



UNITED NATIONS ENVIRONMENT PROGRAMME

Programme des Nations Unies pour l'environnement    Programa de las Naciones Unidas para el Medio Ambiente  
Программа Организации Объединенных Наций по окружающей среде    برنامج الأمم المتحدة للبيئة

联合国环境规划署



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Until After 11.00am GMT, 23 November 2010***

## **5 Gigatonnes—the Gap Between Climate Science and Current Climate Cuts After Copenhagen?**

### **New UNEP-led Report Spells Out Chances for Keeping Global Temperatures Under a 2 Degrees Celsius Rise in the 21<sup>st</sup> Century**

**Helsinki/Mexico City/Nairobi/London/Washington DC, 23 November 2010** - Nations have the chance to deliver almost 60 per cent of the emissions reductions needed to keep global temperatures under a 2 degrees Celsius rise.

But only if the pledges made last year in Copenhagen are fully met.

These are among the findings of a new report compiled by the UN Environment Programme (UNEP) and jointly authored by over 30 leading scientists from numerous international research institutes.

The report was convened in conjunction with the European Climate Foundation and the National Institute of Ecology-SEMARNAT, Mexico.

The findings, launched in advance of the UN climate convention meeting in Cancun, Mexico, spotlight the size of the 'emissions gap' between where nations might be in 2020 versus where the science indicates they need to be.

UN Secretary-General, Ban Ki-moon, said, "I encourage all Parties to make good on their national mitigation pledges, and to further progress within the negotiations as well as through strengthened efforts on the ground to curb emissions. There is no time to waste. By closing the gap between the science and current ambition levels, we can seize the opportunity to usher in a new era of low-carbon prosperity and sustainable development for all."

It is estimated that, in order to have a 'likely' and cost-effective chance of pegging temperatures to 2 degrees Celsius or below over the 21<sup>st</sup> Century, global emissions will need to have peaked within the next 10 years and be around 44 gigatonnes<sup>1</sup> of CO<sub>2</sub> equivalent in 2020.

The report, whose compilation was led by the UNEP Chief Scientist, finds that:

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<sup>1</sup> One gigatonne of carbon dioxide equivalent is a billion metric tonnes of carbon. It is equivalent to approximately the annual greenhouse gas emissions of international aviation and shipping.

- Under a business-as-usual scenario, annual emissions of greenhouse gases could be around 56 gigatonnes of CO<sub>2</sub> equivalent by 2020. As a point of reference, global emissions were estimated to be around 48 gigatonnes in 2009;
- Fully implementing the pledges and intentions associated with the Copenhagen Accord could, in the best case identified by the group, cut emissions to around 49 gigatonnes of CO<sub>2</sub> equivalent by 2020;
- This would leave a gap of around 5 gigatonnes of CO<sub>2</sub> equivalent that needs to be bridged over the coming decade—an amount equal to the emissions of all the world's cars, buses and trucks in 2005;
- In the worst case identified in the report—where countries follow their lowest ambitions and accounting rules set by negotiators are lax rather than strict—emissions could be as high as 53 gigatonnes in 2020, only slightly lower than business as usual projections.

Achim Steiner, UN Under-Secretary General and UNEP Executive Director, said: “The results indicate that the UN meeting in Copenhagen could prove to have been more of a success than a failure if all the commitments, intentions and funding, including fully supporting the pledges of developing economies, are met.”

“There is a gap between the science and current ambition levels. But, what this report shows is that the options on the table right now in the negotiations can get us almost 60 per cent of the way there. This is a good first step.”

The Mexican Secretary of Environment and Natural Resources, Mr. Juan Rafael Elvira, added that “the level of effort expressed in the Copenhagen Accord in terms of emission reduction is almost three times higher than what was achieved with the Kyoto Protocol, which is by itself very positive and shows some improvement. However, we need to formalize and, if possible, increase current pledges and translate them into commitments for developed countries and into acknowledged actions for developing countries”.

In addition, the report shows that the way in which the pledges are implemented—in other words how, for example, the accounting rules are set through the negotiations—can be almost as important as the big headline figures of the pledges themselves. In other words, the rules underpinning the emissions reduction matter as much as the pledges.

“This still leaves a gap of perhaps 5 gigatonnes of CO<sub>2</sub> equivalent—a gap that could be bridged by higher ambition on CO<sub>2</sub> by developed and developing countries perhaps complemented by action on a range of so-called non-CO<sub>2</sub> pollutants such as methane from waste tips to black carbon from the inefficient burning of biomass and animal wastes,” said Mr. Steiner.

