Energy:
Conservation and Renewables

Commitment

"We recognized the need for balanced energy policies, which increase energy supplies and encourage more efficient energy use and conservation, including through new technologies."

G8 2004 Sea Island Summit Chair's Summary

Background

In the face a growing realization over the dwindling supplies of conventional energy sources (particularly petroleum based energy sources) and the damaging effects of climate change, G8 member states have committed to developing and implementing energy policies that focus on innovation, conservation and sustainability. Particularly relevant is the adoption of renewable energy sources and technologies. At the 2003 Evian Summit, the G8 member states agreed "to support the development of cleaner, sustainable and more efficient technologies," including developing technologies which would promote "cleaner, sustainable and more efficient energy use".[421] These commitments dovetail with the commitments of all those G8 member-states who have ratified the Kyoto Protocol on Climate Change (all members but the United States). The Protocol, which calls for industrialized countries to collectively reduce their green house gas emissions by 5.2% (compared to 1990 levels) by the year 2012, became legally binding on February 16th, 2005.[422] All of the member states of the G8, along with many other states, also participated at the International Conference for Renewable Energies, which occurred from June 1-4th 2004 in Bonn Germany and concerned a global expansion of renewable energy usage.[423]

Due to these and other recent developments, energy efficiency and conservation will be a key issue at the 2005 Gleneagles G8 summit. One document, recently published on the internet and professing to be a leaked draft of a "Sustainable Energy and Climate Change" communiqué for the G8's climate change talks at the Gleneagles summit, states that "At Evian and again at Sea Island," the G8 "agreed on the need for the G8 to work together to develop innovative clean energy technologies. And there are already many examples of progress at all levels, ranging from the actions of individual companies, to cities and states, to national and international action. Now, we need to accelerate our efforts."[424] Some sources, however, question the validity of the approach that the G8 has used as a basis for its policy formulation, calling it a "failed recipe" to stop climate change.[425] There has also been significant disagreement between the United States

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[421] "Science and Technology for Sustainable Development, a G8 Action Plan" 2003 G8 Summit Document. <www.g8.fr/evian/english/navigation/2003_g8_summit/summit_documents/science_and_technology_for_sustainable_development_-_a_g8_action_plan.html>

[422] Kyoto Protocol comes into force" BBC News Online. February 16th, 2005. <news.bbc.co.uk/1/hi/sci/tech/4267245.stm>

[423] "Final Draft of the International Action Programme for Renewable Energies." June 4th 2004. < www.campus-oei.org/salactsi/International_Action_Programme_final.pdf>

[424] "Leaked G8 Draft Climate Decisions" <carroll.org.uk/archives/2005/05/25/leaked-g8-draft-climate-decisions/2>

[425] "Blair wins support for G8 plans" BBC News Online. May 27th, 2005. <news.bbc.co.uk/1/hi/uk_politics/4585273.stm>

and the United Kingdom over the climate change issues, and this could hinder the chances of a deal being reached at Gleneagles. The head American climate change negotiator has told the BBC that while the United States will continue to support investment in new forms of energy technology, the Bush administration feels that the science on climate is still uncertain and does not warrant immediate action.[426]

Assessment

Country	Non-Compliance –1	Work in Progress 0	Full Compliance +1
Canada			+1
France			+1
Germany			+1
Italy		0	
Japan			+1
Russia		0	
United Kingdom			+1
United States			+1
European Union			+1
Overall: 0.78			

Individual Country Compliance Breakdown

1. Canada: +1

Canada has complied with its G8 energy commitments. Canada maintains its involvement in the Generation IV International Forum (GIF) concerning nuclear energy. Additionally, the Canadian Ministry of Natural Resources continues to increase and improve energy supply in Canada through the use of public policy and the policy of crown corporations such as the Atomic Energy Corporation (AECL).

Since January 2005 Canada has shown itself to be proactive in balancing increased energy supply with efficiency and conservation. Following up on a September 2004 AECL recommendation to refurbish old nuclear plants to meet critical demand,[427] the Pickering and Bruce nuclear stations in the province of Ontario are currently under repair.[428] In addition, on a provincial level, the government of Ontario has committed to keeping one coal-fired electricity plant on-line for several more years to raise energy production while Prince Edward Island has announced a scheme to move to 100% wind power electricity use by 2015. In an effort to encourage more efficient energy use, the Canadian government is also advocating and publishing information on fuel efficiency and is trying to engage Canadians in the 1-Tonne challenge, a

