025.¹³²⁴ Reaching this milestone will help achieve the Biden-Harris Administration's goals of achieving 100% clean electricity by 2035.

On 15 October 2021, the DOE announced USD20 million in funding for four projects to work on accelerating the regional deployment of carbon capture, utilization and storage.¹³²⁵ This initiative is designed to identify and address regional storage and transportation challenges as well as reducing carbon dioxide emissions from industrial sources.

¹³¹⁹ DOE Releases Solar Futures Study Providing the Blueprint for a Zero-Carbon Grid, United States Department of Energy (Washington D.C.) 8 September 2021. Access Date: 27 November 2021. <https://www.energy.gov/articles/doe-releases-solar-futures-study-providing-blueprint-zero-carbon-grid>

¹³²⁰ DOE Announces Nearly \$65 Million for Biofuels Research to Reduce Airplane and Ship Emissions, United States Department of Energy (Washington D.C.) 9 September 2021. Access Date: 27 November 2021. <https://www.energy.gov/articles/doe-announces-nearly-65-million-biofuels-research-reduce-airplane-and-ship-emissions>

¹³²¹ DOE Invests \$27 Million in Battery Storage Technology and to Increase Storage Access, United States Department of Energy (Washington D.C.) 23 September 2021. Access Date: 27 November 2021. <https://www.energy.gov/articles/doe-invests-27-million-battery-storage-technology-and-increase-storage-access>

¹³²² DOE Announces \$8.5 Million to Increase Hydropower Flexibility, Office of Energy Efficiency & Renewable Energy (Washington D.C.) 30 September 2021. Access Date: 27 November 2021. <https://www.energy.gov/eere/articles/doe-announces-85-million-increase-hydropower-flexibility>

¹³²³ DOE Announces \$20 Million to Produce Clean Hydrogen From Nuclear Power, United States Department of Energy (Washington D.C.) 7 October 2021. Access Date: 27 November 2021. <https://www.energy.gov/articles/doe-announces-20-million-produce-clean-hydrogen-nuclear-power>

¹³²⁴ DOE Sets 2025 Community Solar Target to Power 5 Million Homes, United States Department of Energy (Washington D.C.) 8 October 2021. Access Date: 27 November 2021. <https://www.energy.gov/articles/doe-sets-2025-community-solar-target-power-5-million-homes>

¹³²⁵ OE Awards \$20 Million to Help States Deploy Carbon Capture and Storage, United States Department of Energy (Washington D.C.) 15 October 2021. Access Date: 27 November 2021. <https://www.energy.gov/articles/doe-awards-20-million-help-states-deploy-carbon-capture-and-storage>

On 18 October 2021, the DOE “announced USD105 million in funding for small businesses to pursue the deployment of clean energy technologies.”¹³²⁶ The clean energy research and development will assist with carbon removal.

On 19 October 2021, the DOE awarded nearly USD40 million to 40 projects for advancing the next generation of solar, storage and industrial technologies.¹³²⁷ The projects will work towards reducing the cost of solar technologies and increasing the lifespan of solar panels.

On 2 November 2021, the DOE announced USD16 million in funding for national lab directed projects focused on hydropower’s contributions to a decarbonized, reliable and resilient grid.¹³²⁸ The projects will enable the hydropower community to more accurately model future water availability, evaluate opportunities for adding hydropower to non-powered dams and to understand how to operate hydropower to mitigate wildfires’ impacts to the power grid.

On 1 December 2021, the DOE announced “USD13 million in funding for 17 projects to implement energy and water efficiency, renewable energy and climate resilience technologies at federal facilities.”¹³²⁹ This funding will promote the use of renewables as an efficient source of energy at federal buildings.

On 6 December 2021, the DOE released a Request for Information regarding technologies on carbon emission reduction and carbon removal.¹³³⁰ The request seeks information from industry, investors, developers, academia, research laboratories, government agencies, non-governmental organizations and other relevant communities on available and affordable decarbonization technologies for deployment.

On 8 December 2021, President Joe Biden signed an executive order on catalyzing the country’s clean energy economy.¹³³¹ The order will “reduce emissions across federal operations, invest in American clean energy industries and manufacturing, and create clean, healthy, and resilient communities.”

On 21 December 2021, the DOE announced the establishment of the Office of Clean Energy Demonstrations.¹³³² The new office will work towards supporting clean energy technology demonstration projects such as clean hydrogen, carbon capture and energy storage.

¹³²⁶ DOE Announces \$105 Million for Small Businesses to Invest in Clean Energy Research and Development, United States Department of Energy (Washington D.C.) 18 October 2021. Access Date: 27 November 2021.

