Press release: EMBARGO: Monday 30 January, 1600 GMT (London time)

Challenges ahead for low-carbon energy

Momentum in low carbon energy seen in slowdown of global carbon emissions, shows research for tracking progress of the Paris Climate Agreement

Low-carbon energy is gaining momentum worldwide and is globally reducing carbon dioxide pollution shows a study published today by researchers at the University of East Anglia (UEA) and the Global Carbon Project.

Low-carbon energy from wind, biomass, solar, and hydropower is increasing while the share of fossil fuels in primary energy is declining. Energy efficiency is also improving globally, reversing the trends in global energy inefficiency of the early 2000s.

The study also shows this new low carbon momentum is threatened unless the deployment of new energy technologies is enhanced.

Professor Corinne Le Quéré, Director of the Tyndall Centre for Climate Change Research, an author of the analysis, said: "The global transition to a low-carbon economy powered by low-carbon energy is underway. It is good for health, good for jobs, and good for the environment, but the momentum will not last unless we accelerate efforts to deploy new technologies."

The study is published today in the scientific journal *Nature Climate Change*. It examines a set of key performance indicators for tracking carbon emissions and energy sources, and for measuring progress towards addressing climate change. It shows that many key indicators are currently broadly consistent with scenarios of future energy that also address climate change.

But it also shows the need to accelerate deployment of low-carbon and renewable energy.

One key indicator, the use of technology to capture carbon dioxide pollution at power stations and store it under ground, has failed to progress. Thousands of facilities are needed at power stations, but only tens are currently proposed.

Annual global carbon emissions have not increased for the past three years, a result that is unprecedented while there has been global economic growth in GDP. This was caused by a rapid deceleration and decline in coal use, primarily in China but also in the United States, and was due to market forces.

"The rapid deployment of wind and solar is starting to have an effect globally, and in key players such as China, the US, and the EU", said Glen Peters, Senior Researcher at the Center for International Climate and Environmental Research in Oslo (CICERO), who led the study. "The rapid and continued deployment of wind and solar is welcome, but the real challenge now is to develop technologies and behaviours that shift the entire global energy system to be carbon neutral by mid-century".

The proposed key performance indicators are easily mapped to both the wide array of national emissions pledges and to scenarios of future emissions. The researcher's method tracks progress in both national pledges and global ambitions and reveal details of the arising issues.

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Key indicators to track current progress and future ambition of the Paris Agreement, by G.P. Peters, R.M. Andrew, J.G. Canadell, S. Fuss, R.B. Jackson, J.I. Korsbakken, C. Le Quéré, and N. Nakicenovic. *Nature Climate Change* http://dx.doi.org/10.1038/nclimate3202 (live after the embargo is lifted)

PAPER REFERENCE

- Prior to embargo: Nature papers can be requested for media purposes press@nature.com
- Contact Glen Peters (glen.peters@cicero.oslo.no) for further details

ADDITIONAL RELATED MATERIAL

- Global Carbon Budget 2016: http://www.globalcarbonproject.org/carbonbudget
- Data