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

Chancellor Angela Merkel, Schloss Elmau, 8 June 2015

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

Achim Steiner, Administrator, United Nations Development Programme, in G7 Canada: The 2018 Charlevoix Summit
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6. Energy: Clean Energy Technologies

“We will work to ensure that our regulations and investments will make clean energy technologies more affordable for all nations and help drive a global, just energy transition for workers and communities that will leave no one behind.”

G7 Clean Energy Economy Action Plan

Assessment

<table>
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<tr>
<th>Country</th>
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Background

The recent publication of the 2023 Synthesis Report by the Intergovernmental Panel on Climate Change (IPCC) has highlighted the urgency of climate action to attain net zero emissions by 2050 and keep global warming below 1.5°C above pre-industrial levels. With the Russo-Ukrainian war resulting in an unprecedented global energy crisis, it is crucial that the G7 leaders develop a joint approach to address the challenges posed by the global energy transition. The leaders of the G7 have then committed to take concrete steps to “drive the transition to clean energy economies of the future cooperation within and beyond the G7.” To achieve carbon neutrality no later than 2050, there is a need for an urgent shift toward clean energy globally. The G7 leaders have recognised that to fulfill this commitment, public and private investment in industries is necessary “to fill the investment gap for the clean energy transition to lower the cost of the energy transition worldwide.”

At the 1976 San Juan Summit, G7 leaders stated the intention to develop, conserve and use a diverse array of energy resources rationally in addition to supporting the energy development goals of developing nations.

At the 1977 London Summit, G7 leaders agreed on the need for diversified energy production to reduce the dependence on oil. The need for an increase in nuclear energy to meet the world’s energy requirements was also acknowledged.

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At the 1979 Tokyo Summit, G7 leaders acknowledged the significance of advancing clean technology. It marked the initial recognition of the urgent necessity to stabilize atmospheric carbon dioxide levels and establish ethical and normative guidelines for addressing climate change in future summits.

At the 1981 Ottawa Summit, considering the 1979-80 oil price increase, G7 leaders expressed the intent to develop the “fullest possible extent sources of renewable energy such as solar, geothermal and biomass energy.”

At the 1990 Houston Summit, G7 leaders recognized the vital role of global collaboration in advancing innovative technologies and approaches to supplement energy conservation efforts in reducing carbon emissions. They endorsed the acceleration of scientific and economic research aimed at identifying effective climate change mitigation strategies, both in developing and developed nations.

At the 1998 Birmingham Summit, G8 leaders committed themselves to the development of efficient energy markets to provide “reliable, economic, safe and environmentally sound energy supplies to meet the projected increase in demand.” To achieve this, G7 leaders have highlighted the importance of international cooperation and working within the framework and principles of the Energy Charter Treaty.

At the 2005 Gleneagles Summit, G8 leaders committed to addressing climate change and advocating for the adoption of clean energy solutions. They have also pledged to implement measures aimed at cultivating markets for clean energy technologies, making them more accessible in developing countries, and providing support for vulnerable communities in adapting to the effects of climate change.

At the 2006 St. Petersburg Summit, G8 leaders reaffirmed their past commitments related to energy made at previous summits. The St. Petersburg Plan of Action was adopted to achieve enhanced global energy security. Actions in the plan included improving investments in the energy sector, diversifying energy mix, reducing energy poverty etc.

At the 2010 Muskoka Summit, G8 leaders restated their commitment to the utilization of low carbon and renewable energy sources. They further urged the International Energy Agency (IEA) to establish an international platform for low-carbon technologies with the aim of accelerating their development and deployment.

At the 2014 Brussels Summit, considering the crisis in Ukraine, G7 leaders committed to enact specific domestic policies within their respective governments to construct a more competitive, diversified, resilient and low-carbon energy system.

554 Chair’s Summary, G7 Information Centre (Toronto) 8 July 2005. Access Date: 30 September 2023. http://www.g7.utoronto.ca/summit/2005gleneagles/summary.html
555 Chair’s Summary, G7 Information Centre (Toronto) 17 July 2006. Access Date: 30 September 2023. http://www.g7.utoronto.ca/summit/2006stpetersburg/summary.html
557 G7 Brussels Summit Declaration, G7 Information Centre (Toronto) 5 June 2014. Access Date: 30 September 2023. http://www.g7.utoronto.ca/summit/2014brussels/declaration.html
At the 2015 Energy Ministerial Meeting in Hamburg, G7 Energy Ministers affirmed their dedication to endorsing the adoption of renewable energy sources. The objective is to decrease greenhouse gas emissions in their energy systems, while also acknowledging the continued importance of fossil fuels as a component of the energy mix in the foreseeable future. Moreover, the G7 leaders have committed to enhancing the research, development and demonstration efforts with an emphasis on renewable energy and other technologies with low carbon emissions.

At the 2016 Ise-Shima Summit, G7 leaders stated their determination to work towards accelerated energy transformation to bring about the decarbonization of the international economy. G7 Energy Ministers affirmed at Kitakyushu that “improving energy efficiency is key to decarbonisation of our economies, enhancing energy security and fostering economic growth.”

At the 2021 Cornwall Summit, G7 leaders committed to accelerating the adoption of zero-emissions energy and curtailing excessive and wasteful consumption. The promotion of renewable energy alternatives was also a way to “build back better” from the impacts of the Covid-19 pandemic, aligning with the roadmap devised by the International Energy Agency and to adhere to the target from the Paris Agreement.

At the 2022 Elmau Summit, considering the Russian invasion of Ukraine, G7 leaders committed to working closely together to counter the risks caused to the global energy supply by the war. G7 leaders also reiterated their support to reach net zero by 2050 and reduce fossil fuel dependency to remain consistent with a 1.5 °C warming limit.

**Commitment Features**

At the 2023 Hiroshima Summit, G7 leaders committed to “ensure that our regulations and investments will make clean energy technologies more affordable for all nations and help drive a global, just energy transition for workers and communities that will leave no one behind.”

**Definitions and Concepts**

“To ensure” indicates that the leaders will make certain that the commitment’s objective is achieved.

“Regulations” are rules made by authority to control an organization or system.

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560 G7 Ise-Shima Leaders’ Declaration, G7 Information Centre (Toronto) 27 May 2016. Access Date: 9 January 2024. http://www.g7.utoronto.ca/summit/2016shima/ise-shima-declaration-en.html#energy
562 Carbis Bay G7 Summit Communiqué, G7 Information Centre (Toronto) 13 June 2021. Access Date: 30 September 2023. http://www.g7.utoronto.ca/summit/2021cornwall/2021G7-communique.html
564 G7 Hiroshima Leaders’ Communiqué, G7 Information Centre (Toronto), 20 May 2023. Access Date: 30 September 2023. http://www.g7.utoronto.ca/summit/2023hiroshima/230520-communique.html
“Investments” are acts that put “money, effort, time … into something to make a profit or get an advantage.”\(^{567}\) This indicates that G7 members ought to invest in projects and programs that will advance the clean energy transition.

“Clean energy technologies” is any “process, product, or service that reduces negative environmental impacts.” In the context of this commitment, clean technology includes any innovation that either supports “energy efficiency improvements, the sustainable use of resources, or environmental protection activities.”\(^{568}\)

“Drive” refers to action(s) that “propel or carry along by force in a specified direction.”\(^{569}\) In this context, G7 members must initiate actions that advance the clean energy transition.

“Just” in this context refers to behaviour that is in accordance with morally ethical and fair principle.\(^{570}\) This indicates that the G7 members ought to ensure that the benefits of the clean energy transition are disseminated and shared in line with the just transition.

“Transition” refers to a process of change or transformation.\(^{571}\) In the context of this commitment, it refers to the shift from a high-emission, carbon economy to a net-zero carbon economy.

**General Interpretive Guidelines**

Full compliance, or a score of +1, will be given to G7 members that take strong action towards all four parts of this commitment, ensuring that: 1) regulations and 2) investments in the clean energy transition are 3) affordable to all countries and 4) include workers and communities. This report notes that there is a strong international focus of this commitment. As such, domestic action should take into account its impact on other countries, i.e. in line with ensuring actions ensure affordability “to all nations.”

Examples of strong actions include clean energy regulations and investments via investing in clean energy industries through government funds and tax credits; partnering with low-income countries to invest in clean energy technology development; working with the World Trade Organization to promote fair, free, and sustainable trade between countries; and eliminating green protectionist trade barriers. For both regulatory and investments, actions must ensure both affordability and inclusivity for workers and communities.

Partial compliance, or a score of 0, will be assigned to G7 members that take less strong action within the compliance period to accelerate an affordable and inclusive clean energy transition for all countries. This could include taking regulatory and investment actions but failing to ensure affordability or inclusivity for workers and communities, or some of both. Examples of less than strong action include actions that are neither regulatory or investments, such as public awareness campaigns, participate in clean energy knowledge sharing networks, diplomatic efforts, and reiterations of support for the commitment.

Non-compliance, or a score of −1, will be assigned if the G7 member that makes little to no effort towards an affordable, for all countries, and just, for workers and communities, clean energy transition or implements policies that make clean energy technology dissemination substantially more difficult.

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\(^{569}\) Drive, Oxford Languages (Oxfordshire) n.d. Access Date: 28 September 2023. https://www.oxfordlearnersdictionaries.com/definition/english/drive_1

\(^{570}\) Just, Oxford Languages (Oxfordshire) n.d. Access Date: 28 September 2023. https://www.oxfordlearnersdictionaries.com/definition/english/just_1

Scoring Guidelines

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<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
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<tr>
<td>-1</td>
<td>The G7 member has taken little to no action to ensure that its regulations or investments in clean energy technologies are more affordable for all countries or include workers and communities.</td>
</tr>
<tr>
<td>0</td>
<td>The G7 member has taken strong action in one or two areas or less than strong action in more than two areas to ensure that its regulations and its investments in clean energy technologies are affordable for all countries and include workers and communities.</td>
</tr>
<tr>
<td>+1</td>
<td>The G7 member has taken strong action in more than three or more areas to ensure that its regulations and its investments in clean energy technologies are affordable for all countries and include workers and communities.</td>
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Compliance Director: Chiara Barsanti
Lead Analyst: Ysabel Atienza

Canada: +1

Canada has fully complied with its commitment to ensure that both its regulations and investments in clean energy technologies are more affordable for all countries and help drive a global, just energy transition for workers and communities that will leave no one behind.

On 25 May 2023, Parliamentary Secretary Julie Dabrusin announced a new call funded by Canada’s Energy Innovation Program to support research, development and demonstration (RD&D) projects.\(^{572}\) Such projects will help lower or eliminate emissions from the transportation sector.

On 29 May 2023, Minister Wilkinson announced over CAD90,000 through the Green Municipal Fund’s (GMF) Community Buildings Retrofit initiative for six feasibility studies, helping Ontario cities’ municipally owned buildings find the best approach to reduce energy consumption and greenhouse gas emissions.\(^{573}\)

On 29 May 2023, Parliamentary Secretary Dabrusin announced that CAD1.3 million will be funded to the Canadian Home Builders’ Association over five years.\(^{574}\) The aim of the commitment is to expedite the adoption of innovative technologies in both new housing and the renovation of existing homes.

On 30 May 2023, Minister Wilkinson in partnership with the Governments of Nova Scotia and Newfoundland and Labrador, introduced amendments to expand the mandates of the two historic Atlantic Accord Acts.\(^{575}\) These changes will establish the legislative framework for offshore renewable energy, empowering Newfoundland and Labrador and Nova Scotia to leverage their current capabilities and expedite the development of offshore wind projects along Canada’s East Coast.

