



**21 September 2014**

## **Climate targets move further from reach**

**The Global Carbon Project's 2014 Carbon Budget shows the continuing rise of global greenhouse gas emissions in 2013. Analyses from IIASA researchers and colleagues show the implications for meeting climate targets.**

The Global Carbon Project (GCP) today released its [2014 Carbon Budget](#). The report, which quantifies global greenhouse gas emissions for the year 2013, was released at the same time as four analyses analyzing the implications of the current emissions trajectory. The report comes just before the United Nations Climate Summit in New York, and shows that global CO<sub>2</sub> emissions from fossil fuel and cement production grew to a record high of 36 billion tonnes CO<sub>2</sub> in 2013. According to the report, Fossil fuel CO<sub>2</sub> emissions are projected to increase 2.5% in 2014, bringing the total CO<sub>2</sub> emissions from all sources above 40 billion tonnes CO<sub>2</sub>.

He says, "This week's summit in New York is a pivotal event—along with the upcoming COP20 meeting in Lima—on the road to a global climate deal that could be agreed in Paris in 2015. The scientific assessment of the Global Carbon Project should be a wakeup call to politicians."

IIASA has been involved in the GCP since the founding of the project, hosting a series of workshops with the group. The partnership has also spurred new research initiatives at the Institute, including studies of methane emissions, the carbon cycle, and net negative carbon dioxide emissions.

### **Implications for the 2-degree target**

One study released today focuses on the implications of current emissions growth for limiting future climate change to 2 degrees Celsius above pre-industrial levels, a target that researchers believe may limit the worst effects of climate change.

IIASA researcher Joeri Rogelj contributed to the study. He says, "Our paper meticulously exposes the blatant disjoint between the robust scientific evidence, the political discourse, and real-world mitigation action. This science-based stocktaking exercise once again highlights the urgency of global action in order for the world to embark as soon as possible onto a low-carbon trajectory which leads to global zero carbon emissions at some point during this century."

The study shows that the upward trend of CO<sub>2</sub> emissions over the past decades is continuing, despite discussions to limit climate change. The study also estimates that in

order to stay under the 2 degree limit, future cumulative emissions would need to be limited to no more than 1200 billion tons of CO<sub>2</sub>. At the 2014 emissions level, this amount of emissions would be reached in 30 years.

But if emissions continue to rise, as projected, this limit would be reached sooner. The study shows that far stronger emissions will be required later, with a greater risk that climate targets will be overreached.

[Read more from the Tyndall Centre for Climate Change Research \(link\)](#)

### **Betting on negative emissions**

In a commentary, also published today in the journal *Nature Climate Change*, IIASA guest research scholar Sabine Fuss, of the Mercator Research Institute on Global Commons and Climate Change (MCC), Nebojsa Nakicenovic, and co-authors point out that most scenarios for achieving the 2-degree stabilization target assume the use of negative emissions technologies such as Bioenergy with Carbon Capture and Storage (BECCS), which remain unproven.

Fuss, lead author on the paper and a member of the steering committee of the GCP, says, “We’re relying on an approach that involves considerable uncertainties. Because, at present BECCS is still in its infancy. It’s not too late to achieve the 2-degree target. However, in order to get clarity about the opportunities and risks of negative emissions, and to allow for the application of this technology at an industrial scale, we must, among other tasks, get pilot projects underway.”

Nakicenovic says, “The research indicates that negative emissions will need to be part of our future strategy on climate change mitigation—but to make these technologies a reality, much more research and investment will be needed.”

[Read more from MCC \(link\)](#)

#### **More information:**

**Related news:** <http://www.iiasa.ac.at/web/home/about/news/20140625-Naki-GCP.html>

#### **Events:**

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This media release is part of the Global Carbon Budget 2014 of the Global Carbon Project, based on four analyses published on 21 September 2014, 18:00 UK time (19:00 CET).

- Le Quéré et al. (2014) Global Carbon Budget 2014. *Earth System Science Data Discussions* (manuscript in discussions), <http://dx.doi.org/10.5194/essdd-7-521-2014>
- Friedlingstein et al. (2014) Persistent growth of CO<sub>2</sub> emissions and implications for reaching climate targets. *Nature Geoscience*, <http://dx.doi.org/10.1038/ngeo2248>
- Raupach et al. (2014) Sharing a quota on cumulative carbon emissions. *Nature Climate Change*, <http://www.nature.com/doi/10.1038/nclimate2384>
- Fuss et al. (2014) Betting on Negative Emissions. *Nature Climate Change* (commentary)

Access:

- Data and figures: <http://www.globalcarbonproject.org/carbonbudget>
- Data interface for exploring data: <http://www.globalcarbonatlas.org>
- Prior to embargo: Nature/s paper can be requested for media purposes to [press@nature.com](mailto:press@nature.com)
- After embargo papers are free for one month for registered users at [www.nature.com](http://www.nature.com)

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- Facebook <https://www.facebook.com/globalcarbonproject>
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