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# Climate Change Accountability: The G8's Compliance Record from 1975 to 2011

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On June 28, 1979, at the conclusion of their first Tokyo summit, the leaders of the G7 major market democracies declared: “We need to expand alternative sources of energy, especially those which help to prevent further pollution, particularly increases of carbon dioxide and sulfur oxides in the atmosphere” (G7 1979).<sup>1</sup> They thus acknowledged the need to halt immediately, at 1979 levels, the concentration of carbon dioxide (CO<sub>2</sub>) in the world’s atmosphere (Kirton 2008-9). In the following five years, they and their partners in the Organisation for Economic Development and Co-operation (OECD) moved in this desired direction, as their CO<sub>2</sub> emissions into the atmosphere declined (Sustainable Energy Development Centre 2006, 48).

In acting so presciently, boldly and credibly in 1979, the G7 leaders were giving voice to the environmental values embedded in their institution at the start. At the conclusion of their first summit at Rambouillet, France, on November 15–17, 1975, the six participating leaders stated: “Our common interests require that we continue to cooperate in order to reduce our dependence on imported energy through conservation and the development of alternative sources” (G7 1975). In 1976, now with Canada a member of the club, the G7 noted the need for the “rational use” of energy resources (G7 1976). In 1977, with the European Community present, they affirmed the value of “more efficient energy use” (G7 1977). At the first summit Germany hosted, at Bonn in 1978, the leaders directly declared: “In energy development, the environment and human safety of the population must be safeguarded with greatest care” (G7 1978). And at their fifth summit in 1979 they took up the issue of carbon dioxide directly and declared that its concentration in the atmosphere must stabilize right away. The G7 summit subsequently moved from creating direction-setting principled consensus on climate change as in 1979 to generating specific, measurable, future-oriented collective decisional commitments on the subject starting in 1985.

Recently, the G8 has placed an increasing focus on climate change. More and more the countries have deliberated, set directions and made decisions on issues of climate change. They have largely delivered on those decisions, receiving an overall B grade, according to the G8 Research Group. And they have made an increasing effort to include all of the relevant countries in their climate discussions.

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<sup>1</sup> The G7 consists of France, the United States, the United Kingdom, Germany, Japan, Italy and Canada. It became the G8 after 1998, when Russia began to participate as a full member at the leaders level.

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At the same time, confidence in the United Nations and its Framework Convention on Climate Change (UNFCCC) has declined. Many predicted that the 15th Conference of the Parties (COP) in Copenhagen in December 2009 would fail to establish a post-Kyoto regime and it did. In Cancun, Mexico, COP16 produced documents which discussed issues ranging from existing mechanisms like Clean Development Mechanism to futuristic initiatives like Climate Technology Networks, but also did not establish a post-Kyoto regime. We now await the outcome of COP17 taking place from November 28 – December 8 in Durban, South Africa. If there is not progress toward a post-Kyoto regime, it falls, then, to the G8 — and its fellow institutions — the Major Economies Forum (MEF) and the G20 to either to finish the deal or to follow up where the UN leaves off (Harper 2009).

This research report therefore offers an overview of the G7 and now G8 summit's climate change governance. It covers the functions of domestic political management, deliberation, direction setting, decision making, delivery and development of global governance that the G8 performs. The report pays particular attention to G8 members' delivery of their collective decisions or commitments on climate change and their compliance with those pledges, for these actions constitute the ultimate test of the effectiveness of any international institution. The compliance results are drawn largely from the existing research and data base of the G8 Research Group at the Munk School of Global Affairs at Trinity College in the University of Toronto.

This report suggests that the G8 has been more effective than its UN counterpart as a centre of global climate governance, from the G8's pioneering start in 1979 through to the present day. Its performance is distinguished by the large number of commitments it has made, above all from the five summits from 2005 to 2009. Moreover, G8 members have complied with these commitments to a substantial degree, at an average level of a solid B of 78% (given its overall average score of +0.56 on a scientific scale ranging from +1 for full compliance through 0 for partial or "in progress" compliance, to -1 for no compliance or action that contradicts the commitment). Other G8 Research Group work has focused on why G8 members comply with the climate change commitments they have made. It will be left to others, however, to assess how well other international institutions, notably those in the UN galaxy, govern climate, make commitments and, above all, induce their member countries to comply with the commitments they make there.

For purposes of this analysis, the issue area of climate change is defined in a broad but bounded way. It includes climate change itself, global warming, the Kyoto Protocol, greenhouse gases, emissions, carbon, carbon capture and storage (CCS), the Carbon Sequestration Leadership Forum (CSLF), carbon dioxide, the Gleneagles Plan of Action (one of its three key areas is climate change) and the UNFCCC. It also includes the Global Environment Facility (GEF), which provides grants for climate change projects in developing countries. It also includes sustainable development, because the United Nations defines climate change as falling within its scope.

## **An Overview of G8 Performance in Climate Governance**

As Appendix A shows, since its 1975 start, the G7/8 summit has done little to help its leaders manage their domestic politics on climate change.

### **Deliberation**

But the G8 has deliberated directly on climate change at every stage. It did so first in 1979, when it started setting principled and normative directions for dealing with climate change, then again in 1985 and regularly since 1987, exploding between 2005 and 2009. It has made a major effort

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since 2002 and, above all, in 2005, 2007, 2008 and 2009. Its attention dropped a great deal in 2010 and 2011.

### **Decision Making Through Commitments**

In 1985, the G7/8 summit moved from deliberating about climate and setting principled and normative directions for dealing with it to making specific, measurable, future-oriented collective decisions, or commitments about how it should be addressed. Since its first climate commitment in 1985 through to 2011, it has made 282 such commitments, for an annual average of seven commitments over these 27 years (see Appendix A). Its decisional performance, in a ratchet-like rise, peaked first at the U.S.-hosted Houston Summit in 1990, then at the German-hosted Munich Summit in 1992 and then again at the Canadian-hosted Halifax Summit in 1995. It reached even higher levels at America's 1997 Denver Summit, Britain's 2005 Gleneagles Summit, Germany's 2007 Heiligendamm Summit and Japan's 2008 Hokkaido-Toyako Summit. The five summits, from 2005 to 2009, account for a full 71% of all the climate commitments the G7/8 has made. However, the 2010 and 2011 summits do not show the same momentum with the climate change commitments decreasing in number and no environment ministers meetings being held.

As Appendix B shows, these commitments have covered an ever broadening range of component issues. The cumulative total of issues covered reached 55 by 2011. The greatest broadening, or bursts of decisional innovation, came at France's Paris Summit in 1989, Germany's Munich Summit in 1992, Britain's Gleneagles Summit in 2005, Germany's Heiligendamm Summit in 2007 and Japan's Hokkaido-Toyako Summit in 2008. In contrast, other summits, such as the St. Petersburg Summit in 2006 and the L'Aquila Summit in 2009, were significant volume producers, generating numerous commitments, while not venturing into as many new areas of climate change. The 2010 and 2011 summits saw the introduction of yet another issue area, that of green growth, one and two commitments were made at each summit respectively.

Over these 27 years, the G8 has concentrated its climate decision making on the core issues of the UNFCCC (with 27 commitments) and greenhouse gas emissions (with 25 commitments). It has also given substantial attention to technology (16), forests (16), climate change in general (15), carbon sequestration and CCS (13), and the Gleneagles Dialogues (10).

### **Delivery through Compliance**

There has long been good reason to believe that G7/8 members comply with these climate change commitments and do so quickly, within a year of the summit that made them. The pioneering study of compliance with G7 decisions, conducted by George von Furstenberg and Joseph Daniels (1991), examined the compliance record of G7 members on their economic and energy commitments from 1975 to 1989. It concluded that in energy — the field closest to climate change during those years — there was relatively high compliance. Indeed, only in the field of trade did the G7 members keep their commitments to a greater degree.

Subsequently, Ella Kokotsis (1999) examined the compliance record of the United States and Canada — the G7's most and least powerful members respectively — from 1988 to 1995 on core sustainable development commitments in three core issue areas: climate change, biodiversity and debt relief for developing countries. She found that G7 members' compliance was generally positive, with a net score of +26% on the +100% to -100% scale. Both countries had positive compliance. Indeed, there was positive compliance in most issue areas, with the exception of biodiversity commitments by the United States. In comparison to Canada though, the United States was relatively "black," with a compliance rate of only +11%, while Canada was remarkably "green," with a compliance rate of +50%. Overall compliance was much higher on

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developing country debt at +73% than for climate change at +34% or biodiversity at -13%. Compliance from both countries increased from 1988 to 1995, reaching its peak around the time of the United Nations Conference on Environment and Development at Rio in June 1992.

Since 1996 the G8 Research Group has conducted an annual compliance assessment of the G8 summit's priority commitments. It has also completed special studies on climate change. It has been assisted by the G8 Research Group at Oxford University's special study of compliance with climate change commitments by the G8 and "Plus Five" partners in 2006. As with the Kokotsis study, these assessments assign each country a score of +1 if it complies completely or almost completely with the commitment, 0 if it has partial compliance or is a "work in progress," and -1 if it does nothing or does the opposite of what the commitment states.

The G8 has complied with its currently measurable 282 climate change commitments made from 1985 to 2011 at an overall level of +49%, or about half of the way up a scale ranging from -100% to +100%. The overall compliance scores in 2005 (+80%), 2007 (+72%) and 2008 (+56%) were above the G7/8's overall average from 1985 to 2010 (+49%). However, the 2006 score was well below at +33% as was the 2010 score at 0%. The variation suggests that the recent above-average compliance in 2005, 2007 and 2008 is not necessarily routine or guaranteed.

All members have compliance in the positive range. Compliance has been led by the above-average performance of the European Union at +80%, the United Kingdom at +70%, Japan at +63%, Germany at +58%, and Canada at +50%. They have been followed by the below-average performers of the France at +45%, United States at +38%, Russia at +23% and Italy at +22%.

### **Compliance Catalysts**

What drives or causes compliance? Relative capability and vulnerability, the dynamic of emulation among countries and the involvement of international organizations are all plausible candidates. It would also make sense that pressure or support from the public could drive compliance. The degree of control that leaders have over their legislatures and relevant institutions, such as central banks, might matter. And the way leaders themselves display their political will by crafting commitments that catalyze compliance beyond the summit could have an affect.