On 2 June 2023, Minister Wilkinson announced CAD650,000 in funding for QUEST Canada to evolve its Accelerating Implementation of Renewable Energy (AIRE) for Indigenous Communities project to expand

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knowledge of local energy systems and accelerating clean energy opportunities in their community. Indigenous AIRE will provide an entry point for Indigenous communities to work with QUEST on identifying and pursuing clean energy opportunities.

On 12 June 2023, Minister Champagne announced the signing of a partnership agreement with Rio Tinto, outlining an agenda for the company to fortify its leadership in green aluminium production. This includes the production of aluminum with among the lowest global carbon emissions and the ongoing commitment to decarbonize the production of essential minerals and metals.

On 13 June 2023, Minister Wilkinson announced a CAD230,000 investment into the Pembina Institute for Appropriate Development through their Energy Innovation Program. The funding goes towards the Pembina Energy Policy Simulator, which facilitates a comprehensive technical and stakeholder consultation for Pembina’s existing Energy Policy Simulator and gives analysts, academics, and general audiences access to explore different energy futures to better understand possible futures that can support Canada’s progress towards a net-zero transition.

On 13 June 2023, Minister Wilkinson announced a CAD327,535 investment into the Trottier Energy Institute of Polytechnique Montreal through their Energy Innovation Program. The funding goes towards the Canada Energy Outlook Pathways Explorer, which aims to create a net-zero energy system modelling platform and online visualization tool to analyze Canada’s different cost-optimized net-zero pathways.

On 13 June 2023, Minister Wilkinson announced over CAD3.6 million in funding for International Paper Company in collaboration with Via Separations Inc., for the implementation of filtration technology aimed at reducing the energy intensity and carbon emissions associated with the kraft pulping process.

On 13 June 2023, Minister Wilkinson announced a combined total investment of over CAD960,000 for three energy-modelling projects, which will support reducing emissions and clean technology by analyzing the most cost-effective ways to achieve net-zero.

On 14 June 2023, Minister Wilkinson met with Minister of Industry and Trade of the Czech Republic Jozef Síkela to discuss the significance of international collaboration on global energy security and the transition to

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578 Canada’s investment in energy innovation is an important part of building our clean economy, Natural Resources Canada (Ottawa) 27 September 2023. Access Date: 23 October 2023. https://natural-resources.canada.ca/science-and-data/funding-partnerships/opportunities/current-investments/21146

579 Canada’s investment in energy innovation is an important part of building our clean economy, Natural Resources Canada (Ottawa) 27 September 2023. Access Date: 23 October 2023. https://natural-resources.canada.ca/science-and-data/funding-partnerships/opportunities/current-investments/21146


net zero.\textsuperscript{582} The discussion was centred on strengthening cooperation between Europe, the Czech Republic and Canada to ensure a more resilient and sustainable energy policy, bolster critical mineral supply chains, and combat climate change through the adoption of clean technology and sustainable practices.

On 19 June 2023, Chief Executive Officer of Canada Energy Regulator Gitane De Silva released a report titled Canada’s Energy Future 2023, illustrating different energy futures for Canada that could achieve net-zero greenhouse gas emissions by 2050.\textsuperscript{583} The report identifies actions and policies the Government of Canada could take in regards to investing in clean energy technology research and development, providing financial incentives for adopting sustainable energy practices, and removing regulatory barriers in the industry.

On 19 June 2023, Minister of Transport Omar Alghabra concluded a trip representing Canada at the G7 Transport Ministers’ Meeting in Ise-Shima, Japan.\textsuperscript{584} He highlighted initiatives to build sustainable supply chains and reduce pollution through increasing sustainable aviation fuels and establishing green shipping corridors.

On 20 June 2023, Minister Alghabra introduced B-52, the Enhancing Transparency and Accountability in the Transportation System Act.\textsuperscript{585} This enacts the Air Transportation Accountability Act which requires airports to publish and report on their pollution reduction plans to help achieve net-zero goals.

On 20 June 2023, Minister of Fisheries, Oceans, and the Canadian Coast Guard Joyce Murray and Minister Wilkinson announced the creation of a task force tasked with exploring challenges and possibilities of proposed tidal energy projects in the Bay of Fundy.\textsuperscript{586} “The task force will define the criteria needed to protect fishes and marine life, as well as mechanisms for streamlining processing time for regulatory decisions related to tidal energy projects in the Bay of Fundy.

On 27 June 2023, Minister Wilkinson, British Columbia (BC) Minister of Energy, Mines and Low Carbon Innovation Josie Osborne, Political Executive of the First Nations Summit Robert Phillips, and Chief Don Tom of the Union of British Columbia Indian Chiefs, announced the British Columbia Regional Energy and Resource Table: Framework for Collaboration on the Path to Net Zero identifying six strategic areas of opportunity which have potential to contribute significantly to building a prosperous economy: clean fuels/hydrogen, electrification, critical minerals, forest sector, carbon management technology and systems, and regulatory efficiency.\textsuperscript{587}


On 28 June 2023, Minister Wilkinson announced over CAD7 million in investments, which is provided through the Smart Renewables and Electrification Pathways program, for four projects. These investments aim to assist the development and implementation of renewable energy projects in co-operation with Indigenous communities.

On 29 June 2023, Minister Wilkinson launched a combined call for proposals to provide funding through the Clean Fuels Awareness and Zero-Emission Vehicle Awareness Initiative. The call will fund projects that aim to increase awareness while boosting public and industry confidence to implement change through adopting zero-emission vehicles and clean fuels.

On 5 July 2023, Minister Wilkinson and Minister of Sport and Minister responsible for Canada Economic Development for Quebec Regions Pascale St-Onge announced a total contribution of CAD10.5 million to CABONITY for its project transforming wood residues into value-added biochar products that sequester carbon.

On 12 July 2023, Minister Wilkinson announced over CAD160 million in federal funding for nine Indigenous-led solar energy projects across Alberta that will create jobs while producing and storing clean electricity.

On 18 July 2023, Minister Wilkinson announced a second call for proposals for the Critical Minerals Research Development and Demonstration Program. It will make CAD40 million available to support developing technology and pilot demonstration projects on critical minerals value chains, contributing to Canada’s goal of becoming net-zero by 2050.

On 18 July 2023, Member of Parliament Sean Casey announced a CAD1.8 million investment supporting two projects in Prince Edward Island (PEI) through the GMF. The funding will go towards upgrading energy efficiency and greenhouse gas reduction plans.

On 2 August 2023, Minister Wilkinson and Scott Pearce, President of the Federation of Canadian Municipalities (FCM), announced an investment of up to CAD500,000 towards a home retrofitting pilot program executed

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by the HomeZero Collective Society in Vernon, BC.\(^{594}\) The project will retrofit 10-15 homes in Vernon and measures are expected to reduce home emissions by 85-99 per cent.

On 3 August 2023, Minister Wilkinson and FCM President Pearce announced an investment of around CAD1 million for five projects across southwestern Ontario.\(^{595}\) The funding will support deep retrofits and energy-efficient, low-carbon infrastructure, while creating jobs and saving consumers money.

On 8 August 2023, Minister Wilkinson released Powering Canada Forward, a vision to decarbonize grids by 2035 and ensure household energy cost affordability to transform Canada’s electricity sector.\(^{596}\) This paper emphasizes the importance of decarbonization to achieve net-zero emissions and invites Canadians to help inform the development of Canada’s Clean Electricity Strategy set to be released in 2024.

On 10 August 2023, Minister Guilbeault and Minister Wilkinson announced draft Clean Electricity Regulations.\(^{597}\) The regulations will guide Canada towards achieving a net-zero electricity grid by 2035. Maintaining household affordability remains a priority in the draft regulations, and a 75-day consultation period with Canadian groups and individuals will help inform final regulations.

On 11 August 2023, Leader of the Government in the House of Commons and Member of Parliament for Burlington Karina Gould announced a joint investment of CAD462,500 to support planning activities for the transition to zero emission buses.\(^{598}\)

On 19 August 2023, Minister Wilkinson announced up to CAD74 million in federal funding for SMR development in Saskatchewan, a non-emitting form of energy, to help deliver clean, reliable, and affordable power.\(^{599}\) This funding will support pre-engineering work, technical studies, environmental assessments, regulatory studies, and community and Indigenous engagement.

On 30 August 2023, Minister Wilkinson announced a CAD1.3 million investment into Hydro-Quebec through their Energy Innovation Program.\(^{600}\) The funding goes towards a research project on diesel, solar and battery microgrids for remote communities.


\(^{600}\) Canada’s investment in energy innovation is an important part of building our clean economy, Natural Resources Canada (Ottawa) 30 August 2023. Access Date: 23 October 2023. https://natural-resources.canada.ca/science-and-data/funding-partnerships/opportunities/current-investments/21146
On 30 August 2023, Minister Wilkinson concluded a zero-emissions vehicle tour and announced almost CAD30 million in federal investment for over 1,500 EV chargers across Quebec.\(^{601}\)

On 31 August 2023, Minister of Transport Pablo Rodriguez announced an investment of nearly CAD3 million under the Zero-Emission Trucking Program. CAD1.5 million will go towards a Zero-Emission Testbed in Montreal, and two investments totally over CAD1.3 million will support British Columbia and Nova Scotia projects on zero emission truck performance and safe deployment of zero emission trucking technologies.\(^{602}\) A call for proposals under the program also allows projects to receive up to CAD1 million to advance efforts towards zero-emissions trucking.

On 8 September 2023, Minister of Housing, Infrastructure, and Communities Fraser announced up to CAD25 million for the Weavers Mountain Wind Energy Project.\(^{603}\) This project will supply zero-emissions power by reducing greenhouse gas emissions and provide clean energy to Nova Scotia’s electricity grid while delivering low and stable prices.

On 15 September 2023, Minister Wilkinson announced over CAD15.2 million for four projects that aim to reduce emissions and increase the sustainability of buildings in Ontario.\(^{604}\)

On 19 September 2023, Minister Wilkinson and Sebastian Burjuda, Minister of Energy of Romania, announced Canada’s support of Romanian energy security and climate action through CAD3 billion in export financing to the national operator of the Cernavoda Nuclear Generating Station.\(^{605}\) The investment will also support Canadian jobs and business in Romania’s nuclear sector.

On 27 September 2023, Minister Wilkinson released Canada’s Carbon Management Strategy at the International Energy Agency in Paris, France.\(^{606}\) The strategy highlights priority areas for the Government of Canada to promote a competitive and robust carbon management industry and describes how carbon management will help Canada achieve a net-zero economy.

On 27 September 2023, Minister Wilkinson announced a CAD1.7 million investment into K+S Potash Canada through their Energy Innovation Program.\(^{607}\) The funding goes towards a study on heat integrated carbon

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607 Canada’s investment in energy innovation is an important part of building our clean economy, Natural Resources Canada (Saskatoon) 27 September 2023. Access Date: 23 October 2023. https://natural-resources.canada.ca/science-and-data/funding-partnerships/opportunities/current-investments/21146
capture, storage, and utilization at a potash mine to increase technological readiness to reduce greenhouse gas emissions in Canada.

On 27 September 2023, Minister Wilkinson announced a CAD7 million investment into Canada Natural on behalf of Pathways Alliance through their Energy Innovation Program. The funding goes towards a carbon capture and sequestration in oil sands project to support future carbon capture and sequestration developments in Alberta and lead to the creation of carbon dioxide capture facilities at oil sands assets.

On 27 September 2023, Minister Wilkinson announced a CAD4 million investment into Suncor Energy Inc. through their Energy Innovation Program. The funding goes towards a study of Svante’s carbon dioxide capture technology, and will support the scale up and commercialization of carbon dioxide capture technology.

