## 3. Energy: Technology [36]

**Commitment**

> "We have urgently to develop, deploy and foster the use of sustainable, less carbon intensive, clean energy and climate-friendly technologies in all areas of energy production and use."[182]
>
> *Growth and Responsibility in the World Economy*

**Assessment**

| | Final Compliance Score | | |
|---|---|---|---|
| | **Lack of Compliance** | **Work in Progress** | **Full Compliance** |
| **Country** | **-1** | **0** | **+1** |
| Canada | | | +1 |
| France | | 0 | |
| Germany | | 0 | |
| Italy | | 0 | |
| Japan | | | +1 |
| Russia | | 0 | |
| United Kingdom | | | +1 |
| United States | | | +1 |
| European Union | | 0 | |
| **Average Score** | | | **+0.44** |

**Background**

Commitments to develop and proliferate clean energy and less carbon intensive technologies in all areas of energy production have been a staple of G8 Summits. Historically, the G8's focus on innovations in energy-producing technology has been motivated by a desire to curtail global energy insecurity and reduce the environmental impact of conventional modes of energy production.

At the Venice Summit in 1980 discussions on energy technology focused on renewable resources: "We must break the existing link between economic growth and consumption of oil…This strategy requires conserving oil and substantially increasing production and use of alternative energy sources."[183] The G7 reiterated this commitment at the Versailles Summit in 1982 by agreeing to "develop new energy technologies, and to strengthen our capacity to deal with disruptions, [to] contribute to our common energy security." [184] During the Houston Summit in 1990, the issue of energy technology broadened in scope, including environmental impacts: "We recognize the importance of working together to develop new technologies and methods over the coming decades to complement energy conservation and other measures to reduce carbon dioxide and other greenhouse emissions."[185] The G7 reaffirmed this commitment during the Munich Summit in 1991, agreeing to promote "the development and diffusion of energy and environment technologies, including proposals for innovative technology programs."[186] During the Evian Summit in 2003, the G8 further declared its intentions to "promote rapid innovation and market introduction of clean technologies, in both developed and developing countries" which included specific commitments to stimulate research in renewable energies, such as solar photovoltaics, offshore wind

[182] Growth and Responsibility in the World Economy, G8 Summit 2007 Heiligendamm (Heiligendamm) 7 June 2007. Date of Access: 15 Dec 2007. <http://www.g-8.de/Content/EN/Artikel/__g8-summit/anlagen/2007-06-07-gipfeldokument wirtschaft-eng,templateId=raw,property=publicationFile.pdf/2007-06-07-gipfeldokument-wirtschaft-eng>
[183] All G7/8 Commitments 1975-2006, G8 Research Group (Toronto) 2006. Date of Access: 12 December 2008. <http://www.g7.utoronto.ca/datasets/allcommitments/app_b_cycle1.html>
[184] All G7/8 Commitments 1975-2006, G8 Research Group (Toronto) 2006, Date of Access: 12 December 2008. <http://www.g7.utoronto.ca/datasets/allcommitments/app_b_cycle1.html>
[185] All G7/8 Commitments 1975-2006, G8 Research Group (Toronto) 2006. Date of Access: 16 December 2008. <http://www.g7.utoronto.ca/datasets/allcommitments/app_b_cycle1.html>
[186] All G7/8 Commitments 1975-2006, G8 Research Group (Toronto) 2006. Date of Access: 17 December 2008. <http://www.g7.utoronto.ca/datasets/allcommitments/app_b_cycle1.html>

energy, next generation wind turbines, biomass, wave/tidal, and geothermal sources. [187] The Evian Summit also provided a framework for the particular actions that the G8 intended to embark upon, notably, in the accelerated development and expansion of "fuel cell and hydrogen technologies (power generation, transportation, hydrogen production, storage, distribution, end-use and safety)" and increased access and availability of "cleaner, more efficient fossil fuel technologies and carbon sequestration system."[188]

At the Gleneagles Summit in 2005, the issue of energy technology once again emerged as a major G8 priority, articulated in the Gleneagles Plan of Action on Climate Change, Clean Energy and Sustainable Development, a comprehensive 63-commitment plan aimed exclusively at tackling climate change. The declaration included wide-ranging commitments relating to energy technology that included the development of cleaner fossil fuels, renewable sources, energy diversification, and innovative energy technologies: "We will take measures to develop markets for clean energy technologies…[and] accelerate the development and commercialization of Carbon Capture and Storage technology…[and] develop low-carbon and alternative energy, to make wider use of renewables and to develop and introduce innovative technologies throughout the entire energy sector."[189] At the St. Petersburg Summit in 2006, the G8 continued to take steps forward in area of climate change, establishing the St. Petersburg Plan of Action: Global Energy Security, whereby G8 members reaffirmed measures set out in the Gleneagles Plan of Action and renewed support to develop and deploy renewables, low-carbon and alternative energy, and innovative technologies "throughout the entire energy sector."[190] The St. Petersburg Plan also called on G8 members to begin incorporating energy efficient technologies and practices at the national level in government buildings, and to introduce "cleaner, more efficient technologies and practices including carbon capture and storage."[191] Although less attention was focused on energy technology at the recent Heiligendamm Summit in 2007, G8 members reiterated their support for the St. Petersburg Plan, and identified cleaner and climate-friendly energy technologies as a lynchpin issue necessary for "mastering climate change as well as enhancing energy security."[192] Leading up to the Hokkaido Summit in 2008, it is likely that the issue of energy technology will again emerge as crucial issue on the G8 agenda.

*Team Leader: James Meers*

**Canada: +1**

Canada has fully complied with its Heiligendamm commitment to develop and employ sustainable, less carbon intensive, and clean energy technologies. Canada has invested in projects that support clean energy technology and indicated its intentions to support new regulations that foster climate-friendly technologies.

In the Parliamentary Throne Speech on 16 October 2007, the Canadian government announced its intention to promote a "new international agreement to cut down global emission in half by 2050" through the implementation of a series of new regulations and clean technologies, including the creation of a carbon emissions trading market that gives the private sector incentives to operate in a cleaner and greener way.[193] On 10 March 2008, the government also introduced an additional measure in its national climate change plan "Turning the Corner." Beginning in 2012, the government will require oil sands operations – one of Canada's largest emitters - to implement carbon capture and storage technology.[194] To assist in this

[187] All G7/8 Commitments 1975-2006, G8 Research Group (Toronto) 2006. Date of Access: 20 December 2008. <http://www.g7.utoronto.ca/datasets/allcommitments/app_b_cycle1.html>
[188] All G7/8 Commitments 1975-2006, G8 Research Group (Toronto) 2006. Date of Access: 4 January 2008. <http://www.g7.utoronto.ca/datasets/allcommitments/app_b_cycle1.html>
[189] All G7/8 Commitments 1975-2006, G8 Research Group (Toronto) 2006. Date of Access: 20 December 2008. <http://www.g7.utoronto.ca/datasets/allcommitments/app_b_cycle1.html>
[190] All G7/8 Commitments 1975-2006, G8 Research Group (Toronto) 2006. Date of Access: 20 December 2008. <http://www.g7.utoronto.ca/datasets/allcommitments/app_b_cycle1.html>
[191] All G7/8 Commitments 1975-2006, G8 Research Group (Toronto) 2006. Date of Access: 14 December 2007. <http://www.g7.utoronto.ca/datasets/allcommitments/app_b_cycle1.html>
[192] All G7/8 Commitments 1975-2006, G8 Research Group (Toronto) 2006. Date of Access: 4 January 2008. <http://www.g7.utoronto.ca/datasets/allcommitments/app_b_cycle1.html>
[193] A Healthy Environment for Canadians, Prime Minister's Office (Ottawa) 16 October 2007. Date of Access: 24 December 2007. <http://www.sft-ddt.gc.ca/eng/media.asp?id=1372>
194 Getting Tough on Industry's Emissions, Environment Canada (Ottawa) March 2008. Date of Access: 29 April 2008. <http://www.ec.gc.ca/doc/virage-corner/2008-03/brochure_eng.html>

transition, the government has allocated CAD240 million to develop one of the world's first and largest commercial-scale carbon capture and storage demonstration projects.[195]

In April 2008, Natural Resources Minister Lunn announced a series of new investments in clean energy technologies with a focus on advancing carbon capture and storage technologies. In particular, on 4 April 2008 Minister Lunn announced that industry-led projects will receive up to CAD140 million through two calls for proposals as part of the ecoENERGY Technology initiative. The Minister commented that "[o]ur Government is ensuring that Canada is at the leading edge of clean technologies to reduce emissions and adapt to environmental change. I would also like to announce a call for proposals under our two new funds that will accelerate the development of clean energy technologies in Canada."[196] Canada also allocated CAD5 million in funding to the Institute for Sustainable Energy, Environment and Economy at the University of Calgary to embark on research related to carbon sequestration technology.[197] Additionally, on 23 April 2008 the government announced it would provide CAD5 million for research relating to capturing and storing carbon technology in the province of Nova Scotia.[198]