[426] Harrabin, Roger. "US to reject UK climate measures" BBC News Online. May 13th, 2005. <news.bbc.co.uk/1/hi/sci/tech/4542951.stm>
[427] Torgerson, David F. "Next Steps for Meeting the Power Demand in Canada." CERT Energy Conference. Atomic Energy of Canada Limited. 20 September 2004. Consulted: 3 January 2005. <www.aecl.ca/images/up-DFT-Brussels.pdf> p2
[428] Canadian Nuclear Association Electronic Newsletter. Vol. 6, number 5. April 8, 2005. Consulted 10 May 2005. <www.cna.ca/Newsletters/2005/NC0605.pdf,>

challenge designed to reduce personal energy use.[429] Under the initiative, the federal government provides subsidies and refunds to improve home electricity efficiency, provide better insulation and power usage and not promote the use of hybrid vehicles.[430] Lastly, the 2005 federal budget was recently amended in a deal between the ruling Liberal Party and the New Democratic Party to provide an additional C$900 million for the environment including home upgrades and energy efficiency, with one more cent of the federal gas tax going to public transit.[431]

On February 20, 2005, the Canadian government signed an international agreement as part of the GIF framework. The agreement is designed to "develop nuclear reactor designs for use beyond 2025 that address the challenges facing nuclear technologies today."[432] The agreement will give Canadians a stake in GIF policy.[433]

Canada is also cooperating with other states to develop new energy technologies. A memorandum of understanding was signed between Canada and China on January 20th, 2005 that promises opportunities for further development of advanced CANDU reactors. The memorandum promises to "establish a framework for [Sino-Canadian] collaboration on research and development programs."[434]

2. France: +1

France is compliant with its energy commitments to promote energy conservation and the development of new technologies. In October 2004, the budget presented by the National Assembly of France increased financing for the Agence de l'Environnement et de la Maîtrise de l'Energie (ADEME), a body which spends the majority of its money on projects relating to energy conservation, research and development.[435] Additionally, France has continued to fund the Commissariat à l'Energie Atomique (CEA) which is responsible for technological developments in the nuclear field.[436]

France also maintained a role in the Generation IV International Forum's nuclear research and development commitments.[437] Furthermore, on the topic of nuclear power, France's Electricite

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[429] NRCan. November 2004. Consulted: January 7, 2005. <www.nrcan-rncan.gc.ca/media/newsreleases/2004/200466_e.htm>
[430] *One-Tonne Challenge.* Government of Canada (Ministry of Energy and Environment Canada) (Ottawa) 2005. Date of Access: 15 June 2005 [www.climatechange.gc.ca/onetonne/english/index.asp].
[431] "Liberal-NDP Budget Deal – April 2005," *CBC News* (Toronto) 27 April 2005. Date of Access: 1 June 2005 [www.cbc.ca/news/background/budget2005/liberal-ndp-deal.html].
[432] "Nuclear Energy: Canada Signs International Research Agreement." Government of Canada, 2005/11, February 28, 2005. Consulted: May 10, 2005. <www.nrcan.gc.ca/media/newsreleases/2005/200511_e.htm>
[433] Ibid
[434] "Canada and China Strengthen Cooperation in Nuclear Energy." Beijing, PRC, January 20th, 2005. Consulted May 13 2005. <www.aecl.ca/index.asp?layid=55&csid=168&csid1=121&menuid=48>
[435] "Annexe No17: Economie, Finances et Industrie" *Loi de Finance pour 2005*. Assemblee Nationale. 13 October, 2004. Consulted: 7 January, 2005. < www.assemblee-nationale.fr/12/budget/plf2005/b1863–17.asp#P1206_69305> p34
[436] Ibid, p27
[437] Ibid, p36

de France (EDF), which uses nuclear energy to provide 86% of its power, decided in late October to construct a European Pressurized Reactor, due to be completed in 2012.[438]

Since the publication of the G8 mid-term compliance report in early January of 2005, France has invested in renewable energy and formed new international partnerships. On April 21, 2005, EDF engaged in a partnership with the China Guangdong Nuclear Power Holding Corp to expand energy supplies by building new nuclear plants, moving toward long-term cooperation in investment, engineering, and partnerships in the area of nuclear energy.[439] Also, on May 12, 2005, the EDF, in conjunction with Total, purchased 20% of Total Energy, which specializes in solar cell technology, thereby showing a commitment to the research and development of a renewable energy source.[440] The EDF also continues to advocate efficient energy use in buildings and in everyday life on its website.[441]

France has also increased it energy conservation and efficiency as measured by carbon emission per year. Overall, France has reduced its carbon emissions by 1.9% from 1990 levels since 2002 and they continue to fall. At this rate, France is already in compliance with its Kyoto goals for GHG emission reduction, which are a function of energy conservation.[442]

3. Germany: +1

Germany has demonstrated evidence of full compliance with its 2004 energy summit commitments. Germany continues to maintain its position as a European leader in renewable energy sources and carbon emission reduction.