On 27 September 2023, Minister Wilkinson announced a CAD5.3 million investment into Vault 44.01 Ltd. through their Energy Innovation Program. The funding goes towards a study on Hinton pulp bioenergy carbon capture and storage project for negative emissions, and contributes to investment decisions for carbon-capturing projects.

On 27 September 2023, Minister Wilkinson announced a CAD5 million investment into Enhance Energy Inc. through their Energy Innovation Program. The funding goes towards a technical feasibility assessment of Alberta’s carbon sequestration hub and will allow multiple sectors to leverage common infrastructure for effective emissions management.

On 27 September 2023, Wilkinson announced a CAD3 million investment into Cenovus Energy Inc. through their Energy Innovation Program. The funding goes towards an ethanol plant carbon sequestration project for Minnedosa which will support future carbon capture and sequestration developments and create jobs in Manitoba.

On 28 September 2023, Minister Wilkinson and Minister Pannier-Runacher announced a Canada-France Bilateral Dialogue on Critical Minerals. The dialogue will focus on deepening Canada-France cooperation on promoting ESG standards, securing critical minerals supplies, promoting investment, and collaborating in research and development.

On 29 September 2023, Minister Wilkinson met with business leaders and international partners in Europe to strengthen energy cooperation and attract investment to Canada in critical minerals and clean energy. There,

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608 Canada’s investment in energy innovation is an important part of building our clean economy, Natural Resources Canada (Ottawa) 27 September 2023. Access Date: 23 October 2023. https://natural-resources.canada.ca/science-and-data/funding-partnerships/opportunities/current-investments/21146
609 Canada’s investment in energy innovation is an important part of building our clean economy, Natural Resources Canada (Ottawa) 27 September 2023. Access Date: 23 October 2023. https://natural-resources.canada.ca/science-and-data/funding-partnerships/opportunities/current-investments/21146
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611 Canada’s investment in energy innovation is an important part of building our clean economy, Natural Resources Canada (Ottawa) 27 September 2023. Access Date: 23 October 2023. https://natural-resources.canada.ca/science-and-data/funding-partnerships/opportunities/current-investments/21146
612 Canada’s investment in energy innovation is an important part of building our clean economy, Natural Resources Canada (Ottawa) 27 September 2023. Access Date: 23 October 2023. https://natural-resources.canada.ca/science-and-data/funding-partnerships/opportunities/current-investments/21146
Wilkinson led discussions on transparent, sustainable, and responsible supply chains at the first Critical Minerals and Clean Energy Summit hosted by the International Energy Agency.

On 29 September 2023, the Government of Canada announced up to CAD19 million for Maritime Electric Company’s Sustainable Electrification initiative.615 The project will reduce greenhouse gas emissions and provide for the efficient use of renewable energy sources located on PEI by creating a more efficient and resilient electricity grid system.

On 3 October 2023, Minister Wilkinson and FCM President Pearce announced an investment of CAD335,000 through the GMF.616 This funding will go towards two feasibility studies to improve energy efficiency and reduce greenhouse gas emissions in the City of Hamilton.


On 5 October 2023, Minister Champagne and Deputy Prime Minister of Sweden Ebba Busch made a statement on their commitment to collaborating and leveraging strategic assets like critical minerals, clean energy, and talent, to foster economic growth and a green future.618

On 12 October 2023, Canada and its Price Cap Coalition partners issued an advisory for the maritime oil industry and related sectors to promote responsible practices in the industry and enhance compliance with the price caps on crude oil and petroleum products of Russian Federation origin put in place by the Coalition.619 The Price Cap Coalition is a group formed by the G7, the European Union and Australia.

On 13 October 2023, Deputy Prime Minister and Minister of Finance Chrystia Freeland attended the G7 and G20 Finance Minister meetings, Annual Meetings of the International Monetary Fund and World Bank meetings in Marrakech, Morocco.620 Minister Freeland announced an investment of CAD5 million to Japan’s Resilient and Inclusive Supply-chain Enhancement Partnership in collaboration with the World Bank. This investment aims to accelerate clean economic growth in low- and middle-income countries while fostering the development of shared clean energy and critical minerals supply chain.

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On 16 October 2023, Minister Wilkinson met with several Maritime ministers to discuss phasing-out coal-fired electricity generation by 2030 and driving net-zero electricity by 2035 and a net-zero economy by 2050 in an affordable manner for Nova Scotians and New Brunswickers.\textsuperscript{621}

On 29 October 2023, Minister of Export Promotion Mary Ng participated in the G7 Trade Ministers’ Meeting in Osaka, Japan.\textsuperscript{622} At this meeting, Minister Ng reiterated Canada’s role as an international leader in the critical mineral industry, demonstrating its achievement as one of the world’s largest producers of minerals and metals supporting the transition to clean energy.

On 2 December 2023, at the 28th Conference of the Parties (COP28) to the United Nations Framework Convention on Climate Change in Dubai, Canada was one of the signatories to a pledge to triple nuclear power.\textsuperscript{623} The declaration cites the benefits of nuclear energy, such as low greenhouse gas emissions, combatting climate change, and the intent to scale this technology globally.

On 2 December 2023, at COP28 Canada was among the participants that launched the Coal Transition Accelerator to “share expertise, design new policies including through best practices and lessons learned, and unlock new sources of public and private financing to facilitate just transitions from coal to clean energy.”\textsuperscript{624}

Canada has fully complied with its commitment to ensure that both its regulations and investments towards clean energy technologies are more affordable for all nations and help drive a global, just energy transition for workers and communities that will leave no one behind. To respond to the need for cleaner and more efficient technology, Canada has made multiple investments at the domestic scale to upgrade existing energy technologies and develop innovative solutions. Moreover, Canada has partnered with other nations to share knowledge and leverage resources.

Thus, Canada receives a score of +1.

\textit{Analyst: Annabelle Liao}

\textbf{France: +1}

France has fully complied with its commitment to ensure that both its regulations and investments towards clean energy technologies are more affordable for all nations and help drive a global, just energy transition for workers and communities that will leave no one behind.

On 9 June 2023, the ministers of Higher Education and Research, Energy Transition and Education and Professional Training presented actions to develop more innovative nuclear technologies.\textsuperscript{625} France is devoting USD1 billion to enable more players to partake in this development, to allow heavy emitting sectors, such as


\textsuperscript{624} Global Leaders Gather at COP28 to Launch a New Initiative to Support Acceleration of Just Coal Transitions, Elysee (Paris) 2 December 2023. Access Date: 5 December 2023. https://www.elysee.fr/admin/upload/default/0001/15/5887a8f79e48ee44de83f61dc0ad3157b22dec30.pdf

agriculture to reduce their carbon dioxide emissions.\textsuperscript{626} This is part of the existing 3NC (New Nuclear, New Skills) project, which supports nuclear innovation and worker upskilling to join France’s nuclear industry.

On 19 June 2023, Secretary-General for Europe and Foreign Affairs Anne-Marie Descotes and Chairman of the Executive Affairs Authority for United Arab Emirates (UAE) Khaldoon Khalifa Al Mubarak met in Paris for the 15th session of the UAE-France Strategic Dialogue.\textsuperscript{627} This discussion welcomed cooperation between both nations on their nuclear energy programs to support a low carbon future.

On 19-23 June 2023, Minister for Energy Transition Agnès Pannier-Runacher hosted a series of conferences in Paris.\textsuperscript{628} These conferences addressed topics of raising capital for clean technologies, relaunching nuclear power in Europe and sustainable development in Colombia.

On 22 June 2023, France, as a part of the International Partners Group, comprising Germany, France, United Kingdom and Canada launched the Just Energy Transition Partnership.\textsuperscript{629} This partnership is aimed to finance and support Senegal’s pursuit of increasing renewable energy to 40 per cent of the country’s energy mix.

On 22 and 23 June 2023, President Emmanuel Macron organised a summit and hosted 300 high level international government officials to construct a financial architecture to support vulnerable populations from Climate Change.\textsuperscript{630} In addition to discussing the prevention of other impacts of climate change, the discussion stressed the need for green energy transition and resilience.

On 27 June 2023, Minister for Europe and Foreign Affairs Catherine Colonna and Minister of Foreign Affairs of the State of Kuwait Sheikh Salem al-Sabah had a meeting in Paris.\textsuperscript{631} During this meeting, both countries signed an extended agreement to fight climate change and arranged for a more comprehensive discussion.

On 3 July 2023, the Ministry of Ecological Transition and Territorial Cohesion arranged the “Green Fund: everyday ecology” event.\textsuperscript{632} During this event, ministers addressed private and public partners to discuss 2000 new projects aimed at ecological transformations supported by the ‘Green Fund.’


On 8 July 2023, Minister Pannier-Runacher met with the government of Saudi Arabia and announced a joint press release regarding France and Saudi Arabia’s cooperation on energy issues.633 Both countries agreed to work together to devise efficient and safe solutions for hydrogen and nuclear energy production and storage.

On 28 July 2023, Minister of Ecological Transition and Territorial Cohesion Christophe Bechu travelled to Chennai, India to participate in the G20 Environment and Climate Ministers meeting.634 This entailed a technical discussion between G20 climate ministers on topics regarding resource efficiency and climate change.

On 20 September 2023, Ministers Bruno Le Maire, Minister Colonna and Minister Pannier-Runacher, as well as Secretary of State Chrysoula Zacharopoulou attended the United Nations Secretary-General’s Climate Action Summit in New York.635 During this summit, France expressed their willingness to pursue meaningful international partnerships for a just energy transition through the French Development Agency and the Green Climate Fund.

On 12 October 2023, Minister Pannier-Runacher made an official announcement on France’s plans to reducing the combined consumption of electricity and gas by 12 per cent.636 These plans include the continued mobilization of France’s largest companies, enable a ‘Thermostat Plan’ for the public which would result 15 per cent of energy savings, enforce regulations on light pollution within offices, promote clean mobility amongst businesses and promote energy savings in conjunction with energy suppliers. Through these measures, France aspires to reduce their dependance on fossil fuels, through uses of nuclear, and other renewable energies.

On 27 October 2023, the Interministerial Committee of Cities doubled the share for green funds invested in neighbourhoods to 15 per cent.637 This target is part of a larger ‘Resilient Neighbourhoods’ initiative which aims to reduce fossil fuel use, better manage water resources, and promote a circular economy.

On 26 September 2023, President Macron took measures to freeze the price of fuel to curb inflationary fuel and retail good prices.638 This measure is coupled with a transparent auditing of gas production and distribution costs and margins. Additionally, a EUR10 million fund is in place to allow for an ecological transition of this polluting sector.

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On 10 October 2023, an ecological subsidy for French residents switching to more sustainable or ecological cars became active, offering an amount up to EUR7000 for this change. The eligibility criteria accounts for the car’s material, manufacturing emissions, battery production, assembly and distribution.

On 23 October 2023, Minister of Higher Education Sylvie Retailleau attended the third meeting of the France-Singapore Joint Committee for Science and Innovation (COSIMIX) in Singapore. This meeting established new agreements and partnerships that aim to create collaborative master’s and doctoral programs, along with research initiatives focusing on women’s health, the circular economy, fusion energy and quantum research.

On 27 November 2023, President Macron met with Director General of the International Atomic Energy Agency (IAEA) Rafael Grossi at the World Nuclear Exhibition. During their conversation, France extended its support for the peaceful use of nuclear sciences and technologies in order to combat climate change and improve economic development worldwide.