Canada is also a signatory of the Bali Action Plan, which was adopted at the United Nations Climate Change Conference held in Bali in December 2007.[199] The plan pledges financial support for the development, transfer, and enhancement of environmentally sound technologies for developing countries.[200] The plan also commits to cooperation in the research and development of new and innovative clean energy technology.[201] In September 2007, Canada participated in the Sydney APEC Summit, signing onto the Leaders' Declaration on Climate Change, Energy Security, and Clean Development, which pledged cooperation for joint research, development, deployment, and transfer of low and zero-emission technologies, as well as renewable energy.[202]

On 14 March 2008, Canada participated in the Fourth Ministerial Meeting of the Gleneagles Dialogue on Climate Change, Clean Energy and Sustainable Development. During the meeting, Canada, along with other participating representatives, emphasized the importance of developing new technologies as an essential measure in improving energy efficiency and the reduction of GHG emissions.[203] Canada also supported the position that the development and transfer of new technology is necessary in assisting developing nations to tackle climate change.[204]

On 30-31 January 2008, Canada participated in the Second Major Economies Meeting on Energy Security and Climate Change in Hawaii. The Canadian representative contributed to discussions on how developing countries may acquire technology to burn coal more efficiently as well as technologies relating to carbon capture and storage.[205]

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195 Government Delivers Details of Greenhouse Gas Regulatory Framework, Environment Canada (Ottawa) 10 March 2008. Date of Access: 4 May 2008. <http://ecoaction.gc.ca/news-nouvelles/20080310-eng.cfm>
196 Press release: Minister Lunn announces new funds for ecoEnergy Initiative, Natural Resources Canada (Ottawa) 4 April 2008. Date of Access: 3 May 2008. <http://www.nrcan-rncan.gc.ca/media/newcom/2008/200822-eng.php>
197 Press release: Minister Lunn announces new funds for ecoEnergy Initiative, Natural Resources Canada (Ottawa) 4 April 2008. Date of Access: 3 May 2008. <http://www.nrcan-rncan.gc.ca/media/newcom/2008/200822-eng.php>
198 Press release: Minister Lunn announces $5 million to fund Nova Scotia carbon capture project, Natural Resources Canada (Ottawa) 23 April 2008. Date of Access: 5 May 2008.
<http://www.nrcan-rncan.gc.ca/media/newcom/2008/200826-eng.php>
199 Bali Action Plan, United Nations Framework Convention on Climate Change (Bonn) 14 December 2007. Date of Access: 16 January 2008. <http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf>
200 Bali Action Plan, United Nations Framework Convention on Climate Change (Bonn) 14 December 2007. Date of Access: 16 January 2008. <http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf>
201 Bali Action Plan, United Nations Framework Convention on Climate Change (Bonn) 14 December 2007. Date of Access: 16 January 2008. <http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf>
202 Sydney APEC Leaders' Declaration on Climate Change, Energy Security, and Clean Development, Asia-Pacific Economic Cooperation (Sydney) 9 September 2007. Date of Access: 8 January 2008.
<http://pandora.nla.gov.au/pan/64638/20071026-0047/www.apec2007.org/apec1440.html?inc=lw/lw_syd_dec>
203 Gleaneagles-Dialogue on Climate Change, Clean Energy and Sustainable Development 4th Ministerial Meeting Chairs' Conclusions, The Ministry of Foreign Affairs of Japan (Tokyo) 16 March 2008. Date of Access 23 May 2008.
<http://www.mofa.go.jp/policy/environment/warm/cop/dialogue0803.html>
204 Gleaneagles-Dialogue on Climate Change, Clean Energy and Sustainable Development 4th Ministerial Meeting Chairs' Conclusions, The Ministry of Foreign Affairs of Japan (Tokyo) 16 March 2008. Date of Access 23 May 2008.
<http://www.mofa.go.jp/policy/environment/warm/cop/dialogue0803.html>
205 Leaders Talk Climate Change at Hawaii Conference, CTV Globe Media (Toronto) 31 January 2008. Date of Access: 8 May 2008.
<http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/20080131/climate_change_080131/20080131?hub=SciTech>

On 18 April 2008, Canada participated in the Third Major Economies Meeting on Energy Security and Climate Change in Paris.[206] The meeting covered issues of technology cooperation and financing.[207] The meeting produced no major agreements on the development, deployment or distribution of climate-friendly energy technologies.[208]

Thus, Canada has been awarded a score of +1 for taking significant strides to promote the development and deployment of less carbon intensive and cleaner energy technologies through greater investment and regulatory action.

*Analyst: Sam Zhao*

**France: 0**

France has partially complied with its commitment on clean energy and climate-friendly technology.

On 6 July 2007, the French government brought together state representatives, experts, and non-governmental organizations to design a comprehensive plan to tackle climate change, namely the Grenelle de l'environnement.[209] The Grenelle laid the foundation for the growth and wide-spread use of clean energy technologies.[210] Following round table discussions in France on 23-25 October 2007, French President Nicolas Sarkozy unveiled the government's plans with regard to the Grenelle initiative,[211] specifically stating that "priority will no longer be given to incineration but to recycling" and that all incinerators would also produce energy, while having a permanent monitoring system of the pollution emitted from incineration.[212]

In a convention signed by Minister of Ecology and Sustainable Development Jean-Louis Borloo and major retail outlets, retailers agreed to make stores more energy efficient, reduce transport emissions, and promote French and European products deemed environmentally friendly.[213] Part of this program includes displaying an "environmental price" on certain products, so that consumers will know how much carbon was emitted for its manufacturing.[214] France's new environmental plan also outlines a number of tax policies to internalize the cost of emissions, including a tax on carbon-emitting trucks traveling through France, a bonus-malus tax on new cars, and a reduction in the value added tax on eco-friendly products.[215] Such policies should help to push market share towards products and services that are produced using low-emissions and clean-carbon energy.

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[206] Major Economies Meeting on Energy Security and Climate Change Paris – 16 to 18 April 2008, Ministère de l'Écologie, de l'Energie, du Développement durable et de l'Aménagement du territoire (Paris) 15 April 2008. Date of Access: 2 May 2008. <http//www.developpement-durable.gouv.fr/IMG/pdf/15-04-08_DP_MEM_final_GB_cle59cb4c.pdf>
[207] Major Economies Meeting on Energy Security and Climate Change Paris – 16 to 18 April 2008, Ministère de l'Écologie, de l'Energie, du Développement durable et de l'Aménagement du territoire (Paris) 15 April 2008. Date of Access: 2 May 2008. <http://www.developpement-durable.gouv.fr/IMG/pdf/15-04-08_DP_MEM_final_GB_cle59cb4c.pdf>
[208] No Accord at Paris Climate Meeting as More Talks Planned, Associated Press (New York) 18 April 2008. Date of Access: 8 May 2008. <http://ap.google.com/article/ALeqM5hDQzyHvXPYzhJsBSImRWB7L1JhpAD904GM2O1>
209 Lancement du Grenelle Environnement, le Grenelle Environnement (Paris) 12 July 2007. Date of Access: 7 January 2008. <http://www.legrenelle-environnement.fr/grenelle-environnement/spip.php?article1>
210 Lancement du Grenelle Environnement, le Grenelle Environnement (Paris) 12 July 2007. Date of Access: 7 January 2008. <http://www.legrenelle-environnement.fr/grenelle-environnement/spip.php?article1>
211 Discours de M. le Président de la République à l'Occasion de la Restitution des Conclusions du Grenelle de l'Environnement, le Grenelle Environnement (Paris) 25 October 2007. Date of Access: 7 January 2008. <http://www.equipement.gouv.fr/IMG/pdf/President_Grenelle-1_cle7d6d42.pdf>
[212] Speech by the President of the French Republic at the concluding session of the Grenelle de l'Environnement, Présidence de la République (Paris) 25 October 2007. Date of Access: 6 January 2008. <http://www.elysee.fr/download/?mode=press&filename=07-2203_Discours_GrenelleEnvironnement_Anglais.pdf>
[213] La grande distribution se met au vert, Ministère de l'Écologie, de l'Énergie, du Développement durable et de l'Aménagement du territoire (Paris) 30 January 2008. Date of Access: 10 May 2008. <http://www.developpement-durable.gouv.fr/article.php3?id_article=2835>
[214] Une « étiquette carbone » pour la grande distribution, Office of the Prime Minister (Paris) 29 January 2008. Date of Access: 10 May 2008. <http://www.premier-ministre.gouv.fr/chantiers/developpement_durable_855/dire_verite_sur_les_1101/une_etiquette_carbone_pour_59059.html>
[215] Discours de M. le Président de la République à l'Occasion de la Restitution des Conclusions du Grenelle de l'Environnement, le Grenelle Environnement (Paris) 25 October 2007. Date of Access: 7 January 2008. <http://www.equipement.gouv.fr/IMG/pdf/President_Grenelle-1_cle7d6d42.pdf>