Germany has continued with its planned phase out of nuclear-based energy with the second closure of a major nuclear power plant.[443] Despite the fact that nuclear-based power accounts for a third of Germany's energy production, Germany has made a commitment to phase out all nuclear power by the year 2020. In an interview in March 2005, German Environment Minister Jürgen Trittin promised to double renewable energies (wind, sun, biological and geo-thermal) from the current 10% to a projected 20% in order to replace the nuclear power shortfall by the year 2020. Trittin further committed to better efficiency pertaining to fossil fuels.[444]

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[438] Session Ordinaire de 2004-2005. Senat No76. 25 November, 2004. International Nuclear Energy Initiative. U.S. Department of Energy. October 24, 2004. Consulted: January 3, 2005. <www.ne.doe.gov/infosheets/i-neri.pdf> p26

[439] "Chine: EDF Signe Deux Nouveaux Contrats de Partenariats Industrielle." Paris, EDF News Release. 21 April, 2005. Consulted: 13 May 2005. <www.edf.com/index.php4?coe_i_id=20410&iPage=2&UserCoe_i_id=227>

[440] "Energies Renouvelables: EDF et Total renforcent leur presence dans le photovoltaique." Paris. EDF News Release. 12 May, 2005. Consulted: 13 May 2005. <www.edf.com/index.php4?coe_i_id=20410&iPage=1&UserCoe_i_id=227>

[441] "Recherche et Developpement." Electricite de France. 2004. Consulted: 3 January, 2005. <www.edf.fr/index.php4?coe_i_id=20003>

[442] Table 1: Greenhouse gas emission in CO_2-equivalents (excl. LULUCF emissions and removals) and Kyoto Protocol targets for 2008-2012, Europa: Environment: Greenhouse Gas Emissions in the Community (Brussels) 2004. Date of Access: 10 May 2005 [europa.eu.int/comm/environment/climat/gge_press.htm].

[443] "Germany Shuts Second Nuclear Power Plant in Phase Out Plan" Bloomburg May 11 2005 <www.climateark.org/articles/reader.asp?linkid=41684>

[444] "Interview: Germany's Environment minister Jürgen Trittin" Guardian Unlimited Tuesday March 15, 2005 <www.guardian.co.uk/climatechange/story/0,12374,1437662,00.html#article_continue>

Germany is also working with other states to develop new energy policies. During a visit to Germany on February 25 2005, President George Bush of the United States joined with German chancellor Gerhard Schröder to announce the "U.S.-German Joint Actions on Cleaner and More Efficient Energy, Development and Climate Change". The agreement outlined five areas where the U.S. would work with Germany to "promote strong economic growth, reduce harmful air pollution, improve energy security, and mitigate greenhouse gas emissions"[445] These action areas include energy cooperation with developing countries, energy conservation and efficiency, modernization of domestic power generation, innovation for future energy systems, and International cooperation for renewable energy.[446]

Germany's Kyoto commitment is to reduce its green house gas emissions 21% by 2012 (after adjusted with the EU collective burden-sharing agreement). German Environment minister Jürgen Trittin states that Germany has already reached 19%, thereby surpassing their projected reductions for this year.[447]

4. Italy: 0

Italy has shown adequate interest in renewable energies to partially comply with its G8 energy commitment but has not significantly succeeded in increasing its energy production and improving its energy efficiency.

Italy has committed to hosting *SolarExpo* an "International Conference & Exhibition on Renewable Energy" from May 19-21 2005 in Venice. The three-day summit, which focuses on "delivering a sustainable future,"[448] is a brokerage event, which promises to aid universities, businesses, and research institutes in promoting all aspects of the renewable energies sector.[449] The event has been called the "leading renewable energy event in Europe."[450] Also, from November 14–16 2004, *Green Power Mediterranean* was hosted in Rome, Italy. The event created a "focused platform for networking and knowledge transfer that will further the adoption of renewable energy systems (RES) and energy efficiency (EE) programs in the region".[451]

Italy has also shown interest in authenticating the claim that global warming is a reality, thereby supporting the need for renewable and more efficient forms of energy. On April 23, 2005, Italy sent a mission to the Antarctic that was able to gather data from a 900,000 year old sample of