On 1-2 December 2023, President Macron visited Dubai for the 28th Conference of the Parties (COP28) to the United Nations Framework Convention on Climate Change. At the conference, President Macron represented France’s position on energy matters, including France’s intent to triple nuclear energy production capacity between 2020 and 2050, and to enable the gradual yet swift move away from fossil fuels entirely.

On 2 December 2023, participants led by France launched the Coal Transition Accelerator to “share expertise, design new policies including through best practices and lessons learned, and unlock new sources of public and private financing to facilitate just transitions from coal to clean energy.”

On 2 December 2023, at COP28 France was one of the signatories to a pledge to triple nuclear power. The declaration cites the benefits of nuclear energy, such as low greenhouse gas emissions, combatting climate change, and the intent to scale this technology globally.

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On 3 December 2023, the Democratic Republic of Congo and France, in addition to Germany, the US and the Bezos Earth Fund and Country Package Seed Fund announced a partnership to support Congo’s New Climate Economy. Together, the partnership has announced an initial USD62 million to support this initiative.

France has fully complied with their commitment towards clean energy technologies through their extensive collaborations internationally to promote the discourse and development of carbon reducing technologies. Internally, France is taking measures to reduce usage of fossil fuels through policies, and by increasing ambitions of increasing renewable energy within France’s energy mix.

Thus, France receives a score of +1

**Germany: +1**

Germany has fully complied with its commitment to ensure that both its regulations and investments towards clean energy technologies are more affordable for all nations and help drive a global, just energy transition for workers and communities that will leave no one behind.

On 24 May 2023, the Federal Cabinet established regulations on the legal and regulatory framework for a future hydrogen core network in Germany with the current amendment to the Energy Industry Act. Federal Minister for Economic Affairs and Climate Protection (BMWK) Robert Habeck emphasized their goal to expediently ramp up the hydrogen market to promote decarbonization. In the first stage, the hydrogen core network will include hydrogen infrastructure scheduled to be operational by 2032.

On 1 June 2023, Minister Habeck opened the second day of the Global NDC [Nationally Determined Contribution] Conference in Berlin, focusing on ambitious climate protection in emerging and developing countries. Minister Habeck announced that Germany and its partners in the Mitigation Action Facility will provide EUR100 million for a decarbonization funding competition project in developing and emerging countries.

On 1 June 2023, EU Energy Commissioner Kadri Simson and Minister Habeck decided to link the new European Hydrogen Bank with the H2Global instrument developed by Germany for the market ramp-up during a bilateral meeting. The agreed collaboration will help ensure hydrogen needs in Germany and Europe are met.

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On 1 June 2023, Minister Habeck signed the German-Danish offshore project “Bornholm Energy Island” with his Danish counterpart Energy Minister Lars Aagaard.\(^{650}\) This is the first legally binding cooperation agreement in Europe on a joint offshore project under the EU Renewable Energy Directive. At least three gigawatts of offshore wind power generation capacity will be connected on Danish territory by the early 2030s.

On 7 June 2023, the federal government approved the Seventh Federal Report for Energy Research 2023, outlining the federal government’s funding policy.\(^{651}\) This program supports the innovation of climate-friendly, and highly efficient energy technologies.

On 7 June 2023, KfW Capital announced the provision of EUR100 million for investments in venture capital funds to acquire investments in environmental and climate technology start-ups through the new Green Transition Facility.\(^{652}\)

On 13 June 2023, Parliamentary State Secretary to the Federal Minister for Economic Affairs and Climate Protection Dr. Franziska Brantner agreed with the Minister for Economy, Innovation and Energy of Quebec, Canada, Pierre Fitzgibbon on closer cooperation in promoting innovative projects by medium-sized companies in Germany and Quebec. Both sides reaffirmed their shared interest in combating climate change, transitioning to clean energy by developing decarbonization technologies.\(^{653}\) This preceded the first call for proposals for joint German-Quebec innovation projects by start-ups, small, and medium-sized companies and research institutions aimed at clean energy innovation.

On 16 June 2023, Federal Development Minister Svenja Schulze, Minister Habeck, Federal Environment Minister Steffi Lemke, Minister of State in the Foreign Office Anna Lührmann, and Colombian Foreign Minister Álvaro Leyva Durán signed a “Partnership for Climate and a Fair Energy Transition” in Berlin to formalize their climate and energy partnership.\(^{654}\) Minister Schulze promised additional financial support of up to EUR200 million for the implementation of Columbia’s national climate goals.

On 20 June 2023, Minister of Transport and Digital Infrastructure Volker Wissing announced the third round of funding available to make buses climate-friendly.\(^{655}\) He stated that their funding goal was to produce 5,000 clean buses each year such that, by 2030, half of the city busses will be electric.

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On 20 June 2023, the German and Chinese governments signed a declaration of intent on the establishment of a dialogue and cooperation mechanism on climate change and green transformation, including the expansion of renewable energy technology.656

On 27 June 2023, Minister Habeck and Minister for Electricity in the Presidential Office of South Africa Dr. Kgosietshe Kgosientsho Ramokgopa signed a declaration of intent on the sidelines of the binational commission between Germany and South Africa to expand cooperation on green hydrogen and Power-to-X products.657 The agreement demonstrates the willingness of both countries to cooperate on the production, processing, application and transport of green hydrogen as well as the associated synthetic fuels and ammonia. The aim is to improve intergovernmental exchanges, make access to markets easier, and promote joint project development and dialogue between politics, research, and science.

On 27 June 2023, the Federal Ministry of Transport and Digital Infrastructure announced their support of 21 projects working to reduce ship emissions in sea and inland ports as part of its “BordstromTech” funding guidelines.658 The funding totals almost EUR9 million, and the projects are expected to reduce up to 11,900 tonnes of greenhouse gas emissions and up to 205 tonnes of air pollutant emissions annually in ports.

On 28 June 2023, the Federal Cabinet improved funding for electricity from renewable energies for EVs.659

On 29 June 2023, the BMWK announced EUR80 million of funding will be available for research directed at improving electromobility and environmental compatibility.660

On 3 July 2023, State Secretary at the Federal Ministry for Economic Affairs and Climate Action Michael Kellner engaged in a dialogue and work process with over 50 small and medium businesses, advising on measures to switch to new climate-neutral energy sources.661

On 7 July 2023, the Federal Council adapted the LNG Acceleration Act, focusing on the adoption of forward-looking regulations for energy supply and designing sustainable, climate-neutral conversions of liquefied natural gas terminals.662

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On 10 July 2023, Minister Habeck, Baden-Württemberg Prime Minister Winfried Kretschmann, the Baden-Württemberg Environment Minister Thelka Walker and the Bavarian State Minister Melanie Huml delivered a funding notice of approximately EUR161 million for a hydrogen project at the Bosch research campus. This project is part of a large joint European hydrogen project and Bosch will move towards large-scale production of stationary fuel cells.

On 12 July 2023, Minister Lemke reaffirmed that the Federal Ministry for the Environment and Consumer Protection would continue to work “to ensure that predominately synthetic fuels from renewable energies are used in order to make maritime transport climate-neutral.” His comment was in light of the EU’s approval of the Maritim Fuel Regulation, which applies to ships with a gross tonnage of over 5000 and involves a shore power requirement and renewable energies for shipping.

On 18 July 2023, Minister Wissing announced the first funding call for the Ground Power Directive, a fund for investment grants targeting the procurement of mobile or stationary environmentally friendly ground power systems to supply aircraft, as well as the charging and refuelling infrastructure required for operation.

On 19 July 2023, Minister Habeck reaffirmed Germany’s partnership with India and desire for deeper cooperation on renewable energies and green hydrogen.

On 20 July 2023, the European Commission approved the largest decarbonization project in Germany to date, granting state aid approval for the Federal Ministry for Economic Affairs and Climate Protection to promote the decarbonization of steel production at ThyssenKrupp Steel Europe. The BMWK will support the project with the state of North Rhine-Westphalia through around EUR2 billion, and the project is expected to help avoid 2.5 million tonnes of carbon emissions annually.

On 26 July 2023, the Federal Cabinet updated the National Hydrogen Strategy with more ambitious goals for 2030.

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On 9 August 2023, the Federal Cabinet approved the draft economic plan of the Climate and Transformation Fund (KTF) for 2024 and financial plan up to 2027, with a funding focus on the energy-efficient renovation of buildings. The KTF is projected to also support the development of a hydrogen economy in the future.

On 16 August 2023, the federal government approved the solar package presented by the BMWK with measures to triple the pace of solar expansion and achieve an annual expansion of 22 GW by 2026.

On 16 August 2023, the Federal Cabinet approved the draft law on heat planning and the decarbonization of heat networks submitted by the Federal Ministry of Housing, Urban Development and Construction and the Federal Ministry of Economics and Climate Protection. The aim of the draft law is to have heat planning in all of Germany’s approximately 11,000 municipalities so that citizens, but also businesses, know which energy source and supply they can count on locally, as well as generate half of the pipe-bound heat in a climate-neutral manner by 2030. By 2030, 30 per cent of heating networks will be supplied with heat from renewable energies or unavoidable waste heat and by 2040, 80 per cent of the heat will be supplied.

On 30 August 2023, the Cabinet approved the expansion of the German Recovery and Resilience Plan presented by the Federal Ministry of Finance, increasing support for measures that support the construction of refueling and charging infrastructure, and funding for efficient heating networks. This approval aims to strengthen Germany’s transition to a climate-neutral energy supply.

On 30 August 2023, Minister Habeck and State Minister for Economic Affairs Martin Dulig delivered a funding notice of EUR162 million to Sunfire GmbH which is working to produce electrolyzers that can be used to create large quantities of hydrogen from renewable energy.

On 31 August 2023, a new funding focus of EUR30 million within the Maritime Research Program of the Federal Ministry for Economic Affairs and Climate Protection was released with the intention to specifically help create the technological basis for the decarbonization of shipping and shipbuilding. The goal is to achieve climate neutrality in maritime transport by 2050.

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672 Cabinet decides to expand the German recovery and resilience plan, Federal Ministry of Finance (Berlin) 30 August 2023. Access Date: 1 November 2023. https://www.bundesfinanzministerium.de/Content/DE/Pressemitteilungen/Finanzpolitik/2023/08/2023-08-30-deutscher-aufbau-und-resilienzplan.html


On 4 September 2023, Minister Wissing announced a funding program of up to EUR500 million for projects which promote the self-generation and use of solar power for EVs in residential buildings.675

On 8 September 2023, Minister Habeck met with his Israeli counterpart Nir Barkat to reaffirm the German-Israeli energy partnership promoting innovative startups, networking young technology companies, and building up a climate-neutral energy supply.676 The Federal Ministry for Economic Affairs and Climate Action also welcomed delegations from Germany, Israel, and the United Arab Emirates for a trilateral dialogue on sustainable urban development, decarbonization of the building sector, energy efficiency, and smart buildings.

On 8 September 2023, the Bundestag passed an amendment to the Building Energy Act, initiating a modernization of Germany’s heat supply with more efficient, economical, and climate-friendly hearing technology.677 With the new regulations, renewable energies will become the standard in the building sector and gradually replace climate-damaging heating systems based on natural gas or crude oil. From 1 January 2024, all newly installed heating systems in new development areas much use at least 65 per cent renewable energy.

On 13 September 2023, the Federal Cabinet approved the draft ordinance presented by the BMWK to amend the Electrotechnical Properties Verification Ordinance, which aims to accelerate the connection of renewable systems to the grid.678 The largest expansion is expected in renewable systems, and the regulation will modernize the verification process for minimum technical requirements of electricity generation and storage systems.