France is also a signatory of the Bali Action Plan, which was adopted at the United Nations Climate Change Conference held in Bali in December 2007.[216] The plan pledges financial support for the development, transfer, and enhancement of environmentally sound technologies for developing countries.[217] The plan also commits to cooperation in the research and development of new and innovative clean energy technology.[218]

On 14 March 2008, France participated in the Fourth Ministerial Meeting of the Gleneagles Dialogue on Climate Change, Clean Energy and Sustainable Development. During the meeting, France, along with other participating representatives, emphasized the importance of developing new technologies as an essential measure in improving energy efficiency and the reduction of GHG emissions.[219] France also supported the position that the development and transfer of new clean energy and climate-friendly technologies is necessary in assisting developing nations tackling climate change.[220]

On 30-31 January 2008, France participated in the Second Major Economies Meeting on Energy Security and Climate Change in Hawaii. The French representative contributed to discussions on how developing countries may acquire technology to burn coal more efficiently as well as technologies relating to carbon capture and storage.[221]

On 18 April 2008, France participated in the Third Major Economies Meeting on Energy Security and Climate Change held in Paris.[222] The meeting covered issues of technology cooperation and financing.[223] The meeting produced no major agreements on the development, deployment or distribution of climate-friendly energy technologies.[224]

Thus, although France has made some effort to meet its Heiligendamm commitment to energy technology, it is awarded a score of 0 for its lack of concrete initiatives in promoting low-emissions carbon based energy production.

*Analyst: Daniel Gatto*

**Germany: 0**

Germany has partially complied with its energy technology commitment.

Germany has embarked upon a number of international initiatives addressing clean energy production. On 10-11 September 2007, Germany participated in the Third Ministerial Meeting in the Framework of the Gleneagles Dialogue on Climate Change, Clean Energy and Sustainable Development in Berlin. The Ministerial Meeting focused on strategies for improved technological cooperation between developed and

[216] Bali Action Plan, United Nations Framework Convention on Climate Change (Bonn) 14 December 2007. Date of Access: 16 January 2008. <http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf>
[217] Bali Action Plan, United Nations Framework Convention on Climate Change (Bonn) 14 December 2007. Date of Access: 16 January 2008. <http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf>
[218] Bali Action Plan, United Nations Framework Convention on Climate Change (Bonn) 14 December 2007. Date of Access: 16 January 2008. <http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf>
[219] Gleaneagles-Dialogue on Climate Change, Clean Energy and Sustainable Development 4th Ministerial Meeting Chairs' Conclusions, The Ministry of Foreign Affairs of Japan (Tokyo) 16 March 2008. Date of Access 23 May 2008. <http://www.mofa.go.jp/policy/environment/warm/cop/dialogue0803.html>
[220] Gleaneagles-Dialogue on Climate Change, Clean Energy and Sustainable Development 4th Ministerial Meeting Chairs' Conclusions, The Ministry of Foreign Affairs of Japan (Tokyo) 16 March 2008. Date of Access 23 May 2008. <http://www.mofa.go.jp/policy/environment/warm/cop/dialogue0803.html>
[221] Leaders Talk Climate Change at Hawaii Conference, CTV Globe Media (Toronto) 31 January 2008. Date of Access: 8 May 2008. <http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/20080131/climate_change_080131/20080131?hub=SciTech>
[222] Major Economies Meeting on Energy Security and Climate Change Paris – 16 to 18 April 2008, Ministère de l'Écologie, de l'Energie, du Développement durable et de l'Aménagement du territoire (Paris) 15 April 2008. Date of Access: 2 May 2008. <http//www.developpement-durable.gouv.fr/IMG/pdf/15-04-08_DP_MEM_final_GB_cle59cb4c.pdf>
[223] Major Economies Meeting on Energy Security and Climate Change Paris – 16 to 18 April 2008, Ministère de l'Écologie, de l'Energie, du Développement durable et de l'Aménagement du territoire (Paris) 15 April 2008. Date of Access: 2 May 2008. <http://www.developpement-durable.gouv.fr/IMG/pdf/15-04-08_DP_MEM_final_GB_cle59cb4c.pdf>
[224] No Accord at Paris Climate Meeting as More Talks Planned, Associated Press (New York) 18 April 2008. Date of Access: 8 May 2008. <http://ap.google.com/article/ALeqM5hDQzyHvXPYzhJsBSImRWB7L1JhpAD904GM2O1>

developing nations.[225] At the meeting, Dagmar Wöhrl, Parliamentary State Secretary in the Federal Ministry of Economics, stressed the importance of clean energy technology, saying "[c]lean energy technologies play a key role in reconciling climate protection with growth and economic development."[226]

Germany is also a signatory to the Bali Action Plan, which was adopted at the United Nations Climate Change Conference held in Bali in December 2007.[227] The plan pledges financial support for the development, transfer, and enhancement of environmentally sound technologies for developing countries.[228] The plan also commits to cooperation in the research and development of new and innovative clean energy technology.[229]

On 14 March 2008, Germany participated in the Fourth Ministerial Meeting of the Gleneagles Dialogue on Climate Change, Clean Energy and Sustainable Development. During the meeting, Germany, along with other participating representatives, emphasized the importance of developing new technologies as an essential measure in improving energy efficiency and the reduction of GHG emissions.[230] Germany also supported the position that the development and transfer of new clean energy and climate-friendly technologies is necessary in assisting developing nations tackling climate change.[231]

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In the domestic arena, the German government decided to promote applied research into hydrogen and fuel cell technologies for vehicle engines.[236] The Federal Minister of Transport Wolfgang Tiefensee commented that "[i]n the long term, this technology will enable us to reduce CO2 emissions and, at the same time, will

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[225] G8 Energy, Environment Ministers Meet in Berlin for Gleneagles Dialogue, German Embassy (Washington D.C.) 13 September 2007. Date of Access: 3 January 2008. <http://www.germany.info/relaunch/business/new/bus_GlenEagles_Meet_09_07.html>

[226] G8 Energy, Environment Ministers Meet in Berlin for Gleneagles Dialogue, German Embassy (Washington D.C.) 13 September 2007. Date of Access: 3 January 2008. <http://www.germany.info/relaunch/business/new/bus_GlenEagles_Meet_09_07.html>

[227] Bali Action Plan, United Nations Framework Convention on Climate Change (Bonn) 14 December 2007. Date of Access: 16 January 2008. <http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf>

[228] Bali Action Plan, United Nations Framework Convention on Climate Change (Bonn) 14 December 2007. Date of Access: 16 January 2008. <http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf>

[229] Bali Action Plan, United Nations Framework Convention on Climate Change (Bonn) 14 December 2007. Date of Access: 16 January 2008. <http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf>

[230] Gleaneagles-Dialogue on Climate Change, Clean Energy and Sustainable Development 4th Ministerial Meeting Chairs' Conclusions, The Ministry of Foreign Affairs of Japan (Tokyo) 16 March 2008. Date of Access 23 May 2008. <http://www.mofa.go.jp/policy/environment/warm/cop/dialogue0803.html>

[231] Gleaneagles-Dialogue on Climate Change, Clean Energy and Sustainable Development 4th Ministerial Meeting Chairs' Conclusions, The Ministry of Foreign Affairs of Japan (Tokyo) 16 March 2008. Date of Access 23 May 2008. <http://www.mofa.go.jp/policy/environment/warm/cop/dialogue0803.html>

[232] Leaders Talk Climate Change at Hawaii Conference, CTV Globe Media (Toronto) 31 January 2008. Date of Access: 8 May 2008. <http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/20080131/climate_change_080131/20080131?hub=SciTech>

[233] Major Economies Meeting on Energy Security and Climate Change Paris – 16 to 18 April 2008, Ministère de l'Écologie, de l'Energie, du Développement durable et de l'Aménagement du territoire (Paris) 15 April 2008. Date of Access: 2 May 2008. <http//www.developpement-durable.gouv.fr/IMG/pdf/15-04-08_DP_MEM_final_GB_cle59cb4c.pdf>

[234] Major Economies Meeting on Energy Security and Climate Change Paris – 16 to 18 April 2008, Ministère de l'Écologie, de l'Energie, du Développement durable et de l'Aménagement du territoire (Paris) 15 April 2008. Date of Access: 2 May 2008. <http://www.developpement-durable.gouv.fr/IMG/pdf/15-04-08_DP_MEM_final_GB_cle59cb4c.pdf>

[235] No Accord at Paris Climate Meeting as More Talks Planned, Associated Press (New York) 18 April 2008. Date of Access: 8 May 2008. <http://ap.google.com/article/ALeqM5hDQzyHvXPYzhJsBSImRWB7L1JhpAD904GM2O1>

[236] Full Steam Ahead, Press and Information Office of the Federal Government (Berlin) 25 February 2008. Date of Access: 8 May 2008. <http://www.bundesregierung.de/nn_6516/Content/EN/Artikel/2008/02/2008-02-25-wasserstoff-brennstoffzellen-programm__en.html>

make us less dependent on oil."[237] Germany also hosted Hannover Messe from 12-25 April 2008, which focused on the theme of energy technology and efficiency.[238]

Thus, Germany has been awarded a score of 0.