The available evidence on causes of G8 compliance shows that changes in relative capability and vulnerability have an indirect effect at best (Kirton 2006a). The emulation effect as a defection dynamic among members does seem to matter (Li 2001). Moreover, when G8 leaders have and use a powerful international organization, a G8-created body institution, and/or a coordinative centre within their own government dedicated to the issue area, compliance improves (Kokotsis 1999). Lastly, when the G8 crafts their commitments in ways that embed particular compliance catalysts, compliance rises (Kirton 2006a, 2006b; Kirton, Roudev and Sunderland 2007; Kirton et al. 2009).

In the realm of climate change, there are particular catalysts that cause compliance to rise. Higher compliance comes when the leaders give the commitment priority placement but do not invoke international law. Invoking the most relevant international organization helps Canada but harms the United States in their respective compliance results. Thus it appears that countries can do something to control their compliance fate.

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## **Conclusion**

These results show that the G8's record on climate change has been positive and promising. While these conclusions are based on a relatively small number of cases and should be treated tentatively, they do indicate that the G8 has become increasingly important in the realm of climate change governance. In the least, the results may offer some hope in the face of a waning and increasingly ineffective UNFCCC.

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## Appendix A: G8 Climate Performance, 1975–2011

Year	Bayne score	G8RG score	Domestic Political				Deliberation	Direction	Decision Commitments	Delivery Compliance	Development of global governance
			US	Jap	UK	Cda					
1975	A–	NA	0	0	0	0	0	0	0	–	0
1976	D	NA	0	0	0	0	0	0	0	–	0
1977	B–	NA	0	0	0	0	0	0	0	–	0
1978	A	NA	0	0	0	0	0	0	0	–	0
1979	B+	NA	0	0	0	0	1	0	0	–	0
1980	C+	NA	0	0	0	0	0	0	0	–	0
1981	C	NA	0	0	0	0	0	0	0	–	0
1982	C	NA	0	0	0	0	0	0	0	–	0
1983	B	NA	0	0	0	0	0	0	0	–	0
1984	C–	NA	0	0	0	0	0	0	0	–	0
1985	E	NA	0	0	0	0	1	0	1	+50(1)	0
1986	B+	NA	0	0	0	0	0	0	0	–	0
1987	D	NA	0	0	0	0	1	0	1	+29(1)	0
1988	C–	NA	0	0	0	0	1	0	0	–	0
1989	<b>B+</b>	NA	0	0	0	0	7	1	4	–44(4)	0
1990	D	NA	0	0	0	0	5	0	7	+43(1)	0
1991	B–	NA	0	0	0	0	5	1	5	+38(2)	0
1992	D	NA	0	0	0	0	4	0	7	+71(3)	0 (2)
1993	C+	NA	0	0	0	0	1	0	4	+57(2)	0
1994	C	NA	0	0	0	0	2	0	4	+71(2)	0 (1)
1995	B+	NA	0	0	0	0	3	0	7	+29(1)	0 (1)
1996	B	B+	0	0	0	0	3	0	3	+57(1)	0 (1)
1997	C–	A–	0	0	0	0	5	0	9	+29(2)	0 (1)
1998	B+	B+	0	0	0	0	4	0	8	+1.00(3)	0 (1)
1999	B+	C	0	0	0	0	1	0	4	–.22(1)	0 (1)
2000	B	B (B)	0	0	0	0	2	0	2	NA	0 (1)
2001	B	C	0	0	0	0	3	0	4	–.40(3)	0 (1)
2002	B+	B	0	0	0	0	1	1	1	+89(1)	0 (1)
2003	C+	B+	0	0	0	0	3	1	4	+88(2)	1(1)
2004	C+	B+	0	0	1	0	2	0	3	+89(2)	2
2005	A–	NA	0	0	1	0	68	11	28	+80(5)	0 (2) [2]
2006	NA	C+/B– (C)	0	0	0	0	26	2	19	+33(9)	0 [1]
2007	NA	B (B+)	0	3	0	1	47	12	44	+72(2)	1 (1)
2008	NA	C+ (F)	0	2	0	0	21	11	54	+56(3)	1 (1) [1]
2009	NA	NA	0	0	1	0	52	13	42	+61(6)	1 (1) [0]
2010	NA	NA	-	-	-	-	7	0	10	+00(2)	0
2011	NA	NA	-	-	-	-	12	2	7	-	0
Total	NA	NA	0	5	3	1	288	55	282	NA	6 (17) [4]
Average	C+, B–	B– (C)	0	0.14	0.09	0.03	7.8	1.5	7.0	+ .49(60)	0.17 (0.49) [0.11]

**Notes:**

Bayne Score: Score determined by Nicholas Bayne. Bold indicates year where environment was a significant contributor to the overall grade.

G8RG Score: Score determined by the G8 Research Group. Grades are given for the summit as a whole with the grade for climate change indicated in parentheses.

Domestic Political: number of mentions to the G8 and climate change in the national policy addresses for the United States, Japan, the United Kingdom and Canada. The unit of analysis is the sentence.

Deliberative: number of references to climate change in the G8 documents. The unit is the paragraph.

Directional: number of references to climate change in the chapeau or chair’s summary. The unit of analysis is the sentence.

Decisional: number of commitments where climate change is the key issue.

Delivery: overall compliance score for climate change commitments as assessed by the G8 Research Group. Figure in parentheses represents total number of commitments measured.

Development of global governance: number of climate change–related official bodies created. Figure in parentheses represents the number of environment ministers meetings. Figure in square brackets represents the number of G20 Gleneagles Dialogue meetings on the environment and energy. NA = not available.



## Appendix B: Climate Change Commitments, 1985–2011

### Climate Change Commitments Ranked by Issue

Issue	85	87	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	Total
UNFCCC	0	0	1	1	1	1	0	0	0	0	0	0	1	0	0	0	1	0	5	3	3	5	4	1	0	27
Greenhouse gases	0	0	1	1	1	1	0	0	0	0	1	2	0	0	0	0	0	0	3	2	5	3	1	2	2	25
Technology	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	1	7	2	2	0	0	16
Forests	0	0	1	3	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	5	0	0	15
Climate change general	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	7	2	0	0	1	15
Sequestration/CSLF/CCS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4	1	2	4	0	1	0	13
Gleneagles Dialogue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	1	0	5	0	0	10
Developing countries	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	4	1	1	0	9
Research/science	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	2	0	0	9
Sustainable development	0	0	0	0	0	0	0	0	3	0	1	0	1	0	1	1	0	0	0	0	2	0	1	0	0	9
Adaptation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6	1	0	9
Funding/financing	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	1	0	7
GEF	0	0	0	0	0	1	1	1	0	0	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	7
Long-term goals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3	0	0	7
COP	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	1	0	0	0	0	0	0	0	1	7
Kyoto Protocol	0	0	0	0	0	0	0	0	0	0	0	3	1	1	0	0	0	0	1	0	0	0	0	1	0	7
GEOSS/GCOS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	1	2	0	0	0	6
Energy efficiency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	3	0	0	6
Medium-term goals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	1	1	6
National action plans	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	5
Green Growth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	5
Rio conference	0	0	0	0	0	0	0	0	1	1	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5
Reports/planning	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	4
Energy alternatives	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	4
Market mechanisms	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	4
Trade Barriers/Systems	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2	2	0	0	4
CSD	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Sinks (general)	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3
Renewable energy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	3
Transport	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	3
Aviation/maritime	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	3
Mitigation plans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
Low carbon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
Post-2000 initiatives	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Monitoring	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2
Developing partnerships	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2
Post-2012 regime	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
Sectoral approaches	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
Environmental problems	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
WMO	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Polluter pays	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Global warming	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
DC limits	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
DC technology	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
IEA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Awareness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Dialogue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Energy intensity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1
Hydrocarbons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Major economies join	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Sharing practices	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Emission profiles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Nairobi Work Programme	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Black carbon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Natural disasters	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
TOTAL	1	1	4	7	5	7	4	4	7	3	9	8	4	2	4	1	4	3	28	19	44	54	42	10	7	(280)

**Notes:**

There were no climate change commitments in the years that do not appear.

Bold reflects top three scores in respective areas. N/A = Data not available.

CCS = carbon capture and sequestration; COP = Conference of the Parties to the United Nations Framework Convention on Climate Change; CSD = United Nations Commission on Sustainable Development; CSLF = Carbon Sequestration Leadership Forum; DC = developing country; GCOS = Global Climate Observing System; GEOSS = Global Earth Observation System of Systems; GHG = greenhouse gases, including limits, reductions, stabilization, minimizing and mitigation; IEA = International Energy Agency; LDC = least developed countries; UNFCCC = United Nations Framework Convention on Climate Change; WMO = World Meteorological Organization.