On 14 September 2023, Federal Chancellor Olaf Scholz acknowledged the need to boost port capacity and sustainability in his opening speech at the 13th National Maritime Conference in Bremen, announcing the National Ports Strategy through which the federal government wants to make ports efficient and sustainable.679 Central to the energy transition, he emphasized the International Maritime Organization’s goal of achieving climate neutrality by 2050.

On 19 September 2023, the BMWK announced their EUR16 million funding measure for “Training Cluster 4.0 in the lignite regions,” which strengthens the dual training of skilled workers in the last three German coal mining areas as a result of the upcoming coal phase-out.680 To advance the structural change in coal regions, climate-friendly energy industries are replacing the careers of young workers. The mission statement for this program includes carbon-neutral energy supply, and securing skilled workers in innovation, sustainability, digitalization, and education.

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On 21 September 2023, the German Bundestag passed the Energy Efficiency Act with clear efficiency goals, including concrete efficiency measures for the public sector and companies, and energy efficiency standard definitions for data centers.681

On 27 September 2023, the Federal Ministry of Transport and Digital Infrastructure awarded contracts to 10 companies who will build and operate almost 8,000 new ultra-fast charging points at around 900 locations for electric vehicles.682 Locations cover rural, urban and suburban areas and makes the use of electric cars on medium and long-haul routes more attractive.

On 2 October 2023, State Secretary and Special Representative for International Climate Policy in the Federal Foreign Office Jennifer Morgan and the Parliamentary State Secretary in the Federal Ministry for Economic Affairs and Climate Protection Stefan Wenzel emphasized their commitment to a global expansion target for renewable energies in the run-up to the 28th Conference of the Parties to the United Nations Framework Convention on Climate Change during the International Climate and Energy Summit in Madrid.683

On 4 October 2023, the Federal Environment Ministry announced EUR800,000 in funding for a new facility from E-Lyte Innovations GmbH to produce electrolyte solutions for innovative battery and other energy storage technologies and promote the resource-efficient production of electrolytes for energy storage.684 The project is projected to save 100 cubic meters of water, 20 tonnes of cleaning waste, and 6,000 cubic meters of nitrogen annually, with eight tons of carbon emissions avoided.

On 4 October 2023, the Federal Cabinet approved the 2023 climate protection program.685 It amended the Building Energy Act to expedite the heat transition away from fossil fuels. The emergency energy measures package also includes an onshore wind energy law, offshore wind energy law, and the amendment to the Energy Industry Act.

On 4 October 2023, Minister Wissing presented over EUR31 million in funding to five shipping companies for modernization and decarbonization of coastal ships.686

On 11 October 2023, the Sixth Franco-German Energy Forum took place virtually, organized by the Franco-German Office for the Energy Transition together with the BMWK, the Foreign Office and the French


Ministry for Energy Transition. They discussed ways to improve the regulatory framework for hydrogen in various sectors across their countries.

On 13 October 2023, State Secretary Michael Kellner delivered a funding notice for a research project on swam-capable shuttle vehicles that explores “individualized public transport” in the NeMo.bil funding project, aiming to promote electrified, ultralight, climate-friendly transportation. The project is funded as part of the future investment program for vehicle manufacturers and the supplier industry “New Vehicle and System Technologies,” running until June 2026.

On 23 October 2023, Parliamentary State Secretary of the BMWK Stefan Wenzel and Algerian Minister for Energy and Mining Mohamed Arkab opened the 5th German-Algerian Energy Day in Algiers as a part of the German-Algerian Energy Partnership. They discussed converting the gas pipeline corridor which runs from Algeria through Central Europe to Germany into green hydrogen. There was also a focus on promoting solar energy in Algeria.

On 2 November 2023, Minister Habeck participated in bilateral discussions with his British counterparts on economic, trade, climate, and energy policy issues. They reaffirmed their collaborative efforts in the areas of hydrogen, energy security, and renewable energies.

Germany has fully complied with its commitment to ensure that both its regulations and investments towards clean energy technologies are more affordable for all nations and help drive a global, just energy transition for workers and communities that will leave no one behind. Acknowledging the integral role of clean energy in future innovation, Germany has invested in multiple renewable energy projects to transform the car, ship, and air travel sector, while strengthening partnerships with countries on decarbonization strategies and continuing to fund research and development projects.

Thus, Germany receives a score of +1.

**Analyst: Annabelle Liao**

**Italy: +1**

Italy has fully complied with its commitment to ensure that both its regulations and investments towards clean energy technologies are more affordable for all nations and help drive a global, just energy transition for workers and communities that will leave no one behind.
On 6 June 2023, Minister of the Environment and Energy Security Gilberto Fratin attended the International Energy Agency Conference in Paris.691 During the meeting, Minister Fratin spoke on the importance of market incentives and the mobilization of private entities in clean energy transition.

On 19 June 2023, Minister Fratin met with the Transport, Telecommunications and Energy Council of the European Union.692 He highlighted the importance of a new market design for the electricity market system, one that prioritizes sustaining natural gas capacity in addition to deploying new renewable energy.

On 21 June 2023, Minister Fratin expressed his opposition to increasing the 2030 emission reduction target for vehicles from 30 per cent to 45 per cent during a debate at the EU Council.693 He promoted an approach focusing on complementing combustion vehicles with low-emission fuels and clean energy technologies.

On 30 June 2023, the Ministry of the Environment and Energy Security (MEES) submitted its proposed Integrated National Energy and Climate Plan to EU regulatory authorities.694 The plan prioritizes increasing the adoption of renewables and meets almost all EU environmental and climate targets.

On 5 July 2023, Minister Fratin issued a memorandum to the Regulatory Authority for Energy, Networks, and the Environment instructing it to diversify national energy production.695 The new organization plan focuses on the transition to renewables by phasing out electricity production from oil-fueled power plants and keeping lower emission-producing coal-fired plants running at minimum levels.

On 6 July 2023, the MEES signed a memorandum of understanding with the National Council for Economics and Labour.696 This memorandum signals a partnership between the two organizations on collaborating towards a just and economically pragmatic clean energy transition.

On 10 July 2023, the MEES announced the winning projects for a government competition for the construction of 46 new biomethane production plants.697 This action helps advance the biomethane industry in Italy and the transition towards clean biofuels.

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694 Clima: il MASE ha trasmesso a Bruxelles la proposta di PNIEC, Ministero dell’Ambiente e della Sicurezza Energetica (Roma) 30 June 2023. Translation provided by Google Translate. Access Date: 5 November 2023.
On 20 July 2023, the MEES issued a decree launching the Guarantees of Origin system. This decree promotes transparency and helps ensure that customers will be able to see which portions of their energy come from clean renewable sources.

On 2 August 2023, Minister Fratin voted against the EU Nature Restoration Regulation during a meeting of the EU council. During his speech, he noted the regulation’s exemptions for renewable energy plants as a significant reason for his opposition.

On 21 August 2023, Minister Fratin issued a decree establishing a EUR200 million fund for 2024-2025 to deploy solar power systems for families living in economic hardship. This measure aims to provide impoverished families with access to energy that is consistent, affordable, and clean.

On 9 September 2023, Italy joined the Global Alliance for Biofuels. This international partnership aims to promote the supply and usage of biofuels as a clean energy alternative to traditional fuel sources.

On 21 September 2023, the MEES hosted the first National Platform for Sustainable Nuclear Energy. The meeting assembled researchers, non-government organizations, and private companies to collaborate on a plan for the reintroduction of nuclear energy in Italy.

On 28 September 2023, Minister Frastin spoke at an International Energy Agency meeting on the importance of ensuring supply chains of critical minerals. He emphasized Italy’s efforts to ensure a supply of raw materials through recycling and innovations in sustainable energy technologies.

On 10 October 2023, Italy received approval for their plan to use EUR100 million in EU funds to deploy electrolyzers, which are crucial for the production of clean hydrogen.

On 23 October 2023, Italy attended the Eighth Strategic Dialogue of the Carbon Market Platform in Tokyo. The discussions centered on “market integrity, enhancing integrity in voluntary carbon markets and enhancing Article Six of the Paris Agreement implementation.” Participants mentioned the need for an increase in transparency for carbon markets.

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704 Energia: ok Commissione a sostegno italiano per 100 milioni a elettrolizzatori, Ministero dell’Ambiente e della Sicurezza Energetica (Roma) 10 October 2023. Translation provided by Google Translate. Access Date: 5 November 2023. https://www.mase.gov.it/comunicati/energia-ok-commissione-sostegno-italiano-100-milioni-elettrolizzatori
On 26 October 2023, the MEES launched a subsidization program for companies and professionals to install electric vehicle chargers.\(^{706}\) This initiative aims to hasten the clean energy transition by increasing the accessibility and availability of necessary infrastructure for electric vehicles.

On 31 October 2023, the MEES launched the project selection process for a EUR100 million hydrogen fuel investment program.\(^{707}\) This program aims to advance clean hydrogen fuel usage and innovation in Italy.

On 13 November 2023, the MEES initiated an investment selection process with funds totaling EUR100 million for projects aiming to expand domestic electrolyser production.\(^{708}\) This program seeks to bolster domestic clean hydrogen fuel production to meet growing local demand.

On 17 November 2023, the MEES allocated EUR502 million in funding towards the research and development of clean energy technologies during the 2024-2026 period.\(^{709}\)

Italy has fully complied with its commitment to ensure that both its regulations and investments towards clean energy technologies are more affordable for all nations and help drive a global, just energy transition for workers and communities that will leave no one behind. Domestically, Italy has taken action by ensuring that its clean energy movements benefit many industries and to also consider the needs low-income communities. Internationally, Italy has partnered with other countries to improve clean energy access for all.

Thus, Italy receives a score of +1.

**Analyst: Sara Cai**

**Japan: +1**

Japan has fully complied with its commitment to ensure that both its regulations and investments towards clean energy technologies are more affordable for all nations and help drive a global, just energy transition for workers and communities that will leave no one behind.

On 17 July 2023, Prime Minister Fumio Kishida visited Emirati President Sheikh Mohammed bin Zayed Al Nahyan in Abu Dhabi to focus on promoting green technology.\(^{710}\) The two countries agreed on developing a new program which would accelerate energy security in both regions, but the two countries continued to ensure Japan’s access to Emirati oil.

On 31 August 2023, the Ministry of Economy, Trade and Industry, the U.S. Department of Energy, National Energy Technology Laboratory (NETL), and the New Energy and Industrial Technology Development Organization (NEDO) hosted the US-Japan Carbon Recycling Working Group in Pittsburgh.\(^{711}\) The discussions centred on the collaboration between NETL’s National Carbon Capture Center and NEDO’s base


for carbon recycling at Osaki-Kamijima. Japan and the US agreed to expanding clean energy technologies to the Asia-Pacific region.

On 27 September 2023, the Ministry of Economy, Trade and Industry and the Economic Research Institute for ASEAN [Association for South East Asian Nations] and East Asia (ERIA) hosted the CCUS Network Forum in Hiroshima.\textsuperscript{712} Discussions were held regarding advancing energy transition in Asia, including enhanced oil recovery and enhanced gas recovery for increased energy security.\textsuperscript{713} The participants recognized the potential of Recycled Carbon Fuels in reducing carbon emissions which would provide increased energy security through supply chains.

On 27 September 2023, the Minister of Economy, Trade, and Industry Nishimura Yasutoshi signed a Memorandum of Cooperation on Transboundary Transport and Storage of Carbon Dioxide with the Japan Organization for Metals and Energy Security and PETRONAS, the Malaysia national oil company at the third CCUS Network Forum held in Hiroshima.\textsuperscript{714} This memorandum centred on launching a Carbon Dioxide Capture and Storage project in collaboration between the two countries. Malaysia was identified as having suitable land for geological storage of carbon emitted from Japanese industry and thus being able to help lower Japan’s emissions.