*Analyst: Yunjae Kim*

**Italy: 0**

Italy has partially complied with its commitment on energy technology.

On the international front, Italy has demonstrated strong support and leadership in multilateral negotiations on climate change. In November 2007, Italy hosted the World Energy Congress in Rome. At the Congress, Italian representatives signed a Memorandum of Understanding (MOU) on Environment and Sustainable Technology. The MOU commits the parties to "information sharing and advancing scientific and technological cooperation in the areas of sustainable construction and bio-architecture, renewable sources of energy, energy-saving technology, intelligent systems for sustainable energy management of buildings and the use and promotion of wood resources."[239]

On 20-22 April 2008, Italy also co-hosted the Eleventh International Energy Forum (IEF) in Rome, which focused on the theme of "Energy Dialogue to Respond to Global Challenges".[240] In his Minister's Address, Italian Minister of Economic Development Pierluigi Bersani stated: "High expectations are put on technological development to find new resources to develop and recover them at lower cost, to prepare low-carbon energy options, to use energy efficiently."[241] In the 2008 IEF Closing Statement it was noted that "all energy technology options should be kept open and priorities established."[242] Ministers also agreed to advocate and cooperate on "renewed energy technology transfer and collaboration between producing and consuming countries."[243] However, no final conclusions have been made on the subject of low-emission technologies.

Italy is also a signatory to the Bali Action Plan, which was adopted at the United Nations Climate Change Conference held in Bali in December 2007.[244] The plan pledges financial support for the development, transfer, and enhancement of environmentally sound technologies for developing countries.[245] The plan also commits to cooperation in the research and development of new and innovative clean energy technology.[246]

On 14 March 2008, Italy participated in the Fourth Ministerial Meeting of the Gleneagles Dialogue on Climate Change, Clean Energy and Sustainable Development. During the meeting, Italy, along with other participating representatives, emphasized the importance of developing new technologies as an essential

[237] Full Steam Ahead, Press and Information Office of the Federal Government (Berlin) 25 February 2008. Date of Access: 8 May 2008. <http://www.bundesregierung.de/nn_6516/Content/EN/Artikel/2008/02/2008-02-25-wasserstoff-brennstoffzellen-programm__en.html>
[238] Hannover Messe End-of-Show Report, Hannover Messe (Hannover) 25 April 2008. Date of Access: 8 May 2008. <http://de.sitestat.com/dmag/001/s?en.Download.14289.HM08_Abschlussbericht_en.HANNOVER_MESSE.End_of_show_report_2008&ns_type=pdf&ns_url=[http://files.messe.de/cmsdb/001/14289.pdf>
[239] Rome 2007 Congress Conclusions, World Energy Council (London) 29 November 2007. Date of Access: 8 January 2008. <http://www.worldenergy.org/news__events/news/1024.asp>
[240] 11th IEF Host Minister's Address "Towards the 11th International Energy Forum", International Energy Forum (Riyadh) 2007. Date of Access: 23 January 2008. <http://www.iefs.org.sa/pages/BK_MR_2.html>
[241] 11th IEF Host Minister's Address "Towards the 11th International Energy Forum", International Energy Forum (Riyadh) 2007. Date of Access: 23 January 2008. <http://www.iefs.org.sa/pages/BK_MR_2.html>
[242] 11th International Energy Forum Closing Statement (Rome) 22 April 2008. Date of Access: 8 May 2008. <http://www.iefs.org.sa/Pages/Files/Others/IEF11_Closing_statement.FINAL.pdf>
[243] 11th International Energy Forum Closing Statement (Rome) 22 April 2008. Date of Access: 8 May 2008. <http://www.iefs.org.sa/Pages/Files/Others/IEF11_Closing_statement.FINAL.pdf>
[244] Bali Action Plan, United Nations Framework Convention on Climate Change (Bonn) 14 December 2007. Date of Access: 16 January 2008. <http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf>
[245] Bali Action Plan, United Nations Framework Convention on Climate Change (Bonn) 14 December 2007. Date of Access: 16 January 2008. <http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf>
[246] Bali Action Plan, United Nations Framework Convention on Climate Change (Bonn) 14 December 2007. Date of Access: 16 January 2008. <http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf>

measure in improving energy efficiency and the reduction of GHG emissions.[247] Italy also supported the position that the development and transfer of new clean energy and climate-friendly technologies is necessary in assisting developing nations tackling climate change.[248]

On 30-31 January 2008, Italy participated in the Second Major Economies Meeting on Energy Security and Climate Change in Hawaii. The Italian representative contributed to discussions on how developing countries may acquire technology to burn coal more efficiently as well as technologies relating to carbon capture and storage.[249]

On 18 April 2008, Italy participated in the Third Major Economies Meeting on Energy Security and Climate Change held in Paris.[250] The meeting covered issues of technology cooperation and financing.[251] The meeting produced no major agreements on the development, deployment or distribution of climate-friendly energy technologies.[252]

Italy has demonstrated some effort to promote climate-friendly and clean-energy technologies through collaboration at the international level. However, due to a lack of concrete measures on the domestic front, Italy receives a score of 0.

*Analyst: Daniel Gatto*

**Japan: +1**

Japan has fully complied with its energy technology commitment.

On the domestic level, in response to Japan's Kyoto Protocol Target Achievement Plan, the New Energy and Industrial Technology Development Organization within Japan's Ministry of Energy, Trade, and Industry announced a plan to carry out efficient and cooperative research and development activities; verification and demonstration projects; and dissemination projects for new energy and energy-conservation technologies.[253] The plan includes development of zero-emission coal technology; development of technologies for highly efficient energy use through innovative methods, such as coal gasification; research and development activities for new energy implementation by 2010; and research and development on biomass heat utilization systems.[254]

On 23 August 2007, Japan issued a Joint Ministerial Statement at the First EAS Energy Ministers Meeting, agreeing to push forward the Cebu Declaration, which aspires to promote cleaner and low-emission technologies, and to produce concrete results through greater cooperation and coordination of measures and activities.[255] In September 2007, Japan also participated in the Sydney APEC Summit, signing onto the

[247] Gleaneagles-Dialogue on Climate Change, Clean Energy and Sustainable Development 4th Ministerial Meeting Chairs' Conclusions, The Ministry of Foreign Affairs of Japan (Tokyo) 16 March 2008. Date of Access 23 May 2008. <http://www.mofa.go.jp/policy/environment/warm/cop/dialogue0803.html>
[248] Gleaneagles-Dialogue on Climate Change, Clean Energy and Sustainable Development 4th Ministerial Meeting Chairs' Conclusions, The Ministry of Foreign Affairs of Japan (Tokyo) 16 March 2008. Date of Access 23 May 2008. <http://www.mofa.go.jp/policy/environment/warm/cop/dialogue0803.html>
[249] Leaders Talk Climate Change at Hawaii Conference, CTV Globe Media (Toronto) 31 January 2008. Date of Access: 8 May 2008. <http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/20080131/climate_change_080131/20080131?hub=SciTech>
[250] Major Economies Meeting on Energy Security and Climate Change Paris – 16 to 18 April 2008, Ministère de l'Écologie, de l'Energie, du Développement durable et de l'Aménagement du territoire (Paris) 15 April 2008. Date of Access: 2 May 2008. <http//www.developpement-durable.gouv.fr/IMG/pdf/15-04-08_DP_MEM_final_GB_cle59cb4c.pdf>
[251] Major Economies Meeting on Energy Security and Climate Change Paris – 16 to 18 April 2008, Ministère de l'Écologie, de l'Energie, du Développement durable et de l'Aménagement du territoire (Paris) 15 April 2008. Date of Access: 2 May 2008. <http://www.developpement-durable.gouv.fr/IMG/pdf/15-04-08_DP_MEM_final_GB_cle59cb4c.pdf>
[252] No Accord at Paris Climate Meeting as More Talks Planned, Associated Press (New York) 18 April 2008. Date of Access: 8 May 2008. <http://ap.google.com/article/ALeqM5hDQzyHvXPYzhJsBSImRWB7L1JhpAD904GM2O1>
[253] Outline of New Energy and Industrial Technology Development Organization 2007-2008, New Energy and Industrial Technology Development Organization (Kanagawa) 1 October 2007. Date of Access: 15 January 2008. <http://www.nedo.go.jp/kankobutsu/pamphlets/kouhou/2007gaiyo_e/87_140.pdf>
[254] Outline of New Energy and Industrial Technology Development Organization 2007-2008, New Energy and Industrial Technology Development Organization (Kanagawa) 1 October 2007. Date of Access: 15 January 2008. <http://www.nedo.go.jp/kankobutsu/pamphlets/kouhou/2007gaiyo_e/87_140.pdf>
[255] Joint Ministerial Statement First EAS Energy Ministers Meeting Singapore, 23 August 2007, Ministry of Foreign Affairs