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[445] "Bush Visit 2005: U.S.-German Joint Actions on Cleaner and More Efficient Energy, Development and Climate Change" The White House: United States Diplomatic Mission To Germany February 23 2005 <www.usembassy.de/germany/statement_climate.html>
[446] "Bush Visit 2005: U.S.-German Joint Actions on Cleaner and More Efficient Energy, Development and Climate Change" The White House: United States Diplomatic Mission To Germany February 23 2005 <www.usembassy.de/germany/statement_climate.html>
[447] "Interview: Germany's Environment minister Jürgen Trittin" Guardian Unlimited Tuesday March 15 2005 <www.guardian.co.uk/climatechange/story/0,12374,1437662,00.html#article_continue>
[448]"SolarExpo: Delivering a Sustainable Future" SolarExpo Vicenza May 2005 <www.solarexpo.com/>
[449] "Renewable Energy Brokerage Event, Italy." Cordis News March 4 2005<dbs.cordis.lu/cgi-bin/srchidadb?CALLER=NHP_EN_NEWS&ACTION=D&SESSION=&RCN=EN_RCN_ID:23470>
[450] "Solarexpo 2005" Caddet: Energy Efficiency and Renewable Energy At Your Fingertips 2005<www.caddet.org/events/display.php?id=20459>
[451] "Green Power Mediterranean" Caddet: Energy Efficiency and Renewable Energy At Your Fingertips 2005 <www.caddet.org/events/display.php?id=20249>

ice, double the age of any sample taken to date. The sample was able to show carbon levels in the atmosphere during previous cold and warm periods, proving that there currently exists a rise in carbon levels never before experienced in history. The new information could be enough to discredit the diminishing field of climate change sceptics.[452]

Italy also continues to show its interest in wind power. With the recent establishment of a new wind power plant in Sicily. Italian Environment Minister Altero Matteolli said: "Wind energy plays a part not to be ignored for reaching the environmental-energy policies of our country." The plant was officially opened on May 12, 2005.[453] Nevertheless, Italy's efforts at improving energy efficiency seemed to be stalled based on its carbon emissions rates. While Italy has been mandated to reduce its rates by 6.5% from 1990 levels by 2012, it has currently increased its rates 9.0% since 2002.[454]

5. Japan: +1

Japan has embraced new forms of energy. In 2004, Japan was the world leader in solar energy, accounting for more than 51 percent of world photovoltaic cell production in terms of electrical power measured in megawatts. [455] Japan is also very active in other forms of alternative energy, including wind and hydrogen power. Among other developments, some Japanese innovators have begun to develop a project which harnesses industrial exhausts to provide wind power.[456] Fiscally, the Japanese New Energy and Industrial Technology Development Organization, a part of the Ministry of Economy, Trade and Industry, had $1.495 billon (USD) budgeted for research and development of oil alternative energy sources and new conservation methods for fiscal year March 2004- March 2005.[457]

Japan is also a world leader in promoting energy conservation. The Japanese Ministry of Economy, Trade and Industry announced in April 2005 that Japan plans to make a proposal at the November 2005 UN Framework Convention on Climate Change that industrialized nations transfer energy-saving technologies to developing nations.[458] This commitment extends to sustainable development. Sustainable development, including the use of new energy technologies, is one of the main themes of the 2005 World Expo, hosted in the Aichi province of Japan. According to the official expo website, "To demonstrate a model recycling society in the

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[452] "900,000-year-old ice may destroy US case on Kyoto" The Guardian April 23 2005 <www.guardian.co.uk/climatechange/story/0,12374,1468499,00.html>

[453] "Environment: Matteoli Wind Power Plant Inaugurates In Sicily" Agenzia Giornalistica Italia May 13 2005 <www.agi.it/english/news.pl?doc=200505121921–1217-RT1-CRO-0-NF51&page=0&id=agionline-eng.arab>

[454] Table 1: Greenhouse gas emission in CO_2-equivalents (excl. LULUCF emissions and removals) and Kyoto Protocol targets for 2008-2012, Europa: Environment: Greenhouse Gas Emissions in the Community (Brussels) 2004. Date of Access: 10 May 2005 [europa.eu.int/comm/environment/climat/gge_press.htm].

[455] "Japanese firms embrace green technology" Taipei Times, April 6th, 2005. <www.taipeitimes.com/News/biz/archives/2005/04/06/2003249373>

[456] "Around Japan:Wind-power gurus harness vent exhaust" Asahi.com, December 28th, 2004. <www.asahi.com/english/nation/TKY200412280161.html>

[457] "Japanese firms embrace green technology" Taipei Times, April 6th, 2005. <www.taipeitimes.com/News/biz/archives/2005/04/06/2003249373> and "What is NEDO?" <www.nedo.go.jp/english/introducing/what.html>

[458] "Japan to propose giving energy-saving know-how to developing nations" China View April 23rd, 2005. <news.xinhuanet.com/english/2005-04/23/content_2869368.htm>

21st century" the fair has models which show how "new energy and new recycling technology are utilized."[459] Japanese Prime Minister Junichiro Koizumi has even gone so far as to state that his cabinet ministers and himself will shed their business suits and wear lighter khakis and golf shirts during the summer and has enjoyed fellow Japanese citizens to do the same as part of a campaign to cut down on the country crippling use of high-energy air-conditioning.[460]

6. Russia: 0

Russia, in its energy policy, has demonstrated partial compliance with its 2004–05 G8 energy summit commitments. Russia is moving towards expanding both its energy production and potential and existing markets for that energy.