On 28 September 2023, the Ministry of Environment and Ministry of Economy, Trade and Industry co-hosted the Asia Zero Emission Committee conference to develop carbon markets and the Joint Crediting Mechanism (JCM).\textsuperscript{715} The conference involved collaboration between member countries of AZEC including Australia, Brunei, Malaysia, Cambodia, Indonesia, Laos, Thailand, Singapore and Vietnam. This conference allowed participants to exchange information of JCM and discuss developing carbon markets, thereby implementing Article 6 of the Paris Agreement.

On 29 September 2023, the Ministry of Economy, Trade and Industry and the Clean Fuel Ammonia Association held the Third International Conference on Fuel Ammonia in Tokyo with the aim to develop stable ammonia markets and supply chains.\textsuperscript{716} At the conference, both public and private sectors shared strategies in technology of fuel ammonia development.

On 3 October 2023, the Ministry of Environment selected projects for the city-to-city collaboration program to support decarbonization efforts by overseas subnational governments.\textsuperscript{717} The city-to-city collaboration program involves working with private sectors and research institutions as well as the government. These parties identify projects and conduct studies regarding the introduction of decarbonization technologies domestically. This program is a part of the Clean Cities Partnership Program launched by the Ministry of Education.

On 5 October 2023, Ambassador for Climate Change Toshihiro Kitamura represented Japan at the High-Level Pledging Conference for the Second Replenishment of the Green Climate Fund in Bonn, Germany.\textsuperscript{718} At this


conference, the Government of Japan intends to contribute JPY165 billion to the Green Climate Fund to address impacts of climate change in developing nations.

On 13 October 2023, Maiko Uga from the Office of Market Mechanisms within the Ministry of the Environment, Senior Planning Officer Yuji Mizuno from the Ministry of Foreign Affairs and Senior Negotiator for Climate Change, Norihiro Kimura from the Ministry of Economy, Trade and Industry attended the first Joint Committee of the Joint Crediting Mechanism between the Democratic Socialist Republic of Sri Lanka and Japan in Battaramulla, Sri Lanka.\textsuperscript{719} Japan’s promotion of the JCM in Sri Lanka aims to reduce green-house gas emissions through decarbonization technology in Sri Lanka.

On 23 October 2023, the Ministry of the Environment co-hosted the Eighth Strategic Dialogue of the Carbon Market Platform in Tokyo with the German Federal Ministry for Economic Affairs and Climate Action.\textsuperscript{720} It was attended by the officials of the G7 members. The discussions centred on “market integrity, enhancing integrity in voluntary carbon markets and enhancing article 6 of the Paris Agreement implementation.” Participants mentioned the need for an increase in transparency for carbon markets.

On 30 October 2023, Ambassador Jun Yamada signed the Memorandum of Cooperation on the Joint Crediting Mechanism in Kazakhstan.\textsuperscript{721} This makes Kazakhstan the 28th partner country in the Joint Crediting Mechanism. In this agreement, Japan will implement projects to reduce emissions and contribute to global decarbonization as outlined by the Paris Agreement in Kazakhstan.

On 30 October 2023, Parliamentary Vice-Minister of the Environment of Japan Asahi Kentaro attended the preparatory meeting for the 28th Conference of the Parties (COP28) to the United Nations Framework Convention on Climate Change in Abu Dhabi, where Asahi stated that goods and services tax should be used to accelerate climate actions.\textsuperscript{722} He affirmed that global greenhouse gas emissions must peak by 2025 at the latest to be consistent with the 1.5°C goal.

On 17 November 2023, Prime Minister Fumio attended a summit with the President of the Republic of Korea Yoon Suk Yeol at Stanford University where he discussed relations with the Republic of Korea in terms of trade and technology.\textsuperscript{723} This discussion included partnering to develop technologies that assist with decarbonization and clean energy.

On 23 November 2023, the Ministry of the Environment published its proposal, Strategic Program for ASEAN Climate and Environment (SPACE), which aims to help ASEAN Member States address climate change, biodiversity loss and pollution as well as the global energy crisis.\textsuperscript{724} SPACE consists of the three pillars, Climate Change, Pollution and Biodiversity, with each activity being facilitated directly between each ASEAN Member State and Japan. Regarding decarbonization, the Ministry of the Environment proposed financing support for projects which reduce methane emissions in ASEAN Member States. Furthermore, the Ministry of the Environment emphasized the need for the dissemination of decarbonization technologies such as carbon capture and storage to ASEAN Member States.


\textsuperscript{723} Prime Minister Kishida attends a Japan-ROK event at Stanford University, Ministry of Foreign Affairs of Japan (Tokyo) 17 November 2023. Access Date: 2 December 2023. https://www.mofa.go.jp/a_o/na/kr/page1e_000812.html

\textsuperscript{724} Strategic Program for ASEAN Climate and Environment, Ministry of Environment (Tokyo) 23 November 2023. Access Date: 3 December https://www.env.go.jp/content/000159223.pdf
On 23 November 2023, the Ministry of Environment outlined the goals of LD-Tech which will help Japan achieve carbon neutrality by 2050 through its ability to reduce energy-derived carbon dioxide emissions. The LD-Tech certification system has equipment that is effective for decarbonization efforts, and the Ministry of Japan is proactively disseminating information on certified products. The goal is that by publishing the Ministry of Environment’s LD-Tech list, manufacturers and research institutes can refer to the development status of decarbonization technology and use it for decision-making in their future development. By using this technology, the Ministry of Environment hopes by guiding manufacturers and users, greenhouse gas emissions can be reduced by 46 per cent in 2030.

On 2 December 2023, at COP28 in Dubai, Japan was one of the signatories to a pledge to triple nuclear power. The declaration cites the benefits of nuclear energy, such as low greenhouse gas emissions, combatting climate change, and the intent to scale this technology globally.

On 1 December 2023, the Institute for Global Environmental Strategies organized a seminar with domestic governments to discuss the zero-carbon transition where the mayors of Tokyo 23 wards declared their initiatives towards zero-carbon efforts. Furthermore, the Ministry of Environment announced its decision to create 100 “decarbonization areas” which will aim to achieve zero carbon emissions by 2030.

Japan has fully complied with its commitment to ensure that both its regulations and investments towards clean energy technologies are more affordable for all nations and help drive a global, just energy transition for workers and communities that will leave no one behind. Japanese representatives have attended international conferences regarding clean energy technologies, made agreements on JCMs with developing countries and are working on implementing their LD-Tech certification system which will help ensure decarbonization and carbon neutrality by 2050 in alignment with the Paris Agreement.

Thus, Japan receives a score of +1.

**United Kingdom: +1**

The United Kingdom has fully complied with its commitment to ensure that both its regulations and investments towards clean energy technologies are more affordable for all nations and help drive a global, just energy transition for workers and communities that will leave no one behind.

On 26 May 2023, the Foreign, Commonwealth and Development Office (FCDO) launched the Ukraine Resilience and Energy Security Programme (URES) which aims to support Ukraine in its transition to more efficient energy use and decrease reliance on hydrocarbons. GBP62 million will be provided to support Ukraine’s energy security using expertise from the United Kingdom. The program will increase investment and development of green energy in Ukraine.

On 5 June 2023, the Transforming Energy Access Learning Programme (TEA-LP), an organization under UK Aid, held a four-day workshop to educate people about improving energy access education in master’s programs.

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and was aimed at 23 new partner universities in the Indo-Pacific region.\textsuperscript{729} The program aimed to equip 31 universities in the Global South on how to deliver effective master’s programs regarding energy access.

On 12 June 2023, Energy Catalyst, a British program funded by the FCDO, and the TEA Platform sent representatives to the Sankalp West Africa Summit to discuss alternatives to diesel, focusing on the development of technology and innovation in the West Africa Region.\textsuperscript{730}

On 14 June 2023, GBP15 million was spent by the FCDO on URES to assist with delivering generators and green innovations to Ukraine.\textsuperscript{731}

On 15 July 2023, the Transforming Energy Access platform sponsored 30 Chevening scholarships which aim to help leaders in the clean energy sector to emerge in the Global South as part of Work Youth Skills Day.\textsuperscript{732} TEA also increased spending on the project by GBP2.5 million to go towards helping youth gain employment in the field of energy.\textsuperscript{733}

On 4 September 2023, the Climate Compatible Growth program, funded by the FCDO, launched applications for the Energy Modelling Platform for Latin America and the Caribbean conference taking place in early 2024.\textsuperscript{734} This conference will contribute to creating investment cases for the transition to clean energy in the region of Latin America and the Caribbean and coach local businesses in energy planning.

On 18 September 2023, the Brilho program carried out training sessions for credit management of companies that supply solar products in Mozambique.\textsuperscript{735} This training, funded by the FCDO aims to address the issues purchasers of solar products in Mozambique face and assist with increasing the presence of clean energy in Mozambique.

On 26 September 2023, the UK and the US signed the Memorandum of Understanding on trade cooperation and clean energy.\textsuperscript{736} This memorandum supports global decarbonization by phasing out coal power and helping communities reliant on fossil fuel economies transition in energy use.


On 28 September 2023, the Department for Energy Security and Net Zero backed the launch of the Inclusive Smart Solutions program. This program aims to help low-income consumers participate in the UK's smart energy system and will be carried out between September 2023 and March 2025. The first phase of the program took place from 28 September to 29 October 2023 and aimed to research existing barriers faced by low-income consumers to draft effective solutions.

On 23 October 2023, the UK attended the Eighth Strategic Dialogue of the Carbon Market Platform in Tokyo. The discussions centred on “market integrity, enhancing integrity in voluntary carbon markets and enhancing article 6 of the Paris Agreement implementation.” Participants mentioned the need for an increase in transparency for carbon markets.

On 26 October 2023, the House of Commons gave the Energy Act 2023 Royal Assent status which will increase competition in Great Britain’s electricity networks and aims to strengthen energy security, which will help the government deliver net zero by 2050. In this act, the government also introduced a licensing framework for carbon transport and storage for carbon capture sites, the first in the UK. This act will lead to legislation for fusion regulation and commercial arrangements for carbon capture and storage, hydrogen production, low carbon heat schemes and carbon dioxide transport and storage.

On 3 November 2023, Energy Security Secretary Claire Coutinho and German Vice Chancellor Robert Habeck signed a partnership on their commitment to net zero and energy. This commitment involves the collaboration of expertise to improve the development of carbon capture, utilization and storage.

On 14 November 2023, the Department for Business and Trade published the Enhanced Trade Partnership Arrangement between Taiwan and the UK which aims to strengthen trade relations between the two countries by developing energy infrastructure and wind energy models.

On 22 November 2023, the Department for Energy Security and Net Zero launched the Climate Change Agreements Consultation, which seeks proposals from energy suppliers, trade associations, and non-government organizations to add three new target periods to provide further reduction pledges prior to the 2050 deadline.

On 27 November 2023, Prime Minister Rishi Sunak pledged GBP29.5 billion at the Global Investment Summit which will go to multiple sectors, including funding the renewable energy sector and clean energy efforts.

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On 1 December 2023, Prime Minister Sunak announced GBP1.6 billion for renewable energy and forest conservation at the 28th Conference of the Parties (COP28) to the United Nations Framework Convention on Climate Change in Dubai.\textsuperscript{744} Prime Minister Sunak also announced the joint investment of GBP11 billion towards the UK’s new windfarm to boost British renewables and energy security.