Leaders' Declaration on Climate Change, Energy Security, and Clean Development, which pledged cooperation for joint research, development, deployment, and transfer of low and zero-emission technologies, as well as renewable energy.[256]

In November 2007, Japan announced its Environmental Cooperation Initiative at the Third East Asian Summit. The Initiative is intended to extend policy support and cooperation in promoting the use of clean energy.[257] At the Summit, Japan and other ASEAN members pledged their commitment to the Singapore Declaration on Climate Change, Energy, and the Environment, which encourages the regional deployment of clean technology through various means, including investment, technical and financial assistance, and technology transfer.[258]

In addition to its international commitments, Japan has also made bilateral agreements relating to clean energy technology. On 20 August 2007, Japan and the Republic of Indonesia issued a joint statement on the Enhancement of the Cooperation on Climate Change, Environment and Energy Issues, recognizing the importance of cooperation between the two countries on clean coal technology.[259] On 16 November 2007, Japan's Prime Minster Yasuo Fukuda announced the U.S.-Japan Cooperation on Energy Security, Clean Development, and Climate Change, reaffirming Japan's partnership with the United States in developing collaborative technology and deployment in various key sectors, including low-carbon fossil fuel power generation, transportation, land use, near-zero carbon energy (e.g., nuclear, wind, and solar), and energy efficiency.[260] Most recently, on 2 December 2007, Japanese Foreign Minister Masahiko Komura and Chinese Premier Wen Jiabao pledged greater bilateral cooperation in the use of clean energy.[261]

Japan is also a signatory to the Bali Action Plan, which was adopted at the United Nations Climate Change Conference held in Bali in December 2007.[262] The plan pledges financial support for the development, transfer, and enhancement of environmentally sound technologies for developing countries.[263] The plan also commits to cooperation in the research and development of new and innovative clean energy technology.[264]

On 26 January 2008, at the Annual World Meeting of the World Economic Forum in Davos, Japanese Prime Minister Fukuda announced that Japan intended on halving GHG emissions by 2050 as articulated in its climate change plan "Cool Earth 50," which was launched last year. Prime Minister Fukuda specifically announced that Japan would be accelerating the development of technology of zero-CO2-emission coal-fired power plants, as well as high-efficiency, low-cost solar power generation technology and Green IT.[265] To this end, Japan committed to invest US$30 billion over the next five years in research and development

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of Japan (Tokyo) 23 August 2007. Date of Access: 28 December 2007. <http://www.mofa.go.jp/policy/economy/energy/joint0708.html>

[256] Sydney APEC Leaders' Declaration on Climate Change, Energy Security, and Clean Development, Asia-Pacific Economic Cooperation (Sydney) 9 September 2007. Date of Access: 8 January 2008. <http://pandora.nla.gov.au/pan/64638/20071026-0047/www.apec2007.org/apec1440.html?inc=lw/lw_syd_dec>

[257] Towards a "Sustainable East Asia: Japan's Environmental Cooperation Initiative Announced at the 3rd EAS, Ministry of Foreign Affairs of Japan (Tokyo) November 2007. Date of Access: 30 December 2007. <http://www.mofa.go.jp/region/asia-paci/eas/initiative0711.pdf>

[258] Singapore Declaration on Climate Change, Energy and the Environment, ASEAN (Sinapore) 21 November 2007. Date of Access: 3 January 2008. <http://www.aseansec.org/21116.htm>

[259] Joint Statement by Japan and the Republic of Indonesia on the Enhancement of the Cooperation on Climate Change, Environment, and Energy Issues, Ministry of Foreign Affairs of Japan (Tokyo) 20 August 2007. Date of Access: 27 December 2007. <http://www.mofa.go.jp/region/asia-paci/pmv0708/joint.html>

[260] U.S.-Japan Cooperation on Energy Security, Clean Development, and Climate Change, U.S. Department of State (Washington D.C.) 16 November 2007. Date of Access: 2 January 2008. <http://www.state.gov/p/eap/rls/fs2007/95289.htm>

[261] China, Japan to Fight Climate Change Jointly, China Daily (Beijing) 4 December 2007. Date of Access: 29 December 2007. <http://www.chinadaily.com.cn/china/2007-12/04/content_6296035.htm>

[262] Bali Action Plan, United Nations Framework Convention on Climate Change (Bonn) 14 December 2007. Date of Access: 16 January 2008. <http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf>

[263] Bali Action Plan, United Nations Framework Convention on Climate Change (Bonn) 14 December 2007. Date of Access: 16 January 2008. <http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf>

[264] Bali Action Plan, United Nations Framework Convention on Climate Change (Bonn) 14 December 2007. Date of Access: 16 January 2008. <http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf>

[265] Special Address by Prime Minister Yasuo Fukuda on the Occasion of the Annual Meeting of the World Economic Forum, Ministry of Foreign Affairs of Japan (Tokyo) 26 January 2008. Date of Access: 13 March 2008. <http://www.mofa.go.jp/policy/economy/wef/2008/address-s.html>

of climate-friendly technology.[266] In his address, Prime Minister Fukuda also announced Japan's plans to increase the transfer of clean energy and climate-friendly technology to other countries.[267]

On 14 March 2008, Japan hosted the Fourth Ministerial Meeting of the Gleneagles Dialogue on Climate Change, Clean Energy and Sustainable Development. During the meeting, Japan, along with other participating representatives, emphasized the importance of developing new technologies as an essential measure in improving energy efficiency and the reduction of GHG emissions.[268] Japan also supported the position that the development and transfer of new clean energy and climate-friendly technologies is necessary in assisting developing nations tackling climate change.[269] Furthermore, on 24 April 2008 Prime Minster Fukuda and EU Commission President Jose Manuel Barroso pledged to work together to promote greater progress and cooperation in the field of energy efficiency upgrades and low-carbon technology financing.[270]

On 30-31 January 2008, Japan participated in the Second Major Economies Meeting on Energy Security and Climate Change in Hawaii. The Japanese representative contributed to discussions on how developing countries may acquire technology to burn coal more efficiently as well as technologies relating to carbon capture and storage.[271]

On 18 April 2008, Japan participated in the Third Major Economies Meeting on Energy Security and Climate Change held in Paris.[272] The meeting covered issues of technology cooperation and financing.[273] The meeting produced no major agreements on the development, deployment or distribution of climate-friendly energy technologies.[274]

Thus, Japan has been awarded a score of +1 for its comprehensive domestic and international initiatives to encourage the use of clean energy technologies.

*Analysts: Yunjae Kim and Dasha Frolova*

**Russia: 0**

Russia has partially complied with its commitment on climate-friendly technologies. Little progress has been made on this issue by the government of the Russian Federation since the Interim Report.