## Appendix C: Compliance with Climate Change Commitments

G8 Climate Change Compliance Scores 1985-2010

Commitment	Issue	Average	United States	Japan	United Kingdom	Germany	France	Italy	Canada	Russia	EU
<b>1985 (1/1)</b>		<b>0.50</b>	<b>1.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.00</b>	<b>1.00</b>	<b>0.00</b>	<b>0.00</b>		<b>1.00</b>
1985-xx	climate change	0.50	1	0	0	1	1	0	0		1
<b>1987 (1/1)</b>		<b>0.29</b>	<b>0.00</b>	<b>0.00</b>	<b>1.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.00</b>		
1987-32	Environmental problems	0.29	0	0	1	0	0	0	1		
<b>1989 (4/4)</b>		<b>-0.10</b>	<b>-1.00</b>	<b>0.75</b>	<b>0.50</b>	<b>0.00</b>	<b>0.50</b>	<b>-0.25</b>	<b>0.00</b>		
1989-1	greenhouse gases	0.43	-1	1	1	1	0	0	1		
1989-2	WMO	-0.43	-1	1	1	-1	-1	-1	-1		
1989-3	Forests	-0.29	-1	1	-1	0	-1	1	-1		
1984-4	Convention	0.00	-1	0	1	0	0	-1	1		
<b>1990 (1/7)</b>		<b>0.43</b>	<b>-1.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>		
1990-1	greenhouse gases	0.43	-1	0	0	1	1	1	1		
<b>1991 (2/5)</b>		<b>0.38</b>	<b>-1.00</b>	<b>0.00</b>	<b>0.50</b>	<b>1.00</b>	<b>0.50</b>	<b>0.50</b>	<b>1.00</b>		
1991-1	UNFCCC	0.14	-1	0	0	1	0	0	1		
1991-4	greenhouse gases	0.67	-1		1	1	1	1	1		
<b>1992 (3/7)</b>		<b>0.71</b>	<b>0.33</b>	<b>1.00</b>	<b>0.67</b>	<b>1.00</b>	<b>0.67</b>	<b>0.33</b>	<b>1.00</b>		
1992-5	UNFCCC	0.71	1	1	1	1	0	0	1		
1992-8	Global Environment Facility	0.71	-1	1	1	1	1	1	1		
1992-11	Science	0.71	1	1	0	1	1	0	1		
<b>1993 (2/4)</b>		<b>0.571428571</b>	<b>1.00</b>	<b>1.00</b>	<b>0.50</b>	<b>0.00</b>	<b>0.00</b>	<b>0.50</b>	<b>1.00</b>		
1993-1	National action plans	0.14	1	1	0	-1	-1	0	1		
1993-3	Global Environment Facility	1.00	1	1	1	1	1	1	1		
<b>1994 (2/4)</b>		<b>0.71</b>	<b>1.00</b>	<b>0.50</b>	<b>1.00</b>	<b>1.00</b>	<b>0.50</b>	<b>0.00</b>	<b>1.00</b>		
1994-1	National action plans	0.57	1	0	1	1	0	0	1		
1994-3	Global Environment Facility	0.86	1	1	1	1	1	0	1		
<b>1995 (1/7)</b>		<b>0.29</b>	<b>-0.50</b>	<b>0.50</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>-0.50</b>	<b>-0.50</b>		
1995-23	COP	0.29	1	0	1	-1	0	0	1		
<b>1996 (1/3)</b>		<b>0.57</b>	<b>-0.50</b>	<b>0.50</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>-0.50</b>	<b>-0.50</b>		
1996-87	COP	0.57	1	1	1	1	0	0	0		
<b>1997 (2/9)</b>		<b>0.29</b>	<b>-0.50</b>	<b>0.50</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>-0.50</b>	<b>-0.50</b>	<b>0.00</b>	<b>1.00</b>
1997-8	COP	0.50	0	1	1	1	1	-1	0	1	
1997-9	greenhouse gases	0.11	-1	0	1	1	1	0	-1	-1	1
<b>1998 (3/8)</b>		<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	
1998-32	Kyoto	1.00	1							1	
1998-34	Kyoto	1.00	1	1	1	1	1	1	1	1	
1998-35	Trading System	1.00	1	1	1	1	1	1	1	1	
<b>1999 (1/4)</b>		<b>-0.22</b>	<b>1.00</b>	<b>1.00</b>	<b>-1.00</b>	<b>0.00</b>	<b>0.00</b>	<b>-1.00</b>	<b>0.00</b>	<b>-1.00</b>	<b>-1.00</b>
1999-32	Kyoto Protocol	-0.22	1	1	-1	0	0	-1	0	-1	-1
<b>2001 (3/4)</b>		<b>-0.04</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>-0.33</b>	

2001-44	COP	0.00	0	0	0	0	0	0	0	0	
2001-xx	Global Environment Facility	-0.13	0	0	0	0	0	0	0	-1	
2001-xx	Sustainable development	0.00	0	0	0	0	0	0	0	0	
<b>2002 (1/1)</b>		<b>0.89</b>	<b>0.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>
2002-8	Sustainable development	0.89	0	1	1	1	1	1	1	1	1
<b>2003 (2/4)</b>		<b>0.88</b>	<b>1.00</b>	<b>1.00</b>	<b>0.50</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>0.50</b>	<b>1.00</b>	<b>1.00</b>
2003-75	Renewable energy	0.75	1	1	0	1	1	1	0	1	
2003-92	UNFCCC	1.00	1	1	1	1	1	1	1	1	1
<b>2004 (2/3)</b>		<b>0.89</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>0.50</b>	<b>1.00</b>	<b>0.50</b>	<b>1.00</b>
2004(s)-3	GEOSS	1.00	1	1	1	1	1	1	1	1	1
2004-S2	Renewable energy	0.78	1	1	1	1	1	0	1	0	1
<b>2005 (5/28)</b>		<b>0.80</b>	<b>0.80</b>	<b>0.60</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>0.40</b>	<b>0.80</b>	<b>0.60</b>	<b>1.00</b>
2005-xx	Technology	1.00	1	1	1	1	1	1	1	1	1
2005-xx	Gleneagles Dialogue	0.89	1	1	1	1	1	0	1	1	1
2005-1	UNFCCC	0.44	0	0	1	1	1	-1	0	1	1
2005-9	Gleneagles Dialogue	0.67	1	0	1	1	1	1	1	-1	1
2005-15	Aviation	1.00	1	1	1	1	1	1	1	1	1
<b>2006 (9/19)</b>		<b>0.33</b>	<b>0.28</b>	<b>0.56</b>	<b>0.61</b>	<b>0.39</b>	<b>0.17</b>	<b>0.11</b>	<b>0.06</b>	<b>0.06</b>	<b>0.78</b>
2006-62	Sustainable energy use	0.22	0	0	1	0	0	0	0	0	1
2006-99	Energy intensity	0.33	0	0	1	0	0	0	0	1	1
2006-110	Hydrocarbons	-0.11	-1	1	-1	0	1	-1	1	0	-1
2006-116 <sup>b</sup>	Transport	0.33	0.5	0	0.5	0.5	0.5	0	0.5	-0.5	1
2006-123	Energy Alternatives	0.33	1	1	0	1	-1	0	0	0	1
2006-138	Technology	0.22	1	1	1	0	0	0	-1	-1	1
2006-156	Renewable Energy	0.89	1	1	1	1	0	1	1	1	1
2006-162	Climate change	0.78	1	1	1	1	1	1	0	0	1
2006-165	UNFCCC	0.00	-1	0	1	0	0	0	-1	0	1
<b>2007 (2/44)</b>		<b>0.72</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>0.50</b>	<b>0.50</b>	<b>0.50</b>	<b>1.00</b>	<b>0.50</b>	<b>0.50</b>
2007-35	UNFCCC	1.00	1	1	1	1	1	1	1	1	1
2007-36	Technology	0.44	1	1	1	0	0	0	1	0	0
<b>2008 (4/54)</b>		<b>0.64</b>	<b>0.50</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>0.50</b>	<b>0.00</b>	<b>1.00</b>	<b>0.00</b>	<b>0.75</b>
2008-27	Biofuels	0.89	1	1	1	1	1	1	1	0	1
2008-55	Medium-term goals	0.78	-1	1	1	1	1	1	1	1	1
2008-72	CCS	0.33	1	1	1	1	-1	-1	1	-1	1
2008-265	Developing Countries	0.56	1	1	1	1	1	-1	1	0	0
<b>2009 (6/42 )</b>		<b>0.61</b>	<b>0.83</b>	<b>1.00</b>	<b>1.00</b>	<b>0.33</b>	<b>0.50</b>	<b>0.50</b>	<b>0.50</b>	<b>-0.17</b>	<b>1.00</b>
2009-64	Technology R&D	1.00	1	1	1	1	1	1	1	1	1
2009-66	Financing	0.89	1	1	1	1	1	1	1	0	1
2009-73	Forest Degradation	0.67	1	1	1	1	1	0	0	0	1
2009-98	CCS	0.00	0	1	1	-1	-1	-1	1	-1	1

2009-**	Energy subsidy	0.22	1	1	1	-1	0	1	-1	-1	1
2009-**	adaptation	0.89	1	1	1	1	1	1	1	0	1
<b>2010 (2/10)</b>		<b>0.00</b>	<b>0.19</b>	<b>0.19</b>	<b>0.35</b>	<b>0.29</b>	<b>0.22</b>	<b>-0.39</b>	<b>0.25</b>	<b>0.11</b>	<b>0.40</b>
2010-26	emissions reduction	0.22	-1	-1	1	1	1	0	-1	1	1
2010-27	COP	-0.22	0	-1	0	0	0	-1	0	0	0
<b>Average N=60</b>		<b>0.49</b>	<b>0.38</b>	<b>0.63</b>	<b>0.70</b>	<b>0.58</b>	<b>0.45</b>	<b>0.22</b>	<b>0.50</b>	<b>0.23</b>	<b>0.80</b>
Commitment	Issue	Ave	U.S.	JAP	UK	GER	FRA	ITA	CDA	RUS	EU

Notes:

N = 60; total number of commitments = 263; xx = commitment identifier not available. N/A = not available.

CSD = United Nations Commission on Sustainable Development; GEOSS: Global Earth Observation System of Systems; UNFCCC = United Nations Framework Convention on Climate Change; WMO = World Meteorological Organization.

a. 1998-xx = This commitment deals with signing the Kyoto Protocol, which only applies to the U.S. and Russia in 1998, as all other G8 countries had already signed.

b. 2006-116 was measured by both the G8RG-Toronto and G8RG-Oxford. The score represented here is an amalgamation of the two slightly different measures.

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## Appendix D: Climate Change Commitments Text

### 1985 (1)

1985-xx. New approaches and strengthened international cooperation are essential to anticipate and prevent damage to the environment, which knows no national frontiers. We shall also address other concerns such as **climatic change**, the protection of the ozone layer and the management of toxic chemicals and hazardous wastes. The protection of soils, fresh water and the sea, in particular of regional seas, must be strengthened.

### 1987 (1)

1987-32. We underline our own responsibility to encourage efforts to tackle effectively environmental problems of worldwide impact such as stratospheric ozone depletion, climate change, acid rains, endangered species, hazardous substances, air and water pollution, and destruction of tropical forests.

### 1989 (4)

1989-1. We strongly advocate common efforts to limit emissions of carbon dioxide and other greenhouse gases, which threaten to induce climate change, endangering the environment and ultimately the economy

1989-2. We need to strengthen the world-wide network of observatories for greenhouse gases and support the World Meteorological Organization initiative to establish a global climatological reference network to detect climate changes.

1989-3. We call for the adoption of sustainable forest management practices, with a view to preserving the scale of world forests.

