EMBARGO:
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The widening gap between present emissions and the two-degree target

Carbon dioxide emission reductions required to limit global warming to 2°C are becoming a receding goal based on new figures reported today in the latest Global Carbon Project (GCP) calculations published today in the advanced online edition of *Nature Climate Change*.

"A shift to a 2°C pathway requires an immediate, large, and sustained global mitigation effort" says GCP executive-director and CSIRO co-author of the paper, Dr Pep Canadell.

Global CO_2 emissions have increased by 58% since 1990, rising 3% in 2011, and 2.6% in 2012. The most recent figure is estimated from a 3.3% growth in global gross domestic product and a 0.7% improvement in the carbon intensity of the economy.

Dr Canadell said the latest carbon dioxide emissions continue to track at the high end of a range of emission scenarios, expanding the gap between current trends and the course of mitigation needed to keep global warming below 2°C.

He said on-going international climate negotiations need to recognise and act upon the growing gap between the current pathway of global greenhouse emissions and the likely chance of holding the increase in global average temperature below 2°C above pre-industrial levels.

The research, led by Dr Glen Peters from CICERO, Norway, compared recent carbon dioxide emissions from fossil fuel combustion, cement production, and gas flaring with emission scenarios used to project climate change by the Intergovernmental Panel on Climate Change (IPCC).

“We need a sustained global CO_2 mitigation rate of at least 3% if global emissions are to peak before 2020 and follow an emission pathway that can keep the temperature increase below 2°C”, Dr. Peters said.

“Mitigation requires energy transition led by the largest emitters of China, the US, the European Union and India”.

He said that remaining below a 2°C rise above pre-industrial levels will require a commitment to technological, social and political innovations and an increasing need to rely on net negative emissions in future.

The Global Carbon Project, supported by CSIRO and the Australian Climate Change Science Program, generates annual emission summaries contributing to a process of informing policies and decisions on adaptation, mitigation, and their associated costs. The summaries are linked to long-term emission scenarios based on the degree of action taken to limit emissions.

This research is based on the release of an extensive new dataset by the Global Carbon Project published simultaneously with the Nature Climate Change paper in the journal of Earth System Science Data Discussions.

“The mitigation challenge to stay below two degrees” by G.P. Peters, R.M. Andrew, T. Boden, J.G. Canadell, P. Ciais, C. Le Quéré, G. Marland, M.R. Raupach, C. Wilson is published online by *Nature Climate Change*, 3 December 2012.

“The Global Carbon Budget 1959–2011” by C. Le Quéré, R. J. Andres, T. Boden, T. Conway, R. A. Houghton, J. I. House, G. Marland, G. P. Peters, G. van der Werf, A. Ahlström, R. M. Andrew, L. Bopp, J. G. Canadell, P. Ciais, S. C. Doney, P. Friedlingstein, C. Huntingford, A. K. Jain, C. Jourdain, E. Kato, R. Keeling, S. Levis, P. Levy, M. Lomas, B. Poulter, M. Raupach, J. Schwinger, S. Sitch, B. D. Stocker, N. Viovy, S. Zaehle and N. Zeng, is online by *Earth System Science Data Discussions* (http://www.earth-system-science-data.net/), 3 December 2012.

More information:

- GCP homepage provides all datasets, data summaries, and papers supporting the Carbon Budget 2012 release [www.globalcarbonproject.org]
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