During the period September-November 2007, the Ministry of Industry and Energy has invested approximately US$123 000 into research on low carbon-intensive energy technologies and in cooperation

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[266] Japan to Set Up $10B Climate Change Fund. Cleantech Network (San Francisco) 28 January 2008. Date of Access: 13 March 2008. <http://media.cleantech.com/2372/japan-to-set-up-10b-climate-change-fund>
[267] Special Address by Prime Minister Yasuo Fukuda on the Occasion of the Annual Meeting of the World Economic Forum, The Ministry of Foreign Affairs of Japan (Tokyo) 26 January 2008. Date of Access: 13 March 2008. <http://www.mofa.go.jp/policy/economy/wef/2008/address-s.html>
[268] Gleaneagles-Dialogue on Climate Change, Clean Energy and Sustainable Development 4th Ministerial Meeting Chairs' Conclusions, The Ministry of Foreign Affairs of Japan (Tokyo) 16 March 2008. Date of Access 23 May 2008. <http://www.mofa.go.jp/policy/environment/warm/cop/dialogue0803.html>
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[270] EU and Japan Shake Hands on Climate, EurActiv Network (Brussels) 24 April 2008. Date of Access 23 May 2008. <http://www.euractiv.com/en/climate-change/eu-japan-shake-hands-climate/article-171895>
[271] Leaders Talk Climate Change at Hawaii Conference, CTV Globe Media (Toronto) 31 January 2008. Date of Access: 8 May 2008. <http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/20080131/climate_change_080131/20080131?hub=SciTech>
[272] Major Economies Meeting on Energy Security and Climate Change Paris – 16 to 18 April 2008, Ministère de l'Écologie, de l'Energie, du Développement durable et de l'Aménagement du territoire (Paris) 15 April 2008. Date of Access: 2 May 2008. <http//www.developpement-durable.gouv.fr/IMG/pdf/15-04-08_DP_MEM_final_GB_cle59cb4c.pdf>
[273] Major Economies Meeting on Energy Security and Climate Change Paris – 16 to 18 April 2008, Ministère de l'Écologie, de l'Energie, du Développement durable et de l'Aménagement du territoire (Paris) 15 April 2008. Date of Access: 2 May 2008. <http://www.developpement-durable.gouv.fr/IMG/pdf/15-04-08_DP_MEM_final_GB_cle59cb4c.pdf>
[274] No Accord at Paris Climate Meeting as More Talks Planned, Associated Press (New York) 18 April 2008. Date of Access: 8 May 2008. <http://ap.google.com/article/ALeqM5hDQzyHvXPYzhJsBSImRWB7L1JhpAD904GM2O1>

with the Carbon Sequestrate Forum.[275] Additional research will be conducted within the framework of the state-owned Russian Venture Company, the creation of which was completed in September 2007.[276]

According to Head of Federal Agency on Energy D. Akhanov, the Agency plans to spend more than RFR3 trillion on new energy technologies and facilities, including clean coal generation.[277] Moreover, at the International Energy Week in Moscow in October 2007, Deputy Minister of Industry and Energy Anatoly Yanovsky declared that innovations in the Russian energy sector are to be expected in the framework of Energy Strategy of Russia 2030, which is currently under development.[278]

As the Russian economy is highly energy-intensive, the main concern of the country's leaders within the context of climate-friendly technologies is energy efficiency. In December 2007, the Ministry of Education and Science announced that it would support a nanotech program (2008- 2015), which will also be used for energy efficiency development.[279]

In September 2007, Russia participated in the Sydney APEC Summit, signing onto the Leaders' Declaration on Climate Change, Energy Security, and Clean Development, which pledged cooperation for joint research, development, deployment, and transfer of low and zero-emission technologies, as well as renewable energy.[280]

On 14 March 2008, Russia participated in the Fourth Ministerial Meeting of the Gleneagles Dialogue on Climate Change, Clean Energy and Sustainable Development. During the meeting, Russia, along with other participating representatives, emphasized the importance of developing new technologies as an essential measure in improving energy efficiency and the reduction of GHG emissions.[281] Russia also supported the position that the development and transfer of new clean energy and climate-friendly technologies is necessary in assisting developing nations tackling climate change.[282]

On 30-31 January 2008, Russia participated in the Second Major Economies Meeting on Energy Security and Climate Change in Hawaii. The Russian representative contributed to discussions on how developing countries may acquire technology to burn coal more efficiently as well as technologies relating to carbon capture and storage.[283]

On 18 April 2008, Russia participated in the Third Major Economies Meeting on Energy Security and Climate Change held in Paris.[284] The meeting discussed issues of technology cooperation and financing.[285]

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[275] 2nd Step of NIR Concluded, Sustainable Energy Development Center (Moscow) November 2007. Date of access: 18 December 2007. <http://www.sedc.ru/page_pid_12_news_66_lang_1_p_3.aspx>
[276] The First Venture Fund is formed, Russian Venture Company (Moscow) 4 September 2007. Date of Access: 18 December 2007. <http://www.rusventure.ru/?p=28>
[277] New innovational boom is expected in electricity generation, Ministry of Industry and Energy (Moscow) 25 January 2008. Date of Access: 11 May 2008.
<http://www.minprom.gov.ru/press/release/showNewsIssue?url=activity/electro/news/191>
[278] Main directions of Russian Energy Strategy and Global Energy Security, Ministry of Industry and Energy (Moscow) 23 October 2007. Date of Access: 18 December 2007.
<http://www.minprom.gov.ru/appearance/showAppearanceIssue?url=appearance/report/54>
[279] N. Ivannitskaya and M. Shpigel, Doubling for eight years, Vedomosti (Moscow) 17 January 2008. Date of Access: 11 May 2008. <http://www.vedomosti.ru/newspaper/article.shtml?2008/01/17/139837>
[280] Sydney APEC Leaders' Declaration on Climate Change, Energy Security, and Clean Development, Asia-Pacific Economic Cooperation (Sydney) 9 September 2007. Date of Access: 8 January 2008.
<http://pandora.nla.gov.au/pan/64638/20071026-0047/www.apec2007.org/apec1440.html?inc=lw/lw_syd_dec>
[281] Gleaneagles-Dialogue on Climate Change, Clean Energy and Sustainable Development 4th Ministerial Meeting Chairs' Conclusions, The Ministry of Foreign Affairs of Japan (Tokyo) 16 March 2008. Date of Access 23 May 2008.
<http://www.mofa.go.jp/policy/environment/warm/cop/dialogue0803.html>
[282] Gleaneagles-Dialogue on Climate Change, Clean Energy and Sustainable Development 4th Ministerial Meeting Chairs' Conclusions, The Ministry of Foreign Affairs of Japan (Tokyo) 16 March 2008. Date of Access 23 May 2008.
<http://www.mofa.go.jp/policy/environment/warm/cop/dialogue0803.html>
[283] Leaders Talk Climate Change at Hawaii Conference, CTV Globe Media (Toronto) 31 January 2008. Date of Access: 8 May 2008.
<http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/20080131/climate_change_080131/20080131?hub=SciTech>
[284] Major Economies Meeting on Energy Security and Climate Change Paris – 16 to 18 April 2008, Ministère de l'Écologie, de l'Energie, du Développement durable et de l'Aménagement du territoire (Paris) 15 April 2008. Date of Access: 2 May 2008. <http//www.developpement-durable.gouv.fr/IMG/pdf/15-04-08_DP_MEM_final_GB_cle59cb4c.pdf>

The meeting produced no major agreements on the development, deployment or distribution of climate-friendly energy technologies.[286]

Russia has developed several new initiatives in the sphere of clean and climate-friendly technologies, but the scope of programs is not large. Thus, Russia has been awarded a score of 0.

*Analyst: Natalia Churkina*

**United Kingdom: +1**

The United Kingdom has fully complied with its energy technology commitment. It has taken significant steps to foster energy technology that promotes low-emission, environmentally-friendly energy production, consumption, and distribution.

British Prime Minister Gordon Brown has committed the United Kingdom to reducing CO2 emissions between 26% and 32% by 2020, and by 60% before 2050.[287] In May 2008, the Energy Bill began readings in the House of Lords. The Bill includes policy initiatives to foster clean-carbon energy production, such as developing a regulatory framework to encourage private investment in carbon capture and storage technologies.[288]

The United Kingdom is supporting the development of innovative technologies such as carbon capture and storage from coal-fired power plants,[289] fossil fuel, nuclear, and geothermal and other renewable sources.[290] In 2007- 2008 the United Kingdom invested GBP10 million in clean energy technologies,[291] and GBP100 million in a competition for proposals for collaborative research and development in eight areas, including energy production and consumption.[292]

The United Kingdom has also begun imposing policies which encourage local implementation of clean energy technologies, including a GBP40 million tax credit to businesses that invest in environmentally-friendly technologies, and GBP18 million in microgeneration grants for households.[293]

At the international level, the United Kingdom has collaborated with multilateral partners to promote clean energy and climate-friendly technologies. In a speech on 19 November 2007, Prime Minister Brown said, "building a low carbon global economy demands a worldwide commitment on a comparable financial scale."[294] In February 2008, the United Kingdom pledged financial support to the World Bank clean