1989-4. We believe that the conclusion of a framework or umbrella convention on climate change to set out general principles or guidelines is urgently required to mobilize and rationalise the efforts made by the international community. Specific protocols containing concrete commitments could be fitted into the framework as scientific evidence requires and permits.

### 1990 (7)

1990-1. We are committed to undertake common efforts to limit greenhouse gases, such as carbon dioxide.

1990-2. We reiterate our support for the negotiation of a framework convention on climate change, under the auspices of the UNEP and WMO. The convention should be completed by 1992.

1990-3. Work on implementing protocols should be undertaken as expeditiously as possible and should consider all sources and sinks.

1990-4. We are determined to take action to increase forests... and we are ready for a new dialogue with developing countries on ways and means to support their efforts to provide sustainable forest management.

1990-5. We are ready to cooperate with the Government of Brazil on a comprehensive pilot programme to counteract the threat to tropical rain forests in that country.

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1990-6. The Tropical Forestry Action Plan must be reformed and strengthened, placing more emphasis on forest conservation.

1990-7. We support accelerated scientific and economic research and analysis on the dynamics and potential impact of climate change, and on potential responses of developed and developing countries.

**1991 (5)**

1991-1. Achieving, by the time of UNCED, a framework convention on climate change

1991-2. Allocation of financial assistance to developing countries for environmental projects geared toward emissions reductions and the protection of CO<sub>2</sub> sinks; and contribute to the core fund of the GEF

1991-3. support scientific research

1991-4. establish concrete strategies to limit net emission of greenhouse gases.

1991-5. We will financially support the implementation of the preliminary state of the [Brazilian] pilot programme.

**1992 (7)**

1992-1. Ratify FCCC by 1993

1992-2. replenish the GEF

1992-3. support the endorsement of the CSD

1992-4. proceed with forest principle initiatives

1992-5. implement actions geared at emissions reductions

1992-6. continued scientific efforts in the area of climate change

1992-7. develop a national action plan by the end of 1993

**1993 (4)**

1993-1. publish a national action plan by the end of 1993

1993-2. Continue support for the Commission on Sustainable Development (CSD)

1993-3. Bolster the continuation of the GEF through financial replenishment

1993-4. Produce initiatives on sound forest management

**1994 (4)**

1994-1. implementing national action plans

1994-2. developing climate change initiatives for the post-2000 period

1994-3. replenishing the Global Environmental Facility

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1994-4. producing reports on achievements made in time for the Halifax summit

**1995 (7)**

1995-10: make sustainable development a central goal of [the relevant organizations and multilateral institutions'] policies and programs, including by intensifying and deepening the integration of environmental considerations into all aspects of [the relevant organizations multilateral institutions'] programs

1995-11: encourage countries to follow sound economic, environmental and social policies and to create the appropriate legal and structural framework for sustainable development.

1995-14. continue to provide resources for the infrastructure needed for sustainable development, where these are not available from the private sector.

1995-21. In their policies, operations and procurement, G-7 governments must show leadership in improving the environment. This will require the appropriate mix of economic instruments, innovative accountability mechanisms, environmental impact assessment and voluntary measures. Efforts must focus on pollution prevention, the "polluter pays" principle, internalization of environmental costs, and the integration of environmental considerations into policy and decision making in all sectors.

1995-22. establishing a review process for strengthening Rio commitments

1995-23. setting more ambitious timetables and objectives to follow-up on the Berlin Conference of the Parties

1995-25. contributing to the completion of the CSD intergovernmental panel on forests

**1996 (3)**

1996-85. In view of the threats such as global warming, desertification, deforestation, depleting resources and threatened species, and unsustainable urban development, we place top priority on integrating environmental protection more completely into all of our policies.

1996-86. 1997 will be a pivotal year for the environment. We renew our commitment to all agreements reached at Rio, and pledge to work for a successful outcome of the 1997 special session of the United Nations General Assembly which would lead to their better implementation.

1996-87. *We commit ourselves to strong action and anticipate in 1997 a successful outcome of the Conference of the Parties to the Climate Change Convention.*

**1997 (9)**

1997-5. This is a pivotal year for efforts to promote sustainable development and protect the environment. We are determined to address the environmental challenges that will affect the quality of life of future generations and to enhance public awareness, especially among our youth, of the importance of advancing sustainable development goals.

1997-6. We discussed the progress that has been made since the 1992 Rio Earth Summit in defining and promoting sustainable development, and we commit ourselves to taking action in areas critical to advancing this agenda. Sustainable development demands the full integration of

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environment, economic and social policies; should be based upon democratic governance and respect for human rights; and should have poverty eradication as one of its ultimate objectives.

1997-7. In this connection, we reaffirm the vital contribution of civil society. We urge the United Nations General Assembly, at its Special Session to be held next week, to reaffirm and give impetus to the Rio commitments, to take stock of implementation since Rio, and, most importantly, to develop a manageable list of priority issues to address in future work on sustainable development.

1997-8. At the Third Conference of the Parties to the UN Framework Convention on Climate Change in Kyoto, we must forge a strong agreement that is consistent with the Berlin Mandate and contains quantified and legally-binding emission targets that will result in reductions of greenhouse gas emissions by 2010.

1997-9. We intend to commit to meaningful, realistic and equitable targets that will result in reductions of greenhouse gas emissions by 2010.

1997-10. Developing countries must also take measurable steps, recognizing that their obligations will increase as their economies grow. We agree to work in partnership with them to that effect by implementing technological development and diffusion and supporting environmental education and capacity building.[referring to greenhouse gas emissions]

1997-11. We agree to work together to enhance international efforts to further develop global systems for monitoring climate change and other environmental trends

1997-22. We reaffirm the importance of the Global Environmental Facility as the leading multilateral funding mechanism for the global environment. We will work to strengthen its finances and enhance its effectiveness.

1997-23. In this regard, we will each do our part to contribute to a successful replenishment of the Facility. [referring to the GEF]

### **1998 (8)**

1998-31. The greatest environmental threat to our future prosperity remains climate change. We confirm our determination to address it, and endorse the results of our Environment Ministers' meeting at Leeds Castle.

1998-32. The adoption at Kyoto of a Protocol with legally binding targets was a historic turning point in our efforts to reduce greenhouse gas emissions. We welcome the recent signature of the Protocol by some of us and confirm the intention of the rest of us to sign it within the next year, and resolve to make an urgent start on the further work that is necessary to ratify and make Kyoto a reality. To this end:

1998-33. we will each undertake domestically the steps necessary to reduce significantly greenhouse gas emissions;

1998-34. [we] resolve to make an urgent start on the further work that is necessary to ratify and make Kyoto a reality." To this end: "...we will work further on flexible mechanisms such as international market-based emissions trading, joint implementation and the clean development mechanism, and on sinks.



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1998-35. We aim to draw up rules and principles that will ensure an enforceable, accountable, verifiable open and transparent trading system and an effective compliance regime.

1998-36. we will work together and with others to prepare for the Buenos Aires meeting of COP4 this autumn.

1998-37. We will also look at ways of working with all countries to increase global participation in establishing targets to limit or reduce greenhouse gas emissions.

1998-38. We will aim to reach agreement as soon as possible on how the clean development mechanism can work, including how it might best draw on the experience and expertise of existing institutions, including the Global Environment Facility.

**1999 (4)**

1999-29. To underscore our commitment to sustainable development, we will step up our efforts to build a coherent global and environmentally responsive framework of multilateral agreements and institutions.

1999-32. We will work towards timely progress in implementing the Buenos Aires Plan of Action with a view to early entry into force of the Kyoto Protocol.

1999-33. We underline the importance of taking action to reduce greenhouse gas emissions through rational and efficient use of energy and through other cost-effective means. To this end, we commit ourselves to develop and implement domestic measures including under the UN Framework Convention on Climate Change.

1999-34. We will also promote increasing global participation of developing countries in limiting greenhouse gas emissions.

**2000 (2)**

2000-85. “We will endeavor will all our partners to prepare a future-oriented agenda for Rio+10 in 2002”

2000-86. “We are determined to achieve a successful outcome at the Sixth Conference of the Parties to the FCCC (COP6), in order to achieve the goals of the Kyoto Protocol through undertaking strong domestic actions and supplemental flexibility mechanisms.”

**2001 (4)**

2001-42. In this context, we agree on the importance of intensifying co-operation on climate related science and research.

2001-44. Attempt to reduce greenhouse gas emissions through the Sixth Conference of the Parties in Bonn (COP6) and other relevant fora.

2001-xx: Global Environment Facility (GEF)

2001-xx: Sustainable Development

**2002 (1)**

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2002-8. We agreed on the importance of reaffirming the Doha Agenda and the Monterrey Consensus and to work at the upcoming Johannesburg Summit to produce meaningful partnerships for sustainable development and measurable results.

**2003 (4)**

2003-71. We will promote rapid innovation and market introduction of clean technologies, in both developed and developing countries, including at the Milan Conference of the Parties of the United Nations Framework Convention on Climate Change and beyond, at the International Energy Agency (IEA) and other international fora such as the UN Economic Commission for Europe, the Expert Group on Technology Transfer, etc., finding appropriate methodologies to involve the private sector.

2003-75: We commit to participating in the International Conference on Renewable Energies, spring 2004 in Bonn.

2003-81. Expand significantly the availability if and access to cleaner, more efficient fossil fuel technologies and carbon sequestration systems and pursue joint research and development and expanded international co-operation, including demonstration projects.

2003-92. We will discuss various aspects of the global climate change problem at the World Conference on Climate Control (Moscow, September 2003).

**2004 (3)**

2004-1. Last year at Evian we agreed "to support the development of cleaner, sustainable and more efficient technologies." 1. We reaffirm our conviction that "cooperative scientific research on transformation technologies offers potential to improve public health by cutting pollution and reduce greenhouse gas emission to address the challenge of global climate change."

2004(S)-2: We recognized the need for balanced energy policies, which increase energy supplies and encourage more efficient energy use and conservation, including through new technologies.

2004(S)-3. Held First and Second Earth Observation Summits (EOS) and adopted a Framework document on a Global Earth Observation System of Systems (GEOSS). Planning to adopt a final 10-year strategic implementation plan on GEOSS at Third EOS in 2005 and working to identify the international mechanism to provide coordination and oversight for GEOSS.