On February 7th, 2005, the key points of the Russian report on the developmental prospects of energy sector, presented by the Russian delegation at the meeting of the G8 Finance Ministers, were supported by the Ministers and added to the final communiqué. Aside from highlighting the importance of price stability for further economic development, the Russian Minister of Finance, A. L. Kudrin also provided some comments on the report itself, which according to Kudrin emphasizes the following issues: "energy efficiency, distribution of resource sources and investments, and increased accounts' transparency among countries- suppliers and countries-consumers of the energy resources".[461]

On April 1st, 2005, the Government of Russia increased the export duties on oil a record of $102.6 per tonne (in comparison, in February 2005 the same duty was $83/ tonne and in June 2005 it is expected to reach $130–133/ tonne)[462]. And on April 21, 2005, the Ministry of Economic Development of Russia presented to the Russian Government a progressive "Complex Plan for Reforming the Electric Energy Sector in the period of 2005-2008" that includes a total of 60 different projects.[463]

Nevertheless, the 2005 trial of billionaire Mikhail Khodorkovsky, owner of the Yukos oil conglomerate, in Moscow has sent a chill through the Russian oil sector and stalled foreign investment and expansion of Russia's energy sector. Indeed, with Moscow confiscating one of Yukos' main production facilities in order to finance unpaid tax claims, the country's largest oil company is now generating only 20% the production of oil as it was at its peak. The fact that many suspect the trial of Mr Khodorkovsky to be politically motivated has further destabilized

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[459] "Themes and Sub themes" Expo 2005 Website. <www–1.expo2005.or.jp/en/whatexpo/theme.html>

[460] "Japanese Veto Suits in Summer Heat," *BBC World News* (London) 1 June 2005. Date of Access: 16 June 2005 [news.bbc.co.uk/2/hi/asia-pacific/4598329.stm].

[461] RIA News, Ministry of Finance, 7 February 2005. Date of Access: 10 May 2006 <www.minfin.ru/off_inf/1207.htm>

[462] Interfaks, Ministry of Finance, 19 April 2005. Date of Access: 9 May 2005 <www.minfin.ru/off_inf/1291.htm>

[463] Ministry of the Economy, 21 April 2005. Date of Access: 13 May 2005 <www.economy.gov.ru/wps/portal/!ut/p/_s.7_0_A/7_0_9H/.cmd/ad/.ar/sa.detailURI/.ps/X/.c/6_0_6A/.ce/7_0_1LB/.p/5_0_IV/.d/3/_th/J_0_CH/_s.7_0_A/7_0_9H?PC_7_0_1LB_documentId=1114087321609&PC_7_0_1LB_documentType=releases#7_0_1LB>

Russia's energy sector and has made foreign and domestic investors nervous to sink any amount of funds into large-scale project for increased power generation.[464]

7. United Kingdom: +1

The United Kingdom of Great Britain and Northern Ireland is in compliance with its 2004 Sea Island energy commitments. The United Kingdom is a part of the international energy challenge of maintaining access to secure and affordable energy supplies, while still contributing to climate change mitigation. Therefore, a number of major changes are expected in the near future. Upon this realization, UK's Prime Minister, Hon. Tony Blair has commented: "I want Britain to be a leading player in this coming green industrial revolution".[465]

On January 11th, 2005, 56 cross-national projects aimed at innovation and economy boosting received a £60 million funding from the Department of Trade and Industry, among which £16.6 million was dedicated to technologies for supporting environmentally friendly transport, and £9.3 million was awarded to projects that deal with renewable energy technologies.[466]

On January 31st, 2005, UK Ewnergy Minister Mike O'Brien announced that under a new support framework of £42million (from the Marine Reasearch Deployment Fund) the UK's first large scale wave and tidal power generation farms are expected to significantly contribute to the national grid within three years. "This will enable British industry to maintain world leadership in this crucial renewable energy sector", said the Minister.[467]

On March 16th, 2005, Energy and Environment Ministers from 20 countries agreed at the Rountable in London on the need for a portfolio of technologies and solutions in order for developed and the developing countries to combat the challenges posed by global climate change through carbon emission cuts. Margaret Beckett, Environment, Food and Rural Affairs Secretary of State commented on the event: "Today is the start of a new dialogue between Energy, Environment and Finance Ministers on how we can tackle the challenge of climate change".[468]

In May, 2005, a two-day Energy and Research Innovation Workshop on improving collaboration on clean energy was hosted by Oxford, UK (initiated by the energy developers from the G8 and five developing countries), in order to compare and link programmes and priorities of sustainable

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[464] "Russia Cuts Economic Forecast for the Second Time in a Month," *Bloomberg.com* (New York) 16 June 2005. Date of Access: 16 June 2005 [quote.bloomberg.com/apps/news?pid=10000006&sid=akpd.twgWtQM&refer=home].