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[285] Major Economies Meeting on Energy Security and Climate Change Paris – 16 to 18 April 2008, Ministère de l'Écologie, de l'Energie, du Développement durable et de l'Aménagement du territoire (Paris) 15 April 2008. Date of Access: 2 May 2008. <http://www.developpement-durable.gouv.fr/IMG/pdf/15-04-08_DP_MEM_final_GB_cle59cb4c.pdf>
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[288] Energy Bill 2007 – 2008, Department for Business Enterprise & Regulatory Reform (London). 11 January 2008. Date of Access: 9 May 2008. <http://www.berr.gov.uk/energy/bill/page40931.html>
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[289] Britain looks for green opportunities, The Age (Melbourne) 10 December 2007. Date of Access: 19 December 2007. <http://business.theage.com.au/britain-looks-for-green-opportunities/20071209-1fys.html>
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[291] £10 million Government support for new technologies to reduce CO2 emissions, The Government News Network (London) 2 January 2008. Date of Access: 9 May 2008. <http://media.netpr.pl/PressOffice/PressRelease.91141.po>
[292] Technology Strategy Board: Home, Techology Strategy Board (London) Date of Access: 9 May 2008. <http://www.technologyprogramme.org.uk/>
[293] Chancellor of the Exchequer's Budget Statement, HM Treasury (London) 21 March 2008. Date of Access: 9 May 2008. <http://www.hm-treasury.gov.uk/budget/budget_07/bud_bud07_speech.cfm>
[294] Speech on Climate Change, 10 Downing Street (London). 19 November 2007. Date of Access: 9 May 2008. <http://www.number-10.gov.uk/output/Page13791.asp>

technology fund for developing nations[295] following up on the position it had articulated at the United Nations Climate Change Conference in December 2007 in Bali, where it supported the transfer of energy efficient technologies to poorer nations.[296]

On 14 March 2008, the United Kingdom participated in the Fourth Ministerial Meeting of the Gleneagles Dialogue on Climate Change, Clean Energy and Sustainable Development. During the meeting, the United Kingdom, along with other participating representatives, emphasized the importance of developing new technologies as an essential measure in improving energy efficiency and the reduction of GHG emissions.[297] The United Kingdom also supported the position that the development and transfer of new clean energy and climate-friendly technologies is necessary in assisting developing nations tackling climate change.[298]

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On 18 April 2008, the United Kingdom participated in the Third Major Economies Meeting on Energy Security and Climate Change held in Paris.[300] The meeting discussed issues of technology cooperation and financing.[301] The meeting produced no major agreements on the development, deployment or distribution of climate-friendly energy technologies.[302]

*Analyst: Ryan MacIsaac*

**United States: +1**

The United States has fully complied with its energy technology commitment. The US has developed a multiplicity of strategies to aid the creation and implementation of low-emission, efficient technologies in energy production, consumption, and transmission.

In January 2008, the United States government cancelled its US$1.1 billion funding for the FutureGen public-private partnership, which was an attempt to create a coal-burning power plant with zero atmospheric emissions.[303] Instead it announced a restructured plan, requesting US$648 million for the 2009 fiscal year for coal research, development, and deployment.[304]

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[295] World Bank plans clean technology fund for poor, Reuters (London) 8 February 2008. Date of Access: 9 May 2008. <http://www.reuters.com/article/latestCrisis/idUSL08349530>
[296] US sets terms for climate talks, BBC News (London) 15 December 2007. Date of Access: 12 January 2008. <http://news.bbc.co.uk/2/hi/science/nature/7145608.stm>
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[298] Gleaneagles-Dialogue on Climate Change, Clean Energy and Sustainable Development 4th Ministerial Meeting Chairs' Conclusions, The Ministry of Foreign Affairs of Japan (Tokyo) 16 March 2008. Date of Access 23 May 2008. <http://www.mofa.go.jp/policy/environment/warm/cop/dialogue0803.html>
[299] Leaders Talk Climate Change at Hawaii Conference, CTV Globe Media (Toronto) 31 January 2008. Date of Access: 8 May 2008. <http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/20080131/climate_change_080131/20080131?hub=SciTech>
[300] Major Economies Meeting on Energy Security and Climate Change Paris – 16 to 18 April 2008, Ministère de l'Écologie, de l'Energie, du Développement durable et de l'Aménagement du territoire (Paris) 15 April 2008. Date of Access: 2 May 2008. <http//www.developpement-durable.gouv.fr/IMG/pdf/15-04-08_DP_MEM_final_GB_cle59cb4c.pdf>
[301] Major Economies Meeting on Energy Security and Climate Change Paris – 16 to 18 April 2008, Ministère de l'Écologie, de l'Energie, du Développement durable et de l'Aménagement du territoire (Paris) 15 April 2008. Date of Access: 2 May 2008. <http://www.developpement-durable.gouv.fr/IMG/pdf/15-04-08_DP_MEM_final_GB_cle59cb4c.pdf>
[302] No Accord at Paris Climate Meeting as More Talks Planned, Associated Press (New York) 18 April 2008. Date of Access: 8 May 2008. <http://ap.google.com/article/ALeqM5hDQzyHvXPYzhJsBSImRWB7L1JhpAD904GM2O1>
[303] After US pulls plug, future unclear for 'clean coal', Agence France-Presse (Washington D.C.) 9 February 2008. Date of Access: 8 May 2008. <http://afp.google.com/article/ALeqM5jA6dH-_0-Hf7d7NgCTVYfBUg3BKA>
[304] DOE Announces Restructured FutureGen Approach to Demonstrate Carbon Capture and Storage Technology at Multiple Clean Coal Plants, U.S. Department of Energy (Washington D.C.) 30 January 2008. Date of Access: 8 May 2008. <http://www.fossil.energy.gov/news/techlines/2008/08003-DOE_Announces_Restructured_FutureG.html>

Internationally, the United States has pursued multilateral discussions with a focus on energy technology. In September 2007, the United States convened seventeen of the world's major economies as well as the United Nations for an inaugural Major Economies Meeting on Energy Security and Climate Change, with the explicit goal of "accelerating and expanding markets for currently available efficiency technology and the use of nuclear, solar, and wind energy,"[305] resulting in "a useful exchange of views."[306]

Furthermore, during the Washington International Renewable Energy Conference on 4-6 March 2008, the United States committed to a series of pledges relating to energy production and consumption technologies, all backed by concrete government policy action.[307] In his State of the Union 2008 speech, US President George W. Bush called for the creation of "a new international clean technology fund, which will help developing nations like India and China make greater use of clean energy sources."[308] The World Bank announced the creation of such a fund shortly thereafter.[309]

In September 2007, the United States participated in the Sydney APEC Summit, signing onto the Leaders' Declaration on Climate Change, Energy Security, and Clean Development, which pledged cooperation for joint research, development, deployment, and transfer of low and zero-emission technologies, as well as renewable energy.[310]

On 14 March 2008, the United States participated in the Fourth Ministerial Meeting of the Gleneagles Dialogue on Climate Change, Clean Energy and Sustainable Development. During the meeting, the United States, along with other participating representatives, emphasized the importance of developing new technologies as an essential measure in improving energy efficiency and the reduction of GHG emissions.[311] The United States also supported the position that the development and transfer of new clean energy and climate-friendly technologies is necessary in assisting developing nations tackling climate change.[312]

On 30-31 January 2008, the United States participated in the Second Major Economies Meeting on Energy Security and Climate Change in Hawaii. The American representative contributed to discussions on how developing countries may acquire technology to burn coal more efficiently as well as technologies relating to carbon capture and storage.[313]

On 18 April 2008, the United States participated in the Third Major Economies Meeting on Energy Security and Climate Change held in Paris.[314] The meeting covered issues of technology cooperation and

[305] Fact Sheet: Major Economies Meeting on Energy Security and Climate Change, The White House (Washington D.C.) 27 September 2007. Date of Access: 15 January 2008. <http://www.whitehouse.gov/news/releases/2007/09/20070927.html>
[306] U.S. Global Climate Change Policy, US State Department (Washington D.C.) 26 November 2007. Date of Access: 18 December 2007. <http://www.state.gov/r/pa/prs/ps/2007/nov/95662.htm>
[307] Vision of WIREC 2008, WIREC 2008 (Washington D.C.) 28 January 2008. Date of Access: 8 May 2008. <http://www.wirec2008.gov/wps/portal/!ut/p/_s.7_0_A/7_0_2B1?navtype=WM&navid=WM_ABOUT>
[308] President Bush Delivers State of the Union Address, The White House (Washington D.C.) 28 January 2008. Date of Access: 8 May 2008. <http://www.whitehouse.gov/news/releases/2008/01/20080128-13.html>
[309] World Bank plans clean technology fund for poor, Reuters (London) 8 February 2008. Date of Access: 8 May 2008. <http://www.reuters.com/article/latestCrisis/idUSL08349530>
[310] Sydney APEC Leaders' Declaration on Climate Change, Energy Security, and Clean Development, Asia-Pacific Economic Cooperation (Sydney) 9 September 2007. Date of Access: 8 January 2008. <http://pandora.nla.gov.au/pan/64638/20071026-0047/www.apec2007.org/apec1440.html?inc=lw/lw_syd_dec>
[311] Gleaneagles-Dialogue on Climate Change, Clean Energy and Sustainable Development 4th Ministerial Meeting Chairs' Conclusions, The Ministry of Foreign Affairs of Japan (Tokyo) 16 March 2008. Date of Access 23 May 2008. <http://www.mofa.go.jp/policy/environment/warm/cop/dialogue0803.html>
[312] Gleaneagles-Dialogue on Climate Change, Clean Energy and Sustainable Development 4th Ministerial Meeting Chairs' Conclusions, The Ministry of Foreign Affairs of Japan (Tokyo) 16 March 2008. Date of Access 23 May 2008. <http://www.mofa.go.jp/policy/environment/warm/cop/dialogue0803.html>
[313] Leaders Talk Climate Change at Hawaii Conference, CTV Globe Media (Toronto) 31 January 2008. Date of Access: 8 May 2008. <http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/20080131/climate_change_080131/20080131?hub=SciTech>
[314] Major Economies Meeting on Energy Security and Climate Change Paris – 16 to 18 April 2008, Ministère de l'Écologie, de l'Energie, du Développement durable et de l'Aménagement du territoire (Paris) 15 April 2008. Date of Access: 2 May 2008. <http//www.developpement-durable.gouv.fr/IMG/pdf/15-04-08_DP_MEM_final_GB_cle59cb4c.pdf>

financing.[315] The meeting produced no major agreements on the development, deployment or distribution of climate-friendly energy technologies.[316]