On 2 December 2023, at COP28, the UK was one of the signatories to a pledge to triple nuclear power.\textsuperscript{745} The declaration cites the benefits of nuclear energy, such as low greenhouse gas emissions, combatting climate change, and the intent to scale this technology globally.

On 1 December 2023, Energy Security Secretary Coutinho announced GBP85 million at COP28 for forest conservation and cutting methane emissions. Secretary Coutinho also announced the UK government’s intent to sign partnerships with Brazil on facilitating decarbonization through research and technology development.\textsuperscript{746} This pledge of GBP85 million includes up to GBP40 million to go to funding the UK’s Climate Finance Accelerator which aims to aid countries finance their climate commitments under the Paris Agreement.

On 1 December 2023, the FCDO spent over GBP15 million on URES to assist with delivering generators and green innovations to Ukraine.\textsuperscript{747}

On 2 December 2023, the Department for Energy Security and Net Zero published the Net Zero Government Initiative: UK Roadmap to Net Zero Government Emissions, which will lay the framework for achieving net-zero emissions by 2050.\textsuperscript{748} In this report, the UK government aims to reduce all direct emissions from public sector buildings by 50 per cent by 2032 and to be completely net zero by 2050 through renewable energy plans and frameworks.

On 2 December 2023, at COP28 in Dubai, the UK was among the participants that launched the Coal Transition Accelerator to “share expertise, design new policies including through best practices and lessons learned, and unlock new sources of public and private financing to facilitate just transitions from coal to clean energy.”\textsuperscript{749}

The United Kingdom has fully complied with its commitment to ensure that both its regulations and investments towards clean energy technologies are more affordable for all nations and help drive a global, just energy transition for workers and communities that will leave no one behind. The United Kingdom has assisted with increasing clean energy practices in Mozambique, Ukraine, West Africa, the Indo-Pacific region as well as Latin America and the Caribbean. Furthermore, the United Kingdom House of Commons has given the Energy Act 2023 the status of Royal Assent and has collaborated with the United States and Germany by signing agreements regarding commitments to clean energy.

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

\textit{Analyst: Madeline Hirons}

\textsuperscript{744}PM Speech at COP28 Climate Summit, Prime Minister’s Office (London) 1 December 2023. Access Date: 2 December 2023. https://www.gov.uk/government/speeches/pm-speech-at-cop28-climate-summit-4-january-2023
\textsuperscript{745}At COP28, Countries Launch Declaration to Triple Nuclear Energy Capacity by 2050, Recognizing the Key Role of Nuclear Energy in Reaching Net Zero, US Department of Energy, 1 December 2023. Access Date: 5 December 2023. https://www.energy.gov/articles/COP28
\textsuperscript{749}Global Leaders Gather at COP28 to Launch a New Initiative to Support Acceleration of Just Coal Transitions, Elysee (Paris) 2 December 2023. Access Date: 5 December 2023. https://www.elysee.fr/admin/upload/default/0001/15/5887a8f79e48ee44de83f61dc0ad3157b22dec30.pdf
United States: +1
The United has fully complied with its commitment to ensure that both its regulations and investments towards clean energy technologies are more affordable for all nations and help drive a global, just energy transition for workers and communities that will leave no one behind.

On 22 May 2023, the Department of Energy (DOE) announced an investment of USD150 million into the National Renewable Energy Laboratory. This funding will go towards modernizing lab infrastructure in support of cutting-edge research and development on clean energy technologies.

On 22 May 2023, the DOE announced nearly USD42 million in funding for multiple clean hydrogen technology projects. This investment supports various initiatives to develop clean fuel sources and achieve decarbonization.

On 22 May 2023, the DOE invested USD17.8 million towards the establishment of a North American research consortium. This consortium includes universities from the US, Mexico, and Canada, and aims to aid regional governments and institutions in improving energy grid decarbonization and resilience.

On 23 May 2023, the DOE announced USD34 million in funding to deploy clean energy technology in 18 native communities. This money will go towards strengthening access to solar power, increasing grid resilience, and ensuring all community buildings have access to electricity.

On 24 May 2023, the DOE launched the Clean Fuels and Products Shot initiative. This program aims to contribute towards meeting net-zero carbon emissions by 2050 goals through developing sustainable sources of carbon resources across various sectors.

On 31 May 2023, the DOE announced USD46 million total in research funding to eight companies. This investment will go towards advancing research into the field and developing plans for a pilot fusion power plant.

On 7 June 2023, the DOE announced USD80 million in grant funding for small and medium manufacturing firms. This grant aims to aid firms in transitioning to clean energy and adopting DOE recommendations for the lowering of energy usage and carbon emissions.

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On 12 June 2023, the DOE announced USD192 million in funding for the recycling of batteries from consumer products. This money will go towards launching a new research and development consortium for battery recycling technology and supporting previously launched battery recycling programs.

On 13 June 2023, the DOE invested USD13.5 million across 12 projects to grow the workforce for the solar energy industry. These projects will contribute to fostering the workforce growth necessary to meet government decarbonization goals.

On 15 June 2023, the DOE announced USD135 million in funding across 40 projects to reduce carbon emissions from the industrial sector. This funding will go towards various initiatives to foster a transition towards clean energy through use of new transformational technologies and innovations.

On 22 June 2023, the DOE allocated more than USD21 million in funding for 30 projects to promote commercialization of clean energy. These projects aim to advance adoption of clean energy technology and solutions by businesses and the market.

On 6 July 2023, the DOE invested USD45 million to boost manufacturing for the domestic solar power industry. These boosts to the domestic supply chain were deemed necessary by the DOE to meet planned green energy transition goals.

On 10 July 2023, the DOE invested USD23.4 million across 16 projects to foster carbon management deployment among local industries and facilities. This funding goes towards supporting various organizations in providing technical assistance and education on carbon management to stakeholders.

On 10 July 2023, the DOE awarded USD72 million in grants across 296 projects supporting small business research and development projects on clean energy and climate. This investment supports clean energy innovation and solutions advancement in the US.

On 13 July 2023, the DOE announced USD32 million investment into strengthening supply chains for critical minerals and rare earth metals. These materials are a critical component of most clean energy technologies and boosting their availability is an important step in green transition.

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On 18 July 2023, Secretary of Energy Jennifer Granholm met with Indian Minister of Petroleum and Natural Gas Hardeep Singh Puri. This meeting was the third of the US-India Strategic Clean Energy Partnership and is part of ongoing bilateral cooperation towards facilitating clean energy transition and trade.

On 21 July 2023, Secretary Granholm met with Brazil’s Minister of Mines and Energy Alexandre Silveira. The two issued a joint statement highlighting their commitment to clean energy cooperation, particularly through the mobilization of local communities and the private sectors. This meeting is a continuation of the bilateral partnership through the U.S.-Brazil Energy Forum (USBEF) in accordance with the USBEF Action Plan 2023-2024.

On 21 July 2023, the DOE announced a USD20 million funding opportunity for projects optimizing the recycling of solar energy systems and end of lifespan processes. The chosen projects will work with the government on developing solutions towards improving material recovery and lowering the costs of solar power systems.

On 22 July 2023, Secretary Granholm attended the G20 Energy Ministerial, meeting with energy ministers from other G20 members. The members discussed and collaborated on international efforts to bring about the clean energy transition and made various commitments dedicated to advancing towards sustainable development and net-emissions goals.

On 24 July 2023, the DOE provided USD100 million in funding for lower levels of government to purchase goods sustainably derived from carbon pollution. This action works towards boosting the market for clean products recycled from carbon emissions and further promotes the green economy.

On 26 July 2023, the DOE announced USD33 million in research funding across 14 projects. This funding helps advance climate and energy technology research and development.

On 28 July 2023, the DOE launched the “Cleanup to Clean Energy” initiative to repurpose DOE lands for clean energy generation through new sources.
On 31 July 2023, the DOE issued USD453.5 million from the Puerto Rico Energy Resilience Fund towards deploying rooftop solar energy installations for residents.\(^{773}\) These rooftop solar systems will provide residents with access to consistent power and bolster sustainable electricity generation in the region.

On 15 August 2023, Secretary Granholm hosted the first Net Zero World Ministerial in Seattle, attended by delegations from eight countries and the Bill and Melinda Gates Foundation.\(^{774}\) The goal of the ministerial was to share knowledge on clean energy technologies in order to foster international collaboration on development and implementation.

On 15 August 2023, Secretary Granholm hosted 21 energy ministers from the Asia-Pacific Economic Cooperation group for an Energy Ministerial Meeting lasting until August 16.\(^{775}\) During the meeting, work began on establishing a Just Energy Transition Initiative to accelerate domestic green energy transitions among present countries.\(^{776}\) Additionally, the US issued a joint statement with 10 other countries expressing their commitment to reduce methane emissions in the fossil energy sectors.\(^{777}\) This is a direct reaffirmation of goals set by the international community at the 2021 United Nations Climate Change Conference, particularly the Global Methane Pledge.

On 17 August 2023, the US awarded USD34 million to 19 research projects across universities and the private sector.\(^{778}\) These projects focus on developing solutions to bolster the availability and affordability of clean hydrogen as an alternative to traditional polluting fuel sources.

On 21 August 2023, the DOE invested USD30 million into lowering the costs of critical mineral production.\(^{779}\) This helps to bolster the critical mineral supply line which is essential for the building of most clean energy technologies.

On 25 August 2023, the DOE awarded USD126 million to 90 small businesses with projects addressing key DOE interests.\(^{780}\) Among other DOE priorities, chosen projects included those that focused on clean energy and fusion energy research and development.

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On 30 August 2023, the US provided USD350 million in funding to the oil and gas sector to help reduce methane emissions.\(^{781}\) These grants will help oil and gas producers identify and apply means of reducing methane emissions from their operations, thus lowering the climate change effects of energy produced from these fuel sources.

On 31 August 2023, the Biden-Harris Administration announced USD15.5 billion in funding to transition the domestic automotive industry towards electric vehicles.\(^{782}\) This money will help ensure a measured and just transition towards clean energy technology while safeguarding the industry and prospects of workers.

On 6 September 2023, the Biden-Harris Administration invested USD13 million across seven hydropower research and development projects.\(^{783}\) This funding supports continued innovation in the hydropower sector and advancements in affordability, accessibility, and effectiveness.

On 6 September 2023, the DOE announced USD150 million towards supporting sustainable cost-effective domestic production of critical minerals.\(^{784}\) This is meant to bolster supply chains in an environmentally friendly way to match the demand needs of clean energy technology production.

On 9 September 2023, President Joe Biden joined other global leaders to launch the Global Biofuels Alliance.\(^{785}\) This partnership aims to ensure the supply and promote the deployment of biofuels as a clean energy alternative to traditional polluting fuel sources.

On 14 September 2023, the DOE announced USD25 million in funding through the Clean Energy to Communities Partnerships Program.\(^{786}\) This program works closely with communities to research, model, and deploy clean energy systems that are suitable for local conditions and needs.

On 20 September 2023, the DOE announced USD47.7 million for 16 clean hydrogen technology projects.\(^{787}\) This will support research and development in this field, helping transition to alternative clean fuel sources.


On 21 September 2023, the DOE provided USD72 million for projects accelerating the manufacturing and deployment of hydro and wind energy technologies. This funding will support these research and development initiatives in advancing these clean energy fields through innovation.

On 28 September 2023, the DOE invested USD38 million for 13 projects advancing clean energy technology deployment in Native American communities. These projects will bolster the clean energy transition by providing accessibility to previously disconnected communities.