[465] Sustainable Development and Environment Index, Department of Trade and Industry. Date of Access: 12 May 2005 <www.dti.gov.uk/sustainability/index.htm>

[466] "Winners of £60 million DTI Technology Strategy Funding Announced Today" Government News Network, Department of Trade and Industry, 11 January 2005. Date of Access: 10 May 2005 <www.gnn.gov.uk/content/detail.asp?ReleaseID=141382&NewsAreaID=2&NavigatedFromSearch=True>

[467] "Wave and Tidal Power to Feed Grid within Three Years" Government News Network, Department of Trade and Industry, 31 January 2005. Date of Access: 5 May 2005 <www.gnn.gov.uk/content/detail.asp?ReleaseID=143951&NewsAreaID=203&NavigatedFromSearch=True>

[468] "International Conference Launches New Climate Change Dialogue" Government News Network, UK Department of the Environment, Food and Rural Affairs, 16 March 2005. Date of Access: 11 May 2005 <www.gnn.gov.uk/content/detail.asp?ReleaseID=152277&NewsAreaID=2&NavigatedFromSearch=True>

energy (including enhanced research on solar energy, carbon capture and storage, bioenergy, and discussions on environment and transport).[469]

The UK has also increased it energy conservation and efficiency as measured by carbon emission per year. Overall, the UK has reduced its carbon emissions by 14.9% from 1990 levels since 2002 and they continue to fall. At this rate, the UK is already in compliance with its Kyoto goals for GHG emission reduction, which are one of the best indicators of energy conservation and efficiency in an economy.[470]

8. United States: +1

Although American energy policy does not appear to effectively balance its commitments to increasing supplies and to promoting conservation, the USA is in compliance with its Sea Island Summit energy commitment. US energy policy is focused on the development of domestic coal and petroleum reserves and technologies. A second objective of US policy is the development of new technologies to further improve America's domestic capacity for energy production from other sources and thus reduce its reliance on foreign producers. Finally, US policy seeks to promote greater awareness among consumers of efficient technologies and the need for greater conservation.

The Bush energy bill, the centrepiece of the administration's future energy policies, was passed by the US Congress in April 2005. The bill calls for $8.1 BUSD in tax breaks over 10 years to promote the coal, nuclear, oil, and natural gas industries; and for the development of the Arctic National Wildlife Refuge for oil exploration and drilling.[471] The president remains firmly committed to developing the Arctic National Wildlife Reserve for oil and gas exploration, explaining this will reduce US dependence on foreign sources of oil,[472] yielding an additional 1.5 million barrels of oil per day.[473]

Increased development of domestic energy sources through the expansion of the American coal and oil sectors is the cornerstone of current US energy policy. In November of 2004 former Energy Secretary Abraham confirmed the primacy of coal in the administration's energy policy when he described coal as America's "most abundant and economical source of fuel," and "as a key factor in our nation's future energy security." [474] In order to further develop this resource the administration has "laid out a 10-year, $2 billion commitment to the development of clean coal

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[469] "Improving Collaboration on Clean Energy" Government News Network, Department of Trade and Industry, 13 May 2005. Date of Access: 13 May 2005 <www.gnn.gov.uk/Content/Detail.asp?ReleaseID=156525&NewsAreaID=2>

[470] Table 1: Greenhouse gas emission in CO_2-equivalents (excl. LULUCF emissions and removals) and Kyoto Protocol targets for 2008-2012, Europa: Environment: Greenhouse Gas Emissions in the Community (Brussels) 2004. Date of Access: 10 May 2005 [europa.eu.int/comm/environment/climat/gge_press.htm].

[471] Final Vote on Energy Bill Expected Thursday. 21 April 2005. www.cnn.com

[472] President Discusses Energy Policy. 9 March, 2005. <www.whitehouse.gov>

[473] "Abraham: Alaska Drilling, Energy Policy to Clear Senate". Reuters wire story. New York Times: January 4, 2005. <www.nytimes.com/reuters/politics-energy-usa-policy>.