<https://www.energy.gov/articles/doe-announces-105-million-small-businesses-invest-clean-energy-research-and-development>
¹³²⁷ DOE Awards Nearly \$40 Million for Grid Decarbonizing Solar Technologies, United States Department of Energy (Washington D.C.) 19 October 2021. Access Date: 27 November 2021. <https://www.energy.gov/articles/doe-awards-nearly-40-million-grid-decarbonizing-solar-technologies>

¹³²⁸ DOE Awards \$16M for National Lab Projects Focused on Hydropower’s Role in a Clean Energy Future, Office of Energy Efficiency & Renewable Energy (Washington D.C.) 2 November 2021. Access Date: 27 November 2021.
<https://www.energy.gov/eere/articles/doe-awards-16m-national-lab-projects-focused-hydropowers-role-clean-energy-future>

¹³²⁹ DOE Announces \$13 Million For Energy Efficiency Technologies at Federal Buildings, United States Department of Energy (Washington D.C.) 1 December 2021. Access Date: 12 January 2022. <https://www.energy.gov/articles/doe-announces-13-million-energy-efficiency-technologies-federal-buildings>

¹³³⁰ DOE Seeks Information on Deployment-Ready Carbon Reduction and Removal Technologies, United States Department of Energy (Washington D.C.) 6 December 2021. Access Date: 12 January 2022. <https://www.energy.gov/articles/doe-seeks-information-deployment-ready-carbon-reduction-and-removal-technologies>

¹³³¹ FACT SHEET: President Biden Signs Executive Order Catalyzing America’s Clean Energy Economy Through Federal Sustainability, The White House (Washington D.C.) 8 December 2021. Access Date: 12 January 2022.
<https://www.whitehouse.gov/briefing-room/statements-releases/2021/12/08/fact-sheet-president-biden-signs-executive-order-catalyzing-americas-clean-energy-economy-through-federal-sustainability/>

¹³³² DOE Establishes New Office of Clean Energy Demonstrations Under the Bipartisan Infrastructure Law, United States Department of Energy (Washington D.C.) 21 December 2021. Access Date: 12 January 2022.
<https://www.energy.gov/articles/doe-establishes-new-office-clean-energy-demonstrations-under-bipartisan-infrastructure-law>

On 6 January 2022, the DOE announced USD35 million in funding for small businesses pursuing clean energy and climate solutions.¹³³³ The aim of this funding is to support 158 projects to develop an array of clean energy technology.

On 12 January 2022, the DOE awarded USD8.4 million to four projects to establish new geothermal energy from abandoned oil and gas wells.¹³³⁴ The funding will assist in transforming oil wells into geothermal wells, accelerating the production of renewable energy.

On 13 January 2022, the DOE announced USD420 million for funding in clean energy technology advancement.¹³³⁵ The funding will assist in accelerating advances in clean energy research and work towards lowering carbon emissions.

The United States has fully complied with its commitment to accelerate renewable and other zero emissions energy deployment. The United States has accelerated renewable energy deployment through supporting research and implementing renewable energies in sectors across the nation. The United States has also accelerated other zero emissions energy deployment through methods such as carbon capture and storage.

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

Analyst: Jane Hu

European Union: +1

The European Union fully complied with its commitment to accelerate renewable energy deployment and accelerate other zero emissions energy deployment.

In June 2021, the European Parliament adopted the European Climate Law so that member states' commitments to the European Green Deal of "climate neutrality by 2050" are "binding obligations."¹³³⁶ The adopted European Climate Law also increases the European Union's target for the reduction of greenhouse gas emissions by 2030 to at least 55 per cent. As of now, the European Union will have to accelerate renewable energy and zero-emissions energy deployment in order to achieve targets set on reduction of greenhouse gas emissions in the European Climate law.

On 14 July 2021, the European Commission presented a package of proposals titled "Fit for 55" as part of the European Green Deal.¹³³⁷ The European Union pledged to reduce carbon dioxide emissions from cars by at least 55 per cent and vans by 50 per cent by the year 2030, and it aims to reduce emissions from new cars by 100 per cent by the year 2035. The commission promotes the growth and investment for zero and low emission vehicles. This initiative promotes zero-emission transport, cleaner fuel use and investment in clean technology in the European Union.

¹³³³ DOE Awards \$35 Million to Small Businesses Pursuing Clean Energy and Climate Solutions, United States Department of Energy (Washington D.C.) 6 January 2022. Access Date: 12 January 2022. <https://www.energy.gov/articles/doe-awards-35-million-small-businesses-pursuing-clean-energy-and-climate-solutions>

¹³³⁴ DOE Awards \$8.4 Million for Accessing Geothermal Potential from Abandoned Oil and Gas Wells, Office of Energy Efficiency & Renewable Energy (Washington D.C.) 12 January 2022. Access Date: 12 January 2022.

<https://www.energy.gov/eere/articles/doe-awards-84-million-accessing-geothermal-potential-abandoned-oil-and-gas-wells>

¹³³⁵ DOE Announces \$420 Million to Advance Clean Energy Breakthroughs at Energy Research Centers Across America, United States Department of Energy (Washington D.C.) 13 January 2022. Access Date: 16 January 2022.