On 29 September 2023, the DOE issued USD264 million for 29 projects to develop solutions for the Energy Earthshots Initiative. Funded research and development projects will help address scientific challenges and advance clean energy technology such as to support DOE climate and clean energy goals.

On 11 October 2023, the DOE gave 66 hydro facilities a total of more than USD38 million to support hydroelectric power generation. This investment will help these facilities sustain and expand their operations and clean energy production.

On 12 October 2023, President Biden announced the Affordable Home Energy Shot initiative. This Earth shot advances innovation in clean energy solutions for the housing sector.

On 13 October 2023, President Biden announced the investment of USD7 billion to launch seven Clean Hydrogen Hubs. These deployments will accelerate the clean energy transition by allowing for commercial-scale introduction of clean hydrogen fuel.

On 19 October 2023, President Biden opened applications for the Low-Income Communities Bonus Credit Program. This program offers a tax incentive for solar and wind projects serving low-income communities across America, thus furthering the transition toward clean energy deployment.

On 23 October 2023, the US attended the Eighth Strategic Dialogue of the Carbon Market Platform in Tokyo. The discussions centred on “market integrity, enhancing integrity in voluntary carbon markets and enhancing...

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On 26 October 2023, the DOE announced USD36 million across eleven projects supporting marine carbon dioxide removal through capture and storage technologies. This funding will help advance decarbonization through clean energy technologies.

On 2 November 2023, the DOE provided various solar companies and non-profits a total of USD440 million to install rooftop solar systems in Puerto Rico. This initiative will support clean energy use in the region and ensure vulnerable households have access to consistent sustainable electricity.

On 14 November 2023, the DOE announced the provision of over USD444 million into 16 projects bolstering the carbon management industry. These projects aim to expand the deployment of clean energy technology infrastructure needed to reduce emissions from industrial operations.

On 15 November 2023, the DOE invested USD3.5 billion into boosting domestic battery production. This money will go towards expanding the production of critical minerals and battery components to support growing battery demand from clean energy technologies.

On 16 November 2023, the DOE selected 27 training and assessment centers to be awarded USD40.8 million to foster clean energy workforce development. Supporting these programs improves accessibility to clean energy career pathways and helps to meet the demand for technical knowledge and jobs in the clean energy economy.

On 27 November 2023, the DOE announced the provision of USD275 million across seven projects to expand clean energy supply chains and manufacturing. This funding will help accelerate clean energy transition while ensuring the health of domestic industries and economies.

On 29 November 2023, the DOE selected a slate of local partners to receive USD13.85 million for the deployment of residential solar systems in Puerto Rico. This action helps to expand clean energy infrastructure to help vulnerable households and accelerate the use of renewable energy.

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797 DOE Announces Up to $440 Million to Install Rooftop Solar and Batteries in Puerto Rico’s Most Vulnerable Communities, United States Department of Energy (San Juan) 2 November 2023. Access Date: 5 November 2023.
On 30 November 2023, the DOE provided USD3 million in funding to transition two tribal community colleges to clean energy. These projects help provide access to clean energy to traditionally disadvantaged communities.

On 2 December 2023, at the 28th Conference of the Parties (COP28) to the United Nations Framework Convention on Climate Change in Dubai, the US was one of the signatories to a pledge to triple nuclear power. The declaration cites the benefits of nuclear energy, such as low greenhouse gas emissions, combatting climate change, and the intent to scale this technology globally.

On 2 December 2023, at COP28 the US was among the participants that launched the Coal Transition Accelerator to “share expertise, design new policies including through best practices and lessons learned, and unlock new sources of public and private financing to facilitate just transitions from coal to clean energy.”

The United States has fully complied with its commitment to ensure that both its regulations and investments towards clean energy technologies are more affordable for all nations and help drive a global, just energy transition for workers and communities that will leave no one behind. The United States has taken steps to invest in the production of critical minerals, thus securing supply chains. Moreover, through numerous initiatives, it has funded the research, development, and deployment of various forms of clean energy technologies. Lastly, the United States has taken to fostering international cooperation and collaboration on clean energy trade, transition, and technology.

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

Analyst: Sara Cai

European Union: +1

The European Union has fully complied with its commitment to ensure that both its regulations and investments towards clean energy technologies are more affordable for all nations and help drive a global, just energy transition for workers and communities that will leave no one behind.

On 17 July 2023, the EU and Argentina established cooperation on areas on renewable energy, hydrogen and methane emissions abatement at the EU-CELAC (Community of Latin American and Caribbean States) Summit in Brussels. Both the EU and Argentina have agreed to work together to ensure a just transition of these energy sources into communities, and to reduce leakages in operations.

On 17 July 2023, the Committee on Employment and Social Affairs held a hearing on “Future-proof jobs and skills training for the digital and green transition.” During this discussion, members discussed the merits of ensuring that the current and future generations possess the skills required to reap the benefits of green and digital transitions.

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On 21 September 2023, a loan of EUR175 million by the European Investment Bank (EIB) to Germany and potentially other EU countries to develop low carbon energy infrastructure was signed.\(^808\) The loan will finance a series of renewable energy generation plants including onshore wind and solar PV located in Germany and other EU countries.

In October 2023, the EU released a budget for EUR22 million to support the government of Vietnam, and the EU Vietnam Sustainability Energy Transition Programme.\(^809\) This is part of a larger EUR142 million grant by the EU to Vietnam to support clean energy transitions, and to help them achieve net zero emissions by 2050.

In October 2023, the EU Council adopted new rules for the REPowerEU plan, which seeks to reduce dependence on Russian fossil fuel imports and facilitate the development of renewable energy supplements.\(^810\) The plan’s overall commitments commit to the goal of reducing the EU greenhouse gas emissions by at least 55 per cent by 2023, and recent negotiations ensure the focus on this goal, despite international energy market disruptions.

On 5 October 2023, Members of the European Parliament (MEPs) reassessed the EU’s resources to continue developments in clean energy, in the wake of inflationary shocks caused by Russia’s invasion of Ukraine.\(^811\) The discussion revealed new financing solutions including: “corporate tax-based own resources, the financial transaction tax, a new fair border mechanism, a tax on crypto-assets, green own resources and national contributions based on statistics.” These changes will be formalised in 2024.

On 9 October 2023, the EU council adopted the new Renewables Energy Directive to raise the share of renewable energy consumption to 42.5 per cent by 2030.\(^812\) An additional 2.5 per cent indicated top-up was introduced as well to facilitate reaching the target of 45 per cent. This aims to increase the uptake of renewable energy by all member states through ambitious sector-specific targets across transport, industry, buildings, district heating and cooling.\(^813\)

On 25 October 2023, the Industry Committee voted in favour of the “Net-Zero Industry Act.”\(^814\) The act sets a target for 40 per cent of net-zero technologies based on National Energy and Climate Plans and to capture 25 per cent of the global market value for these technologies, which include nuclear fission of fusion technologies, sustainable aviation fuels and specific industrial technologies.

On 25 October 2023, a loan of EUR350 million by the EIB to Bangladesh’s Ministry of Power, Energy and Mineral Resources was signed to support Bangladesh’s climate actions.\(^815\) Through the loan, a Renewable


Energy Facility will be built and it would allow the Bangladeshi government to develop renewable and other long term energy projects.

On 26 October 2023, a loan by the EIB to Spain to finance the construction of Solar panels, with an approximate capacity of 227MW was under appraisal. 816 This loan reflects the EU commitment to adopt greater renewable energy and reduce dependence on fossil fuels. 817

On 9 November 2023, MEPs passed the new regulation for type-approval and market surveillance of motor vehicles (Euro 7). 818 The new regulation will revise existing thresholds for exhaust emissions and will implement new measures to decrease emissions originating from tires and brakes, while also enhancing battery durability.

On 16 November 2023, the Deputy Head of the EU Delegation to Uganda, Minister Guillaume Chartrain, spoke at the 2023 Renewable Energy Conference in Uganda affirmed the EU’s transition towards clean and sustainable energy. 819 During the conference, the EU Delegation organised a panel to display EU’s ongoing and planned support towards Uganda’s energy sector. Delegation Head of Cooperation Caroline Adriaensen expressed that the EU will support the Ugandan private sector by providing financial support to bridge the gap between green start-ups and investors.

On 21 November 2023, the EU Parliament adopted a new negotiation position to demand stronger carbon dioxide reduction from medium and heavy trucks. 820 The aspired targets are 45 per cent for 2030-2034, 65 per cent for 2035-2039 and 90 per cent as of 2040. Additional measures discussed include only allowing zero-emission new urban busses from 2030 and proposing a temporary exception for urban busses fueled by biomethane under strict conditions, until 2035.

On 21 November 2023, MEPs voted in favour to demand an end to all direct and indirect fossil fuel subsidies at the national, EU and global level. 821 The resolution constituted the mandate for Parliament’s delegation, who attended the 28th Conference of the Parties (COP28) to the United Nations Framework Convention on Climate Change in Dubai shortly after.

On 21 November 2023, the EU Parliament adopted a position to reinforce the need for decarbonisation using Europe’s manufacturing output in technologies, to remain in line with the “Net Zero Industry Act”, which aims to produce 40 per cent of Europe’s annual deployment needs in net-zero technologies by 2030 and capture 25 per cent market share for these technologies. 822 The new amendments increased the scope of legislation to ‘encompass the entire supply chain, including components, materials, and machinery for producing net-zero technologies’ and to include a broader range of technologies.

On 28 November 2023, MEPs and the Spanish Presidency agreed on plans to catalyse the uptake of renewable and low-carbon gasses, including hydrogen into the EU gas market.\textsuperscript{823} A quote extracted from this discussion discloses that sectors that are difficult to decarbonise, such as steel and chemicals will be at the centre of developing Europe’s hydrogen market, enabling the phasing out of fossil fuels and preserving competitiveness in the green job market.

On 1 and 2 December 2023, during COP28, President von der Leyen attended the World Climate Action Summit.\textsuperscript{824} At the EU Pavilion, she hosted a panel on the Paris Agreement’s aligned carbon markets, with the International Monetary Fund, World Bank and World Trade Organisation, and a launch event for the ‘Just Energy Transition Partnership’ with Vietnam. She also launched the Global Pledge on Renewables and Energy Efficiency, aimed at increasing installed renewable capacity and efficiency by 2030.

On 2 December 2023, at COP28 the European Commission was among the participants that launched the Coal Transition Accelerator to “share expertise, design new policies including through best practices and lessons learned, and unlock new sources of public and private financing to facilitate just transitions from coal to clean energy.”\textsuperscript{825}

On 2 December 2023, the EIB announced that building partnerships with other countries to advance clean energy technologies was one of its main goals at COP28.\textsuperscript{826}

The European Union has fully complied with its commitment to ensure that both its regulations and investments towards clean energy technologies are more affordable for all nations and help drive a global, just energy transition for workers and communities that will leave no one behind. This has been achieved by their internal investments to achieve a greater adoption of renewable energy within the internal energy mix, and foreign investments to increase uses of renewable energy sources through funding, and collaborations for research and transitions. While these actions be motivated by the European Union’s attempt to isolate Russia’s fossil fuel exports, they aim to pave way for a low carbon future overall.

Thus, the European Union receives a score of +1

\textit{Analyst: Kaavya Punn}


\textsuperscript{825} Global Leaders Gather at COP28 to Launch a New Initiative to Support Acceleration of Just Coal Transitions, Elysee (Paris) 2 December 2023. Access Date: 5 December 2023. https://www.elysee.fr/admin/upload/default/0001/15/5887a8f79e48ee44de83f61dc0ad3157b22dec30.pdf