[474] Remarks to the National Coal Council by Energy Secretary Abraham. 10 November 2004. <www.energy.gov>

technology."[475] In March of 2005 the president pledged $1.6-billion USD over five years for further development of 'clean coal' technologies.[476]

Additionally, current American energy policy includes a commitment to developing new technologies and new sources of energy, and expanding underdeveloped sectors. In July of 2004 the administration announced awards for "five new cost-shared research projects to help meet the nation's growing demand for natural gas"[477], including eleven new projects that focus on "solving the remaining issues in developing solid oxide fuel cell (SOFC) systems for commercial use."[478] In addition the administration has "initiated a public-private partnership between DOE and the nation's automakers to accelerate the development of hydrogen fuel cell vehicles."[479] Secretary Bodman recently discussed the administration's plans to fund research into solar power technologies, while re-asserting the commitment to develop hydrogen fuel technologies.[480] The expansion of existing energy sectors also includes an increased commitment to nuclear power generation.[481] This commitment has been confirmed by President Bush who recently called for the development of new nuclear facilities, explaining that no new plants have been constructed in America since the 1970s.[482]

According to President Bush, US energy consumption has been growing forty times faster than its domestic production capacity.[483] He recently explained, therefore, that "the first objective of a sound energy bill is to encourage the use of technology to improve energy conservation", and that the administration's policies regarding conservation are directed toward helping consumers "make better choices".[484] Although concrete conservation policy initiatives are scarce, the administration is attempting to reduce US energy consumption by encouraging the development and adoption of energy-efficient technologies, and greater awareness among consumers.

In addition, on 15 June 2005, the US Senate passed a surprising amendment to President Bush's ambitious energy bill. The US Senate vote 70-26 to incorporate an 8-billion-gallon Renewable Fuel Standard into the energy bill. Under the terms, 8-billion gallons of renewable fuel, primarily ethanol must be in use in the United States by 2012.[485] On the same day, President Bush outlined

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[475] Ibid.
[476] President Discusses Energy Policy. 9 March, 2005. <www.whitehouse.gov>
[477] "DOE to Help Develop Advanced Energy Exploration Tools and Technologies". <www.fossil.energy.gov/news/techlines/2004/tl_advanced_diagnostics.html>
[478] "New Fuel Cell Projects to Continue Progress to Zero Emissions Energy". 19 July 2004. <www.fossil.energy.gov/news/techlines/2004/tl_seca_awards071904.html>
[479] Remarks to the National Petroleum Council by Energy Secretary Abraham. 1 December 2004. <www.energy.gov>
[480] "DOE's support…in fiscal 2006 also includes funding the Concentrating Solar Power task force at about $200,000." Remarks of Secretary Bodman at the Western Governors Association Annual Breakfast. 1 March 2005. <www.energy.gov>
[481] "We are…pursuing Generation IV nuclear technologies..." Remarks to the National Petroleum Council by Energy Secretary Abraham. 1 December 2004. <www.energy.gov>
[482] President Discusses Energy Policy. 9 March, 2005. <www.whitehouse.gov>
[483] President Bush's News Conference: 28 April 2005. <www.cnn.com>
[484] President Discusses Energy Policy. 9 March, 2005. <www.whitehouse.gov>
[485] *Senate Votes for 8-Billion-Gallon RFS; Cantwell Proposes 7.6 Mbpd Cut in Oil Consumption*, Green Car Congress (US) 15 June 2005. Date of Access: 16 June 2005

his new energy policy in Washington that underlined both of the Sea Island's energy commitment's main foci: increased energy production and increased energy efficiency. The Bush energy agenda highlight current initiatives while proposing new ones: continued support for US$1.2 billion over five years already committed to develop hydrogen-powered fuel cell vehicles as a part of the Hydrogen Fuel Initiative; called for; proposed $84 million in the 2006 budget for ongoing research into advanced technologies that can produce ethanol from farms, forests, or even municipal waste dumps; a proposed tax credit of $4000 for every American who buys a hybrid car; and the proposal to expand and build new gasoline refineries in the United States, in particular on closed military bases.[486] All of these are components of the US Energy Bill that is due to be debated in the US Senate throughout June and July.

9. European Union

The European Union is currently in compliance with the Sea Island Summit energy commitment. EU policy commits the community to the development of biofuels and renewable energies in tandem with an emphasis on efficiencies and new technologies. These have been accompanied by the further development of relations with energy producing states and regions, and continuation of the EU's fusion program.[487] Adris Piebalgs, Energy Commissioner for the European Union, has identified several critical elements of energy policy for the EU. These include "creating a better linkage between energy…and research policies,...reducing energy demand," and "promoting renewable energy sources".[488]

Efficiency has become a central feature of EU energy policy during this G8 summit cycle. Commissioner Piebalgs has identified energy efficiency as his "key priority for 2005" pledging the EU to save the equivalent of 70 million tonnes of oil per annum by 2010, thus reducing external supply dependence by 4%.[489] Noting the recent surge in oil prices, Mr. Piebalgs has additionally called upon EU members to "strengthen…efforts on the demand side" to improve conservation efforts.[490] Mr. Piebalgs further stressed the EU's commitment to efficiency, conservation, and technological development when he explained "energy and research policies should be directly linked, with the aim to support technological development and more efficient energy use."[491]

[www.greencarcongress.com/2005/06/senate_votes_fo.html].
www.greencarcongress.com/2005/06/senate_votes_fo.html

[486] "Remarks by President Bush to the 16th Annual Energy Efficiency Forum," PRNewsWire (New York) 15 June 2005. Date of Access: 16 June 2005 [biz.yahoo.com/prnews/050615/dcw047.html?.v=12].