**2005 (28)**

2005-xx. We resolved to take urgent action to meet the challenges we face. The Gleneagles Plan of Action which we have agreed demonstrates our commitment. We will take measures to develop markets for clean energy technologies, to increase their availability in developing countries, and to help vulnerable communities adapt to the impact of climate change.

2005-xx. We will advance the global effort to tackle climate change at the UN Climate Change Conference in Montreal later this year. Those of us who have ratified the Kyoto Protocol remain committed to it, and will continue to work to make it a success.

2005-1. We reaffirm our commitment to the UNFCCC and to its ultimate objective to stabilise greenhouse gas concentrations in the atmosphere at a level that prevents dangerous anthropogenic interference with the climate system.

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2005-2. promote innovation, energy efficiency, conservation, improve policy, regulatory and financing frameworks; and accelerate deployment of cleaner technologies, particularly lower emitting technologies

2005-4. raise awareness of climate change and our other multiple challenges, and the means of dealing with them; and make available the information which business and consumers need to make better use of energy and reduce emissions.

2005-5. We will work with developing countries on building capacity to help them improve their resilience and integrate adaptation goals into sustainable development strategies. We therefore agree to take forward a Dialogue on Climate Change, Clean Energy and Sustainable Development, and invite other interested countries with significant energy needs to join us.

2005-7. monitor implementation of the commitments made in the Gleneagles Plan of Action and explore how to build on this progress; and

2005-9. We will ask our Governments to take the Dialogue forward. [Gleneagles]

2005-11. Those of us who have ratified the Kyoto Protocol welcome its entry into force and will work to make it a success.

2005-12. We will work together to advance the goals and objectives we have agreed today to inform the work of the UN Climate Change Conference in Montreal 2005.

2005-13. We are committed to move forward in that forum the global discussion on long-term co-operative action to address climate change.

2005-15. work with the IPCC to provide, as part of its forthcoming Fourth Assessment Report, an up-to-date assessment of the latest evidence on aviation's impacts on the climate;

2005-16. support climate science research, aimed at improving our understanding of specific issues such as contrails and cirrus cloud effects, to inform technological and operational responses;

2005-17. encourage co-ordination among our existing national research programmes on longterm technology developments with the potential to significantly reduce emissions.

2005-20. develop partnerships, including sectoral and cross-border partnerships, with industry to reduce the greenhouse gas emissions intensity of the major industrial sectors of our economies; and

2005-21. continue to support the work of the UNFCCC clearing house on technology transfer *TT:Clear* in disseminating information on available technologies, and cooperate further on sharing information on best practices and national policies to encourage the deployment of energy efficiency technologies.

2005-23. inviting the IEA to carry out a global study of recently constructed plants, building on the work of its Clean Coal Centre, to assess which are the most cost effective and have the highest efficiencies and lowest emissions, and to disseminate this information widely; and

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2005-25. endorsing the objectives and activities of the Carbon Sequestration Leadership Forum (CSLF), and encouraging the Forum to work with broader civil society and to address the barriers to the public acceptability of CCS technology;

2005-26. inviting the IEA to work with the CSLF to hold a workshop on short-term opportunities for CCS in the fossil fuel sector, including from Enhanced Oil Recovery and CO<sub>2</sub> removal from natural gas production;

2005-27. inviting the IEA to work with the CSLF to study definitions, costs, and scope for 'capture ready' plant and consider economic incentives;

2005-28. collaborating with key developing countries to research options for geological CO<sub>2</sub> storage;

2005-29. working with industry and with national and international research programmes and partnerships to explore the potential of CCS technologies, including with developing countries.

2005-46. support a market-led approach to encouraging energy efficiency and accelerating investment and the deployment of cleaner technologies which will help transition to a low emission future;

2005-51. use standards, or use pricing and regulatory signals to provide confidence in the near and long-term value of investments, so as to reduce emissions of greenhouse gases and/or pollutants.

2005-54. market-based instruments including fiscal or other incentives for the development and deployment of technologies, tradable certificates and trading of credits for reductions of emissions of greenhouse gases or pollutants;

2005-57. We will build on the work in other fora, including the UNFCCC Experts Group on Technology Transfer, to support necessary capacity building, enabling environments and information dissemination.

2005-60. support efforts to help developing countries and regions obtain full benefit from GEOSS, including from the Global Climate Observing System (GCOS) such as placement of observational systems to fill data gaps, developing of in country and regional capacity for analysing and interpreting observational data, and development of decision-support systems and tools relevant to local needs;

2005-61. in particular, work to strengthen the existing climate institutions in Africa, through GCOS, with a view to developing fully operational regional climate centres in Africa.

## **2006 (19)**

2006-54. We also reaffirm our commitment to the United Nations Framework Convention on Climate Change (UNFCCC) and to meet our shared multiple objectives of reducing greenhouse gas emissions, improving the global environment, enhancing energy security, and cutting air pollution in conjunction with our vigorous efforts to reduce energy poverty.

2006-62. [Recognizing the shared interest of energy producing and consuming countries in promoting global energy security, we, the Leaders of the G8, commit to: ...] environmentally

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sound development and use of energy, and deployment and transfer of clean energy technologies which help to tackle climate change...

2006-75. addressing climate change and sustainable development.

2006-95. We will move forward with timely implementation of the Gleneagles Plan of Action.

2006-96. We have instructed our relevant ministers to continue the dialogue on climate change, clean energy and sustainable development and report its outcomes to the G8 summit in 2008.

2006-99. consider national goals for reducing energy intensity of economic development to be reported by the end of the year;

2006-110. raising the environmental and efficiency levels for processing hydrocarbons;

2006-112. improving energy infrastructure, including minimizing oil and oil products losses in transportation and gas emissions from gas systems;

2006-116. [For making transportation more energy efficient and environmentally advanced we shall...] develop programs in our respective countries, consistent with national circumstances, to provide incentives for consumers to adopt efficient vehicles, including clean diesels and hybrids; and introduce on a large scale efficient public hybrid and/or clean diesel transportation systems, where appropriate...

2006-122. continue to consider the impact of the air transport sector on energy consumption and greenhouse gas emissions noting international cooperation on these issues.

2006-123. We will work to develop low-carbon and alternative energy, to make wider use of renewables and to develop and introduce innovative technologies throughout the entire energy sector.

2006-124. We shall further encourage the activities of the Carbon Sequestration Leadership Forum (CSLF) aimed at preparing and implementing demonstration projects on CO<sub>2</sub> capture and storage and on the development of zero emission power plants

2006-138. [*Despite the increased role of alternative sources in the energy mix, hydrocarbons are expected to continue to play a leading role in total energy consumption well into this century*]...Therefore we will work with the private sector to accelerate utilization of innovative technologies that advance more efficient hydrocarbon production and reduce the environmental impact of its production and use.

2006-156. “We will facilitate development of local energy resources, including those based on core generation technologies and on renewable energy, such as hydropower, wind power, geothermal power, biomass, and the effective use of solar energy, to contribute to poverty reduction and long-term energy sustainability in developing countries.”

2006-162. We reaffirm our intention to deliver on commitments made in Gleneagles in order to meet our shared ... objectives of reducing greenhouse gas emissions.

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2006-163. We also affirm our commitment to the UNFCCC's ultimate objective of stabilizing greenhouse gas concentrations in the atmosphere at a level that prevents dangerous anthropogenic interference with the climate system.

2006-164. We will continue to work to reduce greenhouse gas and deal effectively with the challenge of climate change.

2006-165. With respect to climate change, we reaffirm our shared commitment under the UNFCCC and its related mechanisms.

2006-166. We look forward to the next Ministerial meeting in Mexico in October 2006, where we will continue to identify opportunities for greater collaboration to tackle climate change, while pursuing energy security and sustainable development through deployment of cleaner, more efficient and low-carbon energy technologies, finance and market mechanisms, including, as appropriate, Clean Development Mechanism, Joint Implementation, emissions trade, and adaptation.

**2007 (44)**

2007-24. We firmly agree that resolute and concerted international action is urgently needed in order to reduce global greenhouse gas emissions and increase energy security.

2007-25. We are committed to take strong leadership in combating climate change.

2007-26. We confirm our determination to work among ourselves and with the global community on global solutions that address climate change while supporting growth and economic development.

2007-27. We commit ourselves to implement approaches which optimally combine effective climate protection with energy security

2007-28. To this end, we are committed to the further development of the international regime to combat climate change, especially in the run-up to the UN Climate Change Conference in Indonesia at the end of this year.

2007-29. To maintain the momentum of those achievements [with the UNCCC] we herewith strongly reaffirm our commitment to Global Energy Security Principles, including our commitment to enhance dialogue on relevant shareholders' perspectives on growing interdependence, security of supply and demand issues, facilitate diversification of different types of contracts, including market-based long-term and spot contracts, promote investment in upstream and downstream assets internationally, support the principles of the Energy Charter and the efforts of the participating countries to improve international energy co-operation.

2007-30. [To maintain the momentum of that groundbreaking achievement, we] will prepare national reports with the assistance of the IEA, evaluating G8 member states' efforts to adhere to those principles, for delivery at the 2008 G8 summit

2007-31. We are therefore committed to taking strong and early action to tackle climate change in order to stabilize greenhouse gas concentrations at a level that would prevent dangerous anthropogenic interference with the climate system

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2007-32. In setting a global goal for emissions reductions in the process we have agreed today involving all major emitters, we will consider seriously the decisions made by the European Union, Canada and Japan which include at least a halving of global emissions by 2050

2007-33. We commit to achieving these goals and invite the major emerging economies to join us in this endeavor.

2007-34. We reaffirm, as G8 leaders, our responsibility to act.

2007-35. [We acknowledge that the UN climate process is the appropriate forum for negotiating future global action on climate change.] We are committed to moving forward in that forum and call on all parties to actively and constructively participate in the UN Climate Change Conference in Indonesia in December 2007 with a view to achieving a comprehensive post 2012-agreement (post Kyoto-agreement) that should include all major emitters.

2007-36. 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.

2007-37. We have to develop and create supportive market conditions for accelerating commercialization of new less carbon intensive, clean-energy and climate-friendly technologies.