On 16 November 2007, Japan's Prime Minster Yasuo Fukuda announced the U.S.-Japan Cooperation on Energy Security, Clean Development, and Climate Change, reaffirming the US's partnership with Japan in developing collaborative technology and deployment in various key sectors, including low-carbon fossil fuel power generation, transportation, land use, near-zero carbon energy (e.g., nuclear, wind, and solar), and energy efficiency.[317]

The United States is also actively pursuing bilateral partnerships with India and China, and smaller countries such as Bulgaria, to foster more efficient energy technology development through cooperation.[318] For example, in conjunction with the United States, China will introduce an appliance labeling system to encourage efficient consumption, and public-private partnerships will introduce cleaner technologies to existing coal-fired power plants.[319]

Thus, the United States has been awarded a score of +1.

*Analyst: Ryan MacIsaac*

**European Union: 0**

The European Union has partially complied with its commitment on clean energy technology.

On 25 September 2007, the European Parliament adopted the Roadmap for Renewable Energy in Europe, a non-legislative resolution. The Roadmap recommended that the European Commission set "clear and realistic binding targets for the electricity, transport and heating and cooling sectors," and that funds from Europe's Emissions Trading Scheme (ETS) be used for research into renewable sources of energy including "osmosis energy, tidal energy, wave energy, concentrated solar power, high altitude wind power, laddermill energy and algae fuel technology."[320]

The European Union is also a signatory to the Bali Action Plan, which was adopted at the United Nations Climate Change Conference held in Bali in December 2007. The plan pledges financial support for the development, transfer, and enhancement of environmentally sound technologies for developing countries.[321] The plan also commits to cooperation in the research and development of new and innovative clean energy technology.[322]

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[315] Major Economies Meeting on Energy Security and Climate Change Paris – 16 to 18 April 2008, Ministère de l'Écologie, de l'Energie, du Développement durable et de l'Aménagement du territoire (Paris) 15 April 2008. Date of Access: 2 May 2008. <http://www.developpement-durable.gouv.fr/IMG/pdf/15-04-08_DP_MEM_final_GB_cle59cb4c.pdf>
[316] No Accord at Paris Climate Meeting as More Talks Planned, Associated Press (New York) 18 April 2008. Date of Access: 8 May 2008. <http://ap.google.com/article/ALeqM5hDQzyHvXPYzhJsBSImRWB7L1JhpAD904GM2O1>
[317] U.S.-Japan Cooperation on Energy Security, Clean Development, and Climate Change, U.S. Department of State (Washington D.C.) 16 November 2007. Date of Access: 2 January 2008. <http://www.state.gov/p/eap/rls/fs2007/95289.htm>
[318] China, US to formulate energy, environment protection 10 yr plan, Forbes (New York) 12 December 2007. Date of Access: 12 January 2008. <http://www.forbes.com/markets/feeds/afx/2007/12/12/afx4430072.html>
- China, US forge new commitments following strategic talks – UPDATE, AFX News (London) 13 December 2007. Date of Access: 12 January 2008. <http://www.forbes.com/markets/feeds/afx/2007/12/13/afx4434668.html>
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- Mission Statement: 2nd U.S. APP Clean Energy Trade Mission to China and India, Export.gov (Washington D.C.). Date of Access: 12 January 2008. <http://www.export.gov/cleanenergymission/doc_cem_mission.asp>
- United States and Bulgaria Sign Science and Technology Cooperation Agreement, U.S. Department of State (Washington D.C.) 4 January 2008. Date of Access: 8 May 2008. <http://www.state.gov/r/pa/prs/ps/2008/jan/98431.htm>
[319] U.S. Global Climate Change Policy, US State Department (Washington D.C.) 26 November 2007. Date of Access: 18 December 2007. <http://www.state.gov/r/pa/prs/ps/2007/nov/95662.htm>
[320] EP: non-legislative resolution, European Union (Brussels) 25 September 2007. Date of Access: 12 January 2008. <http://www.europarl.europa.eu/oeil/file.jsp?id=5479322>
[321] Bali Action Plan, United Nations Framework Convention on Climate Change (Bonn) 14 December 2007. Date of Access: 16 January 2008. <http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf>
[322] Bali Action Plan, United Nations Framework Convention on Climate Change (Bonn) 14 December 2007. Date of Access: 16 January 2008. <http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf>

In January 2008, the EU Commission proposed a "wide-ranging and ambitious" energy and climate change package, inspiring all major CO2 emitters to develop clean production technologies through the Emission Trading System.[323]

On 14 March 2008, the European Union participated in the Fourth Ministerial Meeting of the Gleneagles Dialogue on Climate Change, Clean Energy and Sustainable Development. During the meeting, the European Union, along with other participating representatives, emphasized the importance of developing new technologies as an essential measure in improving energy efficiency and the reduction of GHG emissions.[324] The EU also supported the position that the development and transfer of new clean energy and climate-friendly technologies was necessary in assisting developing nations tackling climate change.[325]

On 30-31 January 2008, the European Union participated in the Second Major Economies Meeting on Energy Security and Climate Change in Hawaii. The EU representative contributed to discussions on how developing countries may acquire technology to burn coal more efficiently as well as technologies relating to carbon capture and storage.[326]

On 18 April 2008, the European Union participated in the Third Major Economies Meeting on Energy Security and Climate Change held in Paris.[327] The meeting discussed issues of technology cooperation and financing.[328] The meeting produced no major agreements on the development, deployment or distribution of climate-friendly energy technologies.[329]

Although the EU has promoted the issue of clean energy technologies at both the regional and international levels, it has been awarded a score of 0 for its lack of comprehensive initiatives.

*Analyst: Sam Zhao*

[323] Governments/Institutional Website MEPs Give First Reactions to Climate Change and Energy Package, European Parliament (Brussels) 23 January 2008. Date of Access: 7 April 2008. <http://www.europarl.europa.eu/news/expert/infopress_page/008-19356-023-01-04-901-20080122IPR19355-23-01-2008-2008-true/default_en.htm>

[324] Gleaneagles-Dialogue on Climate Change, Clean Energy and Sustainable Development 4th Ministerial Meeting Chairs' Conclusions, The Ministry of Foreign Affairs of Japan (Tokyo) 16 March 2008. Date of Access 23 May 2008. <http://www.mofa.go.jp/policy/environment/warm/cop/dialogue0803.html>

[325] Gleaneagles-Dialogue on Climate Change, Clean Energy and Sustainable Development 4th Ministerial Meeting Chairs' Conclusions, The Ministry of Foreign Affairs of Japan (Tokyo) 16 March 2008. Date of Access 23 May 2008. <http://www.mofa.go.jp/policy/environment/warm/cop/dialogue0803.html>

[326] Leaders Talk Climate Change at Hawaii Conference, CTV Globe Media (Toronto) 31 January 2008. Date of Access: 8 May 2008. <http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/20080131/climate_change_080131/20080131?hub=SciTech>

[327] Major Economies Meeting on Energy Security and Climate Change Paris – 16 to 18 April 2008, Ministère de l'Écologie, de l'Energie, du Développement durable et de l'Aménagement du territoire (Paris) 15 April 2008. Date of Access: 2 May 2008. <http//www.developpement-durable.gouv.fr/IMG/pdf/15-04-08_DP_MEM_final_GB_cle59cb4c.pdf>

[328] Major Economies Meeting on Energy Security and Climate Change Paris – 16 to 18 April 2008, Ministère de l'Écologie, de l'Energie, du Développement durable et de l'Aménagement du territoire (Paris) 15 April 2008. Date of Access: 2 May 2008. <http://www.developpement-durable.gouv.fr/IMG/pdf/15-04-08_DP_MEM_final_GB_cle59cb4c.pdf>

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