<https://www.energy.gov/articles/doe-announces-420-million-advance-clean-energy-breakthroughs-energy-research-centers>

¹³³⁶ "EU 2030 Climate Package: Parliament to Assess Commission's Proposals" European Parliament (Strasbourg) 9 September 2021. Access Date: 22 November 2021 <https://www.europarl.europa.eu/news/en/agenda/briefing/2021-09-13/9/eu-2030-climate-package-parliament-to-assess-commission-s-proposal>

¹³³⁷ European Green Deal: commission proposes transformation of EU economy and society to meet climate ambitions, European Commission (Brussels) 14 July 2021. Access Date: 22 November 2021. https://ec.europa.eu/commission/presscorner/detail/en/IP_21_3541

On 14 July 2021, the European Commission proposed extended carbon pricing in the maritime sector.¹³³⁸ The Fuel EU initiative will set a maximum limit on greenhouse gas content of energy used by ships at European ports.¹³³⁹ This action increases sustainable maritime fuels and zero-emission technology. As part of “Fit for 55” the European Commission will make the increase in energy efficiency targets binding to achieve an overall reduction of 26-39 per cent of final and primary energy consumption by the year 2030. In addition, the renewable energy directive will increase the binding target of renewable sources to 40 per cent by the year 2030. Member states are required to expand their carbon sinks to achieve the new EU ‘carbon removal by natural sinks’ target, which is 310 million tonnes of carbon dioxide emissions by the year 2030. This requires member states to accelerate their use of renewable energy and the process of decarbonisation. The “Fit for 55,” financed by the EU budget, will “provide EUR 72.2 billion over 7 years in funding for renovation of buildings, access to zero and low emission mobility or even income support.”

On 14 July 2021, the “Fit for 55” introduced the Energy Taxation Directive proposes to ‘align’ the taxation of energy products with EU energy policies.¹³⁴⁰ This will promote clean technology and reduce taxation rates that encourage the use of fossil fuels.

On 26 October 2021, the second call for large project proposals for the Innovation Fund was launched.¹³⁴¹ The Innovation Fund, a programme for innovative low-carbon technologies, has a budget of EUR 1.5 billion to “finance technologies for renewable energy, energy intensive industries, energy storage and carbon capture use and storage.” With a revenue of EUR 25 billion until the year 2030, the Innovation Fund aims to give financial incentives to companies to invest in low-carbon technologies. The Innovation Fund, a development initiative, aims to accelerate the transition to zero emission energy technology by supporting research.

On 15 December 2021, the Commission of the European Union adopted a new framework to decarbonize the EU gas market by facilitating more renewable energy sources and low carbon gasses, including hydrogen.¹³⁴² The European Union committed to decarbonize and reduce the greenhouse gas emissions by at least 55 per cent by 2030, and to become fully climate neutral by 2050.

On 16 December 2021, the European Commission announced a new methodology for renewable cooling energy sources that would count towards the overall European Union renewable energy targets.¹³⁴³

On 10 January 2022, the European Investment Bank signed a loan agreement with the amount of EUR45 million with a Danish company named Haldor Topsøe to support research into innovative green hydrogen technologies that will lead to reduction of emissions.¹³⁴⁴

The European Union has fully complied with its commitment to accelerate renewable and other zero emissions energy deployment. The European Union released an extensive proposal package with all intended

¹³³⁸ “Delivering the European Green Deal,” European Commission (Brussels) 14 July 2021. Access Date: 22 November 2021.

https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/delivering-european-green-deal_en

¹³³⁹ European Green Deal: commission proposes transformation of EU economy and society to meet climate ambitions, European Commission (Brussels) 14 July 2021. Access Date: 22 November 2021. https://ec.europa.eu/commission/presscorner/detail/en/IP_21_3541

¹³⁴⁰ “Delivering the European Green Deal,” European Commission (Brussels) 2021. Access Date: 22 November 2021.

https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/delivering-european-green-deal_en

¹³⁴¹ “Boosting Europe’s Green Transition: commission invests €1.5 billion in innovative Clean tech projects,” European Commission (Brussels) 26 October 2021. Access Date: 22 November 2021. https://ec.europa.eu/commission/presscorner/detail/en/ip_21_5473

¹³⁴² Commission proposes new EU framework to decarbonise gas market, promote hydrogen and reduce methane emissions, European Commission (Brussels) 15 December 2021. Access Date: 31 January 2022.

https://ec.europa.eu/commission/presscorner/detail/en/IP_21_6682

¹³⁴³ European Commission adopts new methodologies rules for renewable cooling, European Commission (Brussels) 16 December 2021. Access Date: 31 January 2022. https://ec.europa.eu/info/news/european-commission-adopts-new-methodology-rules-renewable-cooling-2021-dec-16_en

¹³⁴⁴ Haldor Topsøe signs 45 million euros funding deal with European Investment Bank to drive green energy transition, European Commission (Brussels) 10 January 2022. Access Date: 31 January 2022. https://ec.europa.eu/commission/presscorner/detail/en/IP_22_281

steps and funds to decarbonize the EU, promote zero emissions energy and renewable energy. The European Union has also allocated funding towards accelerating renewable energy deployments and other net zero emission deployments.

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

Analyst: Ambra Bisagni