Christiana Figueres, Executive Secretary of the UN Framework Convention on Climate Change (UNFCCC), said: “The report underlines both the feasibility of emission reductions and the importance of international cooperation to raise the current inadequate level of ambition. Governments meeting at the UN Climate Conference in Cancún will need to both anchor the pledges they made in Copenhagen in the UN

context and to work swiftly to agree ways to reduce emissions so that the world has a chance of staying below a 2 degrees Celsius temperature rise.”

## **Background to the Gap Analysis**

The assessment, entitled *The Emissions Gap Report: Are the Copenhagen Accord pledges sufficient to limit global warming to 2 or 1.5°C?*, is the work of over 30 researchers from 25 centres in countries including Australia, Austria, Belgium, Brazil, China, Denmark, Germany, India, Japan, Mexico, the Netherlands, New Zealand, Switzerland, the United Kingdom and the United States.

It builds on work carried out in the wake of the UN climate change convention meeting in Copenhagen while also assessing the prospects and pathways for the even tougher target of keeping a global temperatures rise to 1.5 degrees Celsius or under over the century.

The report also assesses in an annex the individual pledges of more than a dozen key countries ranging from India to Russia and the United States.

The various scenarios include estimated emissions in 2020 if nations were to fully implement their most ambitious pledges versus the emissions in 2020 if nations meet only their minimum targets.

Many developing countries before, during and after Copenhagen and including South Africa, Indonesia and Mexico, have made pledges which are conditional on the action of others – in particular the provision of international climate finance.

Meanwhile, the European Union has a target of a 20 per cent emissions reduction but has stated it is prepared to go to a 30 per cent cut if others follow. Canada has stated that it will follow the United States whose 17 per cent emissions reduction pledge is dependent on legislation being passed.

In addition, the report underlines the importance of ensuring ‘strict’ rules regarding the accounting for Land Use, Land Use Change and Forestry (LULUCF) and the use of surplus emissions units<sup>2</sup> are addressed. It finds that the rules governing these issues can have almost as big an impact as the headline pledges. If the rules are not set right, the pledges can be undermined.

## **Key Findings from the Report**

Studies show that emissions levels of approximately 44 gigatonnes of CO<sub>2</sub> equivalent (range of 39 to 44) in 2020 would be consistent with a likely chance of limiting warming to 2 degrees Celsius.

- Under business-as-usual projections, global emissions could reach 56 gigatonnes of CO<sub>2</sub> equivalent (range of 54 to 60) in 2020;
- If the lowest ambition pledges were implemented, in a ‘lenient’ fashion, emissions could be slightly lower at 53 gigatonnes of CO<sub>2</sub> equivalent (range of 52 to 57),

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<sup>2</sup> Sometimes referred to as ‘hot air’

leaving a significant gap of 9 gigatonnes;

However, a set of policy options are available in the negotiations that could reduce the gap substantially:

- Moving to higher ambition, conditional pledges;
- Adopting rules that avoid a net increase in emissions from 'lenient' LULUCF accounting and the use of surplus emissions units;
- Avoiding the impact of factors such as the 'double counting' of offsets will also be important to limit the size of the gap;
- If all of the above policy options were to be taken, emissions in 2020 could be as low as 49 gigatonnes of CO<sub>2</sub> equivalent, reducing the size of the gap from business-as-usual by almost 60 per cent - down to 5 gigatonnes of CO<sub>2</sub> equivalent;
- The studies show that it is feasible to bridge the remaining gap through more ambitious domestic actions, some of which could be supported by international climate finance;
- With or without a gap, the assessment clearly shows that steep emissions reduction rates are needed post-2020 in order to keep our chances of limiting warming to 2 degrees Celsius;
- In order to meet a 1.5 degree Celsius target, emissions post-2020 will have to fall even faster—by perhaps 4 to 5 per cent annually-- and become negative around 2050.

“This unprecedented partnership of climate modelers makes one clear and unequivocal point—keeping climate change within manageable limits is do-able. But the window for cost effective action is narrowing with every year of delay. Cancun represents the next opportunity to close the gaps and keep that window open as the world works towards a new international treaty,” said Mr. Steiner.

### **Notes to Editors**

A Summary of the Emissions Gap report will be available on [www.unep.org](http://www.unep.org)

### **Acknowledgements**

The United Nations Environment Programme (UNEP) would like to thank the Steering Committee, all the lead and contributing authors, and the Secretariat for their contribution to the development of this report. Organisations are given below for identification purposes only.

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