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## Kyoto Protocol and Beyond: “Whither the Targets?”\*

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### POST-2012 EMISSIONS TARGETS

More stringent greenhouse gas emissions targets are being proposed for the years after the Kyoto Protocol's first compliance period (2008–2012).

For example, on October 17, 2002, the Council of Environment Ministers of the EU Member States stated that “...global efforts should be guided by a long-term objective of a global temperature increase of 2 degrees Celsius over pre-industrial levels and a stabilization of CO<sub>2</sub> concentrations below 550 ppm. This is likely to require a global reduction in emissions of greenhouse gases by 70 percent compared to 1990, as identified by the IPCC.” Based on the 2001 Intergovernmental Panel on

Climate Change data, in order to put the world on that trajectory developed country net emissions must fall to zero by 2050 in order to allow developing countries to use energy and continue to grow (see Figure 1). (The Kyoto Protocol does not require developing countries to reduce their emissions.)

In another example, the UK government's February 2002 report by the Interdepartmental Analysts Group suggests that for a 60% reduction in CO<sub>2</sub> from 1998 levels by 2050 in the UK and even larger cuts by Russia, Germany, Canada, and the US (see Figure 2) may be required. The report notes that a countries' relative competitiveness can be affected by these large scale cuts.

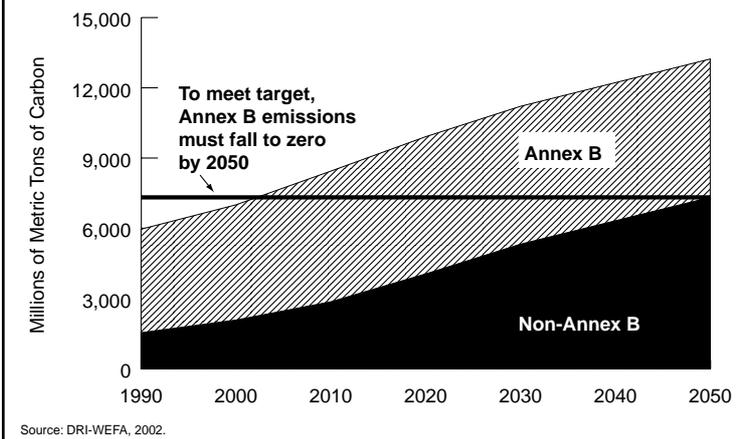
### DRI-WEFA Post-2012 Emission Targets

To be consistent with this range of additional reductions, a new DRI-WEFA analysis assesses the emission trajectories for two additional targets besides the Kyoto Protocol for the UK, Germany, Spain, and the Netherlands (see “Kyoto Protocol and Beyond” at [www.iccfglobal.org](http://www.iccfglobal.org)):

**Target 1:** Current commitment under the Kyoto Protocol through the first period (2008–2012) and a target level of 60 percent below current (2000) levels of CO<sub>2</sub> emissions by 2050, achieved via a continuous annual reduction per year beyond the first Kyoto commitment period.

**Target 2:** Current commitment under the Kyoto Protocol through the first period (2008–2012) and a target level of zero CO<sub>2</sub> emissions by 2050 achieved via a continuous annual reduction beyond the first Kyoto commitment period.

**Figure: 1 Carbon Emissions for Developed (Annex B) and Developing Countries: Business-as-Usual Case and Emissions Cuts Required to Meet Target of 550 PPM Using IPCC Data**



<sup>1</sup>Leggett, J., Pepper, W.J., and Swart, R.J.: 1992, 'Emission scenarios for the IPCC: an update', In (J.T. Houghton, B.A. Callender, and S.K. Varney eds.) *Climate Change 1992: The Supplementary Report to the IPCC Scientific Assessment*, Cambridge University Press, New York, 69-96

Schimel, D., Enting, I., Heimann, M., Wigley, T., Raynaud, D., Alves, D., and Siegenthaler, U.: 1995, 'CO<sub>2</sub> and the carbon cycle', In (J.T. Houghton, et al. eds.) *Climate Change 1994: Radiative Forcing of Climate Change and an Evaluation of the IPCC IS92 Emission Scenarios*, Cambridge University Press, New York, 35-71.

\*This report was prepared by the International Council for Capital Formation based on studies done for the ICCF by DRI-WEFA under the direction of Mary H. Novak, Managing Director, Energy Consulting, DRI-WEFA. Junya Tanizaki, Margaret Rhodes, Lilly Teng, and David Goldsack performed the energy sector analysis. William Thomson and Joyce Brinner prepared the economic analysis. For more information, contact Dr. Margo Thorning, Managing Director, ICCF, 1750 K Street, N.W., Suite 400, Washington, D.C., telephone: 202.293.5811; email: [mthorning@accf.org](mailto:mthorning@accf.org); Web site: [www.iccfglobal.org](http://www.iccfglobal.org).

The impact of Target 1 and Target 2 on required emission trajectories for Annex B countries, the UK, and Germany are shown in Figures 3, 4, and 5. The new German government target of a 40% reduction from 1990 levels by 2020 is also shown in Figure 4.

### UK GOVERNMENT ANALYZES MORE STRINGENT TARGETS

Analysis conducted by the UK government ("Long-Term Reductions in Greenhouse Gas Emissions in the UK") in response to the call to investigate the cost of a 60 percent reduction by 2050 has also found high costs for more stringent targets in later years (between €316 per metric ton for a 60 percent reduction to €569 per metric ton for a 70 percent reduction.) The 95 percent reduction in carbon emissions called for in "Climate Change: The UK Programme" (DETR-November 2000) was not modeled. This is a serious oversight that needs to be rectified promptly.

As new, more stringent emission targets are imposed after the first commitment period, several studies corroborate the DRI-WFA study estimates of increasing carbon emissions and suggest the UK will face hard choices regarding policies to curb emissions. The report "Climate Change: The UK Programme" calls for reducing emissions in industrial economies by 95 percent to accommodate developing country growth expectations. The UK government's own data show that it recognizes the challenge posed by tighter emission targets. Energy from renewable sources may not play as large a role in the UK as some have suggested. For example, wind power, which has been singled out in a report by the UK government's Performance and Innovation Unit for major expansion, is not a very viable option. Wind power may not replace much conventional energy because, as the new Royal Academy of Engineering report, "An Engineering Appraisal of the Policy and Innovations Unit's Energy Review," notes, in the UK, there is a sizeable probability of no or very little wind blowing across the entire country (p. 27). Regarding biofuels, the report also notes, "It would require the whole of Kent to be covered with coppiced willow, for example, to replace the output of Dungeness B power station on the Kent coast" (p. 26).