2007-38. [Therefore, we will] stimulate global development, commercialization, deployment and access to technologies (related to the previous climate friendly technologies)

2007-39. [Therefore, we will] promote major emerging and developing economies' participation in international technology partnerships and collaborations (related to the previous climate friendly technologies)

2007-40. [Therefore, we will] scale up national, regional and international research and innovation activities and (related to the previous climate friendly technologies)

2007-41. [Therefore, we will] undertake strategic planning and develop technology roadmaps to strengthen the role of advanced technology in addressing climate change

2007-44. We are determined to assist in reducing emissions from deforestation, especially in developing countries.

2007-45. [To this end, we will] continue to support existing processes to combat illegal logging.

2007-46. [To this end, we will] remain engaged in supporting developing countries to achieve their self-commitments for halting forest loss and to implement sustainable forest management, as stated in various regional initiatives, i.e., the Congo Basin and the Asia Forest Partnerships.

2007-47. At the St. Petersburg Summit, we agreed to enhance international co-operation in the area of sustainable forest management.

2007-48. Building on these initiatives, we are determined and urge the international community to strengthen co-operation and the sharing of best practices at all levels.

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2007-49. We are committed to enhancing resiliency to climate variability and climate change in a way that fully supports our common goal of sustainable development.

2007-50. We emphasise our willingness to continue and enhance cooperation with and support for developing countries in adapting to climate change and enhancing their resilience to climate variability, in particular those most vulnerable to the negative impacts of climate change.

2007-51. We also emphasise our willingness to work with developing countries on the costs and benefits of climate change adaptation measures to help integrating them in national development planning.

2007-52. We reaffirm our commitment to assist with climate research and risk assessments including through helping developing countries benefit from satellite observation systems.

2007-53. We will also endeavour under the Montreal Protocol to ensure the recovery of the ozone layer by accelerating the phase-out of HCFCs [hydrochlorofluorocarbons] in a way that supports energy efficiency and climate change objectives.

2007-54. We will continue to exercise leadership in the development of the Global Earth Observation System of Systems (GEOSS).

2007-55. We will report on the progress achieved in the areas mentioned above at the G8 Summit in 2008.

2007-62. [To this end, we will] promote international research, encourage investment and development cooperation aimed at energy efficient technologies and other greenhouse gas mitigation options.

2007-73. To this end we will ask our governments to foster a large number of possible measures and various instruments that can clearly reduce energy demand and CO<sub>2</sub> emissions in the transport sector, including inter alia innovative engine concepts, alternative fuels, city planning measures, public transport, best possible inter-linkage of transport methods, increase the share of alternative fuels and energy carriers (biofuels, hydrogen, LPG/CNG [liquefied petroleum gas/compressed natural gas], electricity, hybrid, etc.) in total fuel consumption; fuel diversification, for example the synthetic and cellulosic biofuels and CO<sub>2</sub>-free hydrogen, particularly in combination with the fuel cell, will be decisive in reducing transport CO<sub>2</sub> emissions, provided that second generation biofuel technologies become commercially available.

2007-74. step up coordination on development of international biofuel quality standards from various feedstocks to achieve optimal interoperability and emission profiles

2007-76. monitor the implementation of the necessary measures and discuss progress at two-year intervals during the Environmentally Friendly Vehicles Conference the results of which shall be reported to G8-leaders

2007-77. introduce energy efficiency labels for new cars along the lines of those already on some white goods.

2007-84. [In recognition of the increasingly urgent needs to achieve longer term greenhouse gas abatement, we will work on accelerating development and deployment of carbon capture and storage (CCS), including by] prioritising national and international research and development



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efforts and encouraging international research and technology cooperation, to minimise efficiency losses of the different carbon capture technologies and to clarify geo-technical conditions for secure CO<sub>2</sub> storage, encourage research, development and deployment of clean coal technologies in both developed and emerging economies with the highest energy needs

2007-85. [In recognition of the increasingly urgent needs to achieve longer term greenhouse gas abatement, we will work on accelerating development and deployment of carbon capture and storage (CCS), including by] supporting national and international geoscientific and political efforts in the field of CCS on ensuring security of storage and the provision of necessary legal frameworks to create a stable investment climate, thereby working in co-operation with industry as well as national and international research programmes

2007-86. [In recognition of the increasingly urgent needs to achieve longer term greenhouse gas abatement, we will work on accelerating development and deployment of carbon capture and storage (CCS), including by] reinforcing our commitment made under the Gleneagles and St. Petersburg Plans of Action to support the initiatives taken by IEA and Carbon Sequestration Leadership Forum (CSLF)

2007-92. Those of us who have or are considering plans relating to the use and/or development of safe and secure nuclear energy believe that its development will contribute to global energy security, while simultaneously reducing harmful air pollution and addressing the climate change challenge.

2007-93. [We will] reaffirm our commitment to work toward reduction or, where appropriate, the elimination of tariff and non-tariff barriers to environment goods and services through the WTO [World Trade Organization] Doha negotiations which will also help us to address our shared security and climate goals

2007-102. We firmly agree on the need to further enhancing the contribution of mineral resources to sustainable growth and will continue to support resource rich countries in their efforts to further expand their resource potential while promoting sustainable development and good governance

2007-138. [We agreed to address] Sharing knowledge for improving energy efficiency and technology cooperation with the aim to contribute to reducing CO<sub>2</sub>-emissions, consistent with the Gleneagles Dialogue on Climate Change, Clean Energy and Sustainable Development, and the St. Petersburg Plan of Action on Global Energy Security

2007-195. We reaffirm our commitment made in Gleneagles to helping Africa strengthen its adaptive capacity on climate change and work with African countries in the context of their national development strategies

2007-197. We will further promote responsible sustainable bio-energy production, generated from renewable biomass resources, with a view to contributing to climate protection without jeopardizing food security and the environment

## **2008 (54)**

2008-50. We reaffirm our commitment to take strong leadership in combating climate change and in this respect, welcome decisions taken in Bali as the foundation for reaching a global agreement in the United Nations Framework Convention on Climate Change (UNFCCC) process by 2009. We are committed to its successful conclusion.

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2008-51. We are committed to avoiding the most serious consequences of climate change and determined to achieve the stabilization of atmospheric concentrations of global greenhouse gases consistent with the ultimate objective of Article 2 of the Convention and within a time frame that should be compatible with economic growth and energy security.

2008-52. We seek to share with all Parties to the UNFCCC the vision of, and together with them to consider and adopt in the UNFCCC negotiations, the goal of achieving at least 50% reduction of global emissions by 2050, recognizing that this global challenge can only be met by a global response, in particular, by the contributions from all major economies, consistent with the principle of common but differentiated responsibilities and respective capabilities.

2008-53. Substantial progress toward such a long-term goal requires, inter alia, in the near-term, the acceleration of the deployment of existing technologies, and in the medium- and long-term, will depend on the development and deployment of low-carbon technologies in ways that will enable us to meet our sustainable economic development and energy security objectives. In this regard, we emphasize the importance and urgency of adopting appropriate measures to stimulate development and deployment of innovative technologies and practices.

2008-54. Making progress towards the shared vision, and a long-term global goal will require mid-term goals and national plans to achieve them.

2008-55. In this respect, we acknowledge our leadership role and each of us will implement ambitious economy-wide mid-term goals in order to achieve absolute emissions reductions and, where applicable, first stop the growth of emissions as soon as possible, reflecting comparable efforts among all developed economies, taking into account differences in their national circumstances.

2008-56. We will also help support the mitigation plans of major developing economies by technology, financing and capacity-building.

2008-57. At the same time, in order to ensure an effective and ambitious global post-2012 climate regime, all major economies will need to commit to meaningful mitigation actions to be bound in the international agreement to be negotiated by the end of 2009.

2008-58. We emphasize the importance of expeditious discussions in the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO) for limiting or reducing GHG emissions in the international aviation and maritime sectors, bearing in mind the distinct processes under the UNFCCC toward an agreed outcome for the post-2012 period.

2008-60. We promote clean energy, given its importance in tackling climate change and for the enhancement of energy security, by setting national goals and formulating action plans followed by appropriate monitoring.

2008-65. Recognizing the linkage between the potential impacts of climate change and development, mitigation and adaptation strategies should be pursued as part of development and poverty eradication efforts.

2008-66. A successful global response to climate change requires a partnership between developing and developed countries. Developing countries' efforts to put in place appropriate national mitigation and adaptation plans to build low carbon, climate resilient economies, should

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be supported by scaled up assistance from developed countries.

2008-67. Recognizing that poorer countries are among the most vulnerable to the adverse impacts of climate change, we will continue and enhance cooperation with developing countries, in particular least developed countries (LDCs) and small island developing states, in their efforts to adapt to climate change including disaster risk reduction.

2008-68. To address this issue, we commit to support urgent actions to mainstream adaptation into broader development strategies and encourage developing countries themselves to integrate adaptation into their development policies.

2008-69. The early start of activities under the UNFCCC Adaptation Fund should make an important contribution in this respect. We call on the multilateral development banks and other development agencies to support countries in this endeavor.

2008-70. We will establish an international initiative with the support of the IEA to develop roadmaps for innovative technologies and cooperate upon existing and new partnerships, including carbon capture and storage (CCS) and advanced energy technologies.

2008-72. We strongly support the launching of 20 large-scale CCS demonstration projects globally by 2010, taking into account various national circumstances, with a view to beginning broad deployment of CCS by 2020.

2008-76. To respond to the growing demand for Earth observation data, we will accelerate efforts within the Global Earth Observation System of Systems (GEOSS), which builds on the work of UN specialized agencies and programs, in priority areas, inter alia, climate change and water resources management, by strengthening observation, prediction and data sharing.

2008-77. We also support capacity building for developing countries in earth observations and promote interoperability and linkage with other partners.

2008-78. Substantial finance and investments will be needed to meet the urgent challenges of mitigation, adaptation and access to clean energy in developing countries. While the main sources of finance will be the private sector, public resources are essential to help the poorest and to leverage private resources, notably by financing incremental costs and can be very effective in inducing emissions reduction when national policies provide incentives for low carbon investment. In this regard, we welcome and support the establishment of the Climate Investment Funds (CIF) including the Clean Technology Fund (CTF) and the Strategic Climate Fund (SCF), administered by the World Bank.

2008-79. G8 members have thus far pledged approximately US\$ 6 billion as an ODA contribution to the funds and welcome commitments from other donors.