[487] While rejecting cooperation with Russia on the EU fusion project Mr. Pieblags confirmed the EU commitment to this endeavour. Adris Pieblags, speaking at a hearing on his candidacy for the position of Commissioner of Energy held by the Committee on Industry, Research, and Energy. Energy and Transport in Europe Digest. No. 116, November 19, 2004. <europa.eu.int/comm/energy_transport/mm_dg/newsletter/nl116-2004–11–18_en.html>.

[488] Ibid.

[489] "Towards Zero Emission Power Plants." Remarks by Commissioner Adris Piebalgs at the European CO2 Capture and Storage Conference. 13 April 2005. Date of access: 14 May 2005. <europa.eu.int/comm/energy/index_en.html>

[490] Commissioner Piebalgs' remarks at the IEA Ministerial Meeting. 2 May 2005. Date of access: 14 May 2005. <europa.eu.int/comm/energy/index_en.html>

[491] Piebalgs' testimony.

A firm commitment to alternative energy sources and new technologies can also found in EU energy policy. The European Commission has made it a priority to "increase energy diversity"[492] and to meet a target of producing 21% of Europe's electricity consumption from renewable energy sources.[493] Additionally, the commission has committed to the creation of a "Community action plan for energy from biomass by the end of 2005."[494] The commission also recently adopted a new research framework programme which includes the further development of clean coal technology, hydrogen fuel cells, and other renewables as R&D priorities for the EU.[495] These policies have been matched by a pledge to the continuing development of, hydro, biomass, geothermal, solar energy and other technologies.[496] This includes a particular commitment to the development of the wind energy sector. In 2004, Europe accounted for 72.4% of all new wind installations in the world.[497]

The EU has also worked to establish and improve relations with energy producing states in order to increase energy supplies in Europe.[498] In fact, the EU-Russian relationship on energy has developed to the point where 30% of the EU's oil needs and 50% of its gas needs are met with Russian supply.[499] Moreover, the Commissioner has acknowledged the continuing importance of Russia as a supplier of energy for the EU.[500] In addition, Commissioner Piebalgs has worked to improve and strengthen relations with states within the Persian Gulf region and with the Ukraine in an effort to secure and ensure energy supplies for the EU.[501]

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[492] "An Energy Outlook for Europe – From Today into the Next 30 Years." Speech by Loyola de Palacio, Vice-President of the European Commission, Commissioner for Transport and Energy. 15 June 2004. Energy and Transport in Europe Digest. No. 98. 18 June 2004. <europa.eu.int/comm/energy_transport/mm_dg/newsletter/nl99-2004-06–18_en.html>.
[493] Electricity From Renewable Energy Sources: Encouraging Green Electricity in Europe. <europa.eu.int/comm/energy/res/publications/doc/2004_brochure_green_en.pdf>. 8.
[494] Ibid. 14.
[495] "Towards Zero Emission Power Plants." Remarks by Commissioner Adris Piebalgs at the European CO2 Capture and Storage Conference. 13 April 2005. Date of access: 14 May 2005. <europa.eu.int/comm/energy/index_en.html>
[496] Ibid. 6-7.
[497] "Renewable Energy: European Union Continues to Work Towards Ambitious Targets." Remarks by Commissioner Adris Piebalgs, 9 March 2005. Date accessed: 14 May 2005. <europa.eu.int/comm/energy/index_en.html>
[498] "I am ready to establish even stronger relations with Russia, which has always been and important supplier to the EU." Piebalgs' testimony.
[499] Presentation of Christian Cleutinx, Director, European Commission Coordinator of the EU-Russian Energy Dialogue. November 2004. <europa.eu.int/comm/energy/russia/presentations/doc/2004_berlin_en.pdf>.
[500] "…supplies from Russia will be of vital importance for long term economic growth." Palacio speech.
[501] "Commissioner Piebalgs Launches Reinforced Energy Dialogue with Oil & Gas Producing Countries of the Gulf Cooperation Council Region." 2 April 2005. Date accessed: 14 May 2005. <europa.eu.int/comm/energy/index_en.html>; and,
"The Commission and Ukraine Strengthen Energy Cooperation in the Framework of the EU-Ukraine Neighbourhood Action Plan." 28 April 2005. Date accessed: 14 May 2005. <europa.eu.int/comm/energy/index_en.html>