2008-80. These funds will complement existing multilateral efforts, including the Global Environmental Facility (GEF), which plays the key role as the main financial instrument of the UNFCCC and which we are committed to reinforcing.

2008-81. Market mechanisms, such as emissions-trading within and between countries, tax incentives, performance-based regulation, fees or taxes and consumer labeling can provide pricing signals and have the potential to deliver economic incentives to the private sector. We

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also recognize that they help to achieve emission reductions in a cost effective manner and to stimulate long-term innovation. We intend to promote such instruments in accordance with our national circumstances and share experience on the effectiveness of the different instruments.

2008-83. Additionally, consideration should be given to the reduction or elimination of trade barriers on a voluntary basis on goods and services directly linked to addressing climate change.

2008-84. We also agree to encourage initiatives contributing to climate change mitigation including purchasing and investment policies and practices that promote and support the cleaner and more efficient products and services that can contribute to lower carbon emissions.

2008-85. We note the significant progress made by the multilateral development banks on the Clean Energy Investment Framework (CEIF) agreed at Gleneagles and welcome their joint level of ambition to mobilize public and private investments of over US\$ 100 billion up to 2010 from within existing resources. We call upon these Banks to build on the CEIF to develop comprehensive strategies to guide the integration of climate change into their development work and to set specific targets for low carbon investments like renewable energy.

2008-228. [we will] support country-led development strategies in adapting to the impact of climate change, combating desertification, and promoting conservation and sustainable use of biological diversity, while intensifying our efforts to address climate change;

2008-251. Conscious of our leadership role in meeting such challenges, we, the leaders of the world's major economies, both developed and developing, commit to combat climate change in accordance with our common but differentiated responsibilities and respective capabilities and confront the interlinked challenges of sustainable development, including energy and food security, and human health.

2008-252. Recognizing the scale and urgency of the challenge, we will continue working together to strengthen implementation of the Convention and to ensure that the agreed outcome maximizes the efforts of all nations and contributes to achieving the ultimate objective in Article 2 of the Convention, which should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened, and to enable economic development to proceed in a sustainable manner.

2008-253. recognizing the need for urgent action and the Bali Action Plan's directive for enhanced implementation of the Convention between now and 2012, we commit to taking the actions in paragraph 10 without delay.

2008-254. We support a shared vision for long-term cooperative action, including a long-term global goal for emission reductions, that assures growth, prosperity, and other aspects of sustainable development, including major efforts towards sustainable consumption and production, all aimed at achieving a low carbon society.

2008-255. Taking account of the science, we recognize that deep cuts in global emissions will be necessary to achieve the Convention's ultimate objective, and that adaptation will play a correspondingly vital role.

2008-256. We believe that it would be desirable for the Parties to adopt in the negotiations under the Convention a long-term global goal for reducing global emissions, taking into account the

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principle of equity. We urge that serious consideration be given in particular to ambitious IPCC scenarios.

2008-257. Significant progress toward a long-term global goal will be made by increasing financing of the broad deployment of existing technologies and best practices that reduce greenhouse gas emissions and build climate resilience. However, our ability ultimately to achieve a long-term global goal will also depend on affordable, new, more advanced, and innovative technologies, infrastructure, and practices that transform the way we live, produce and use energy, and manage land.

2008-258. We will do more – we will continue to improve our policies and our performance while meeting other priority objectives – in keeping with the principle of common but differentiated responsibilities and respective capabilities.

2008-259. In this regard, the developed major economies will implement, consistent with international obligations, economy-wide mid-term goals and take corresponding actions in order to achieve absolute emission reductions and, where applicable, first stop the growth of emissions as soon as possible, reflecting comparable efforts among them.

2008-260. At the same time, the developing major economies will pursue, in the context of sustainable development, nationally appropriate mitigation actions, supported and enabled by technology, financing and capacity-building, with a view to achieving a deviation from business as usual emissions.

2008-261. Our nations will continue to cooperate on capacity-building and demonstration activities;

2008-262. [Our nations will continue to cooperate] on innovative solutions, including financing, to reduce emissions and increase removals by sinks;

2008-263. [Our nations will continue to cooperate] on methodological issues.

2008-265. We will work together in accordance with our Convention commitments to strengthen the ability of developing countries, particularly the most vulnerable ones, to adapt to climate change. This includes the development and dissemination of tools and methodologies to improve vulnerability and adaptation assessments, the integration of climate change adaptation into overall development strategies, increased implementation of adaptation strategies, increased emphasis on adaptation technologies, strengthening resilience and reducing vulnerability, and consideration of means to stimulate investment and increased availability of financial and technical assistance.

2008-266. We will promote the uptake and use of such technologies including renewables, cleaner and low-carbon technologies, and, for those of us interested, nuclear power.

2008-268. Mindful of the important role of a range of alternative energy technologies, we recognize, in particular, the need for research, development, and large-scale demonstration of and cooperation on carbon capture and storage.

2008-270. [To enable the full, effective, and sustained implementation of the Convention between now and 2012, we will] Work together on mitigation-related technology cooperation strategies in

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specific economic sectors

2008-271. [To enable the full, effective, and sustained implementation of the Convention between now and 2012, we will] promote the exchange of mitigation information and analysis on sectoral efficiency

2008-272. [To enable the full, effective, and sustained implementation of the Convention between now and 2012, we will promote] the identification of national technology needs and voluntary, action-oriented international cooperation

2008-273. [To enable the full, effective, and sustained implementation of the Convention between now and 2012, we will] consider the role of cooperative sectoral approaches and sector-specific actions, consistent with the Convention;

2008-274. [To enable the full, effective, and sustained implementation of the Convention between now and 2012, we will] Direct our trade officials responsible for WTO issues to advance with a sense of urgency their discussions on issues relevant to promoting our cooperation on climate change;

2008-275. [To enable the full, effective, and sustained implementation of the Convention between now and 2012, we will] Accelerate enhanced action on technology development, transfer, financing, and capacity building to support mitigation and adaptation efforts;

2008-276. [To enable the full, effective, and sustained implementation of the Convention between now and 2012, we will] Support implementation of the Nairobi Work Programme on impacts, vulnerability, and adaptation to climate change;

2008-277. [To enable the full, effective, and sustained implementation of the Convention between now and 2012, we will] Improve significantly energy efficiency, a low-cost way to reduce greenhouse gas emissions and enhance energy security;

2008-278. [To enable the full, effective, and sustained implementation of the Convention between now and 2012, we will] Continue to promote actions under the Montreal Protocol on Substances That Deplete the Ozone Layer for the benefit of the global climate system;

2008-279. [To enable the full, effective, and sustained implementation of the Convention between now and 2012, we will] Intensify our efforts without delay within existing fora to improve effective greenhouse gas measurement.

2008-280. Our nations will continue to work constructively together to promote the success of the Copenhagen climate change conference in 2009.

**2009(42)2009-3.** We are committed to reaching a global, ambitious and comprehensive agreement in Copenhagen.

2009-4. In this respect, we call upon other industrialized countries and emerging economies to actively engage, consistently with the principle of common but differentiated responsibilities and respective capabilities.

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2009-32. At the same time, we will ensure proper regulatory and other frameworks facilitating transition towards low-carbon and resource efficient growth.

2009-49. We reconfirm our strong commitment to the UNFCCC negotiations and to the successful conclusion of a global, wide-ranging and ambitious post-2012 agreement in Copenhagen, involving all countries, consistent with the principle of common but differentiated responsibilities and respective capabilities.

2009-50. Because this global challenge can only be met by a global response, we reiterate our willingness to share with all countries the goal of achieving at least a 50% reduction of global emissions by 2050, recognising that this implies that global emissions need to peak as soon as possible and decline thereafter.

2009-51. As part of this, we also support a goal of developed countries reducing emissions of greenhouse gases in aggregate by 80% or more by 2050 compared to 1990 or more recent years.

2009-52. Consistent with this ambitious long-term objective, we will undertake robust aggregate and individual mid-term reductions, taking into account that baselines may vary and that efforts need to be comparable.

2009-53. We are also committed to taking rapid action to address other significant climate forcing agents, such as black carbon. These efforts, however, must not draw away attention from ambitious and urgent cuts in emissions from other, more long-lasting, greenhouse gases, which should remain the priority.

2009-54. [With a view to building on these experiences and to facilitate action under the global post 2012 agreement, we commit to:] further explore, taking into account national circumstances, the potential of carbon trading systems and their possible linkages;

2009-55. [With a view to building on these experiences and to facilitate action under the global post 2012 agreement, we commit to:] cooperate among us and with other countries to expand carbon markets to the extent possible and reduce costs and align emission allowance trading schemes, with a view to developing transparent carbon markets which would expand to involve emerging and developing countries, including on a sectoral basis;

2009-56. [With a view to building on these experiences and to facilitate action under the global post 2012 agreement, we commit to:] support the development, reform and enhancement of project, programmatic and policy-based offset mechanisms, including the Kyoto Protocol's Clean Development Mechanism (CDM), in order to encourage their use, enhance their effectiveness and environmental integrity, and facilitate actions from developing countries under the global, post-2012 agreement;

2009-57. [With a view to building on these experiences and to facilitate action under the global post 2012 agreement, we commit to:] work with others to further develop market mechanisms under the Copenhagen agreement to possibly include sectoral trading and sectoral crediting mechanisms, to enhance the participation of emerging economies and developing countries in the market ensuring environmental integrity.

2009-58. [With a view to building on these experiences and to facilitate action under the global post 2012 agreement, we commit to:] To trigger a change in direction and mobilise investments we will engage the private sector more actively, in order to bring its expertise into the

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international framework and enhance information exchange and partnerships between Governments and businesses.

2009-59. [With a view to building on these experiences and to facilitate action under the global post 2012 agreement, we commit to:] We will use our participation in ICAO, IMO and UNFCCC processes to reach an agreed outcome for the post-2012 period to rapidly advance towards accelerated emission reductions for the international aviation and maritime sectors.

2009-60. [Building on our existing commitments to urgently advance the development and deployment of clean energy technologies, consistent with existing international obligations, we will:] encourage and facilitate the development, deployment and diffusion, particularly through the engagement and leveraging of critical private sector investment, of advanced appropriate technologies in emerging and developing economies, which permit a technological leap and avoid lock-in;

2009-61. [Building on our existing commitments to urgently advance the development and deployment of clean energy technologies, consistent with existing international obligations, we will:] further promote international participation and cooperation in R&D activities and to this end we invite the IEA to further define its proposal for an international low-carbon energy technology platform;

2009-62. [Building on our existing commitments to urgently advance the development and deployment of clean energy technologies, consistent with existing international obligations, we will:] promote technology roadmaps, such as those being prepared by the IEA, to further the development and demonstration of innovative technologies;

2009-63. [Building on our existing commitments to urgently advance the development and deployment of clean energy technologies, consistent with existing international obligations, we will:] work with developing countries to build capacity to support the deployment, diffusion, demonstration and transfer of climate friendly technologies.

2009-64. Recognising the importance of research and development, we committed in Toyako to increase investment in basic and applied clean technology research and development. We will intensify such efforts and explore options to enhance global technology cooperation.

2009-65. We ask our experts to assess progress in meeting these commitments, and report back by our meeting in Canada in 2010.

2009-66. [To promote concerted efforts on technology and financing, we:] call for the elaboration and implementation of an effective financial arrangement to support the post-2012 regime.

2009-67. Recognising that even implementing ambitious mitigation steps will not avoid further climate impacts, we will define and implement effective adaptation and capacity building policies.

2009-68. [We will address these issues in a spirit of partnership between developed and developing countries and confirm our commitment to effectively address adaptation in the Copenhagen agreement. We will, in addition:] mainstream effective adaptation strategies and risk assessments into international cooperation programmes and assist developing States in integrating adaptation efforts into national development plans and policies;



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2009-69. [We will address these issues in a spirit of partnership between developed and developing countries and confirm our commitment to effectively address adaptation in the Copenhagen agreement. We will, in addition:] significantly increase consideration of the role of ecosystems in adaptation measures, with a view to improving resilience of ecosystems, reducing vulnerability and underpinning new and sustainable growth models;

2009-70: [We will address these issues in a spirit of partnership between developed and developing countries and confirm our commitment to effectively address adaptation in the Copenhagen agreement. We will, in addition:] strengthen knowledge networks for adaptation and support for research and capacity building related to vulnerability and impact assessments as well as planning and implementation of adaptation measures;

2009-71: [We will address these issues in a spirit of partnership between developed and developing countries and confirm our commitment to effectively address adaptation in the Copenhagen agreement. We will, in addition:] address the need for financing for adaptation through appropriate bilateral and multilateral mechanisms.

2009-72: [To address the increased threats of natural disasters and extreme weather phenomena caused by climate change, such as increased flooding, storm surges, droughts and forest fires, we will act to improve risk preparedness, prevention, monitoring and response times, particularly in developing countries, by:] defining common guidelines for disaster prevention and management to be used in developing national plans, in collaboration with the UN International Strategy for Disaster Reduction (UNISDR) and the World Meteorological Organisation (WMO), building on the Hyogo Framework for Action and on national experiences, as well as improving management of risks, awareness raising and training of the population and civil protection real-time response, such as logistical support for emergency situations;

2009-73. [Aware that deforestation accounts for approximately 20% of annual CO<sub>2</sub> emissions, and that forests are an essential repository of biological diversity and key to the livelihoods and rights of many people, we remain engaged in seeking the reduction of emissions from deforestation and forest degradation and in further promoting sustainable forest management globally. We will:] support the development of positive incentives in particular for developing countries to promote emission reductions through actions to reduce deforestation and forest degradation. (Climate Change)

2009-74. [Aware that deforestation accounts for approximately 20% of annual CO<sub>2</sub> emissions, and that forests are an essential repository of biological diversity and key to the livelihoods and rights of many people, we remain engaged in seeking the reduction of emissions from deforestation and forest degradation and in further promoting sustainable forest management globally. We will:] continue to support efforts to reduce emissions from deforestation and forest degradation, including the role of conservation, sustainable management of forests and enhancement of forest carbon stocks, as set out in the Bali Action Plan.

2009-75. [Aware that deforestation accounts for approximately 20% of annual CO<sub>2</sub> emissions, and that forests are an essential repository of biological diversity and key to the livelihoods and rights of many people, we remain engaged in seeking the reduction of emissions from deforestation and forest degradation and in further promoting sustainable forest management globally. We will:] encourage cooperation and the use of synergies between the UNFCCC and other international forest-related processes, and promote national strategies developed in collaboration with relevant players, including governments, indigenous peoples and local communities, civil society groups and the private sector;

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2009-76. [Aware that deforestation accounts for approximately 20% of annual CO<sub>2</sub> emissions, and that forests are an essential repository of biological diversity and key to the livelihoods and rights of many people, we remain engaged in seeking the reduction of emissions from deforestation and forest degradation and in further promoting sustainable forest management globally. We will:] enhance cooperation with partner countries to combat illegal logging and trade in illegally-harvested timber, in accordance with our obligations under international agreements and building on our previous commitments and actions, including those under the Forest Law Enforcement and Governance (FLEG) processes.

2009-80. We will work with developing country partners to integrate effective Sustainable Land Management (SLM) into relevant cooperation programmes and assist them in integrating SLM into national development plans policies and national climate change mitigation and adaptation strategies.

2009-110. We are committed to enhancing our collaboration with partner countries in integrating low-carbon growth strategies and effective adaptation measures into their national development plans.

2009-229. Recalling the Major Economies Declaration adopted in Toyako, Japan, in July 2008, and taking full account of decisions taken in Bali, Indonesia, in December 2007, we resolve to spare no effort to reach agreement in Copenhagen, with each other and with the other Parties, to further implementation of the Convention.

2009-230. Our countries will undertake transparent nationally appropriate mitigation actions, subject to applicable measurement, reporting, and verification, and prepare low-carbon growth plans.

2009-231. We recognize the scientific view that the increase in global average temperature above pre-industrial levels ought not to exceed 2 degrees C. In this regard and in the context of the ultimate objective of the Convention and the Bali Action Plan, we will work between now and Copenhagen, with each other and under the Convention, to identify a global goal for substantially reducing global emissions by 2050.

2009-232. We will take steps nationally and internationally, including under the Convention, to reduce emissions from deforestation and forest degradation and to enhance removals of greenhouse gas emissions by forests, including providing enhanced support to developing countries for such purposes.

2009-233. Adaptation to the adverse effects of climate change is essential. We will work together to develop, disseminate, and transfer, as appropriate, technologies that advance adaptation efforts.

2009-234. We are establishing a Global Partnership to drive transformational low-carbon, climate-friendly technologies. We will dramatically increase and coordinate public sector investments in research, development, and demonstration of these technologies, with a view to doubling such investments by 2015, while recognizing the importance of private investment, public-private partnerships and international cooperation, including regional innovation centers.

2009-235. Drawing on global best practice policies, we undertake to remove barriers, establish incentives, enhance capacity-building, and implement appropriate measures to aggressively accelerate deployment and transfer of key existing and new low-carbon technologies, in

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accordance with national circumstances.

2009-236. Lead countries will report by November 15, 2009, on action plans and roadmaps, and make recommendations for further progress.

2009-237. Our countries will continue to work together constructively to strengthen the world's ability to combat climate change, including through the Major Economies Forum on Energy and Climate. In particular, our countries will continue meeting throughout the balance of this year in order to facilitate agreement in Copenhagen.

**2010 (10)**

2010-24: We reiterate our willingness to share with all countries the goal of achieving at least a 50% reduction of global emissions by 2050, recognizing that this implies that global emissions need to peak as soon as possible and decline thereafter.

2010-25: We also support a goal of developed countries reducing emissions of greenhouse gases in aggregate by 80% or more by 2050, compared to 1990 or more recent years.

2010-26: Consistent with this ambitious long-term objective, we will undertake robust aggregate and individual mid-term reductions, taking into account that baselines may vary and that efforts need to be comparable.

2010-27: Recognizing the scientific view that the increase in global temperature should not exceed 2 degrees Celsius, we also call for the full and effective implementation of all the provisions of the Accord, including those related to measurement, reporting and verification thereby promoting transparency and trust.

2010-28: In this context, we are putting in place our respective fast-start finance contributions to help address the most urgent and immediate needs of the most vulnerable developing countries and to help developing countries lay the ground work for long-term, low-emission development.

2010-29: We express our commitment to cooperate actively and constructively with Mexico as the President of the sixteenth meeting of the UNFCCC Conference of the Parties on November 29 – December 10, 2010.

2010-30: We support related initiatives, including the UN Secretary-General's High-Level Advisory Group on identifying long-term public and private financing, and the Paris-Oslo Process on REDD+.

2010-31: We will share our national experiences and plans for adaptation, including through a conference on climate change adaptation in Russia in 2011.

2010-32: To address climate change and increase energy security, we are committed to building low carbon and climate resilient economies, characterized by green growth and improved resource efficiency.

2010-33: Several of us commit to accelerate the CCS demonstration projects and set a goal to achieve their full implementation by 2015.

**2011 (7)**

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2011-3: We will foster green growth as it is essential to fight global warming, represents a promising source of jobs for our societies, and reflects a shared aspiration for more sustainable development.

2011-43: We strongly support international cooperation on green growth and will intensify our efforts to contribute to progress for the next steps, notably looking toward the June 2012 UN Conference in Rio on sustainable development and various international events planned, including the Bonn Conference on Water, Energy and Food Security in November, the Durban Conference on Climate Change in December, the Marseille World Water Forum in March 2012 and the Conference on Biological Diversity in October 2012 in New Delhi.

2011-48: We, members of the G8, have undertaken ambitious measures, and are committed to long-term efforts, with a view to doing our part to limit effectively the increase in global temperatures below 2 degrees Celsius above pre-industrial levels, consistent with science.

2011-49: We reaffirm our willingness to share with all countries the goal of achieving at least a 50% reduction of global emissions by 2050, recognising that this implies that global emissions need to peak as soon as possible and decline thereafter

2011-50: As part of this effort, we also support a goal of developed countries reducing emissions of greenhouse gases in aggregate by 80% or more by 2050, compared to 1990 or more recent years.

2011-51: Consistent with this ambitious long-term objective, we will undertake robust aggregate and individual mid-term reductions, taking into account that baselines may vary and that efforts need to be comparable.

2011-52: We are determined to deliver on our commitments as listed in Copenhagen, and confirmed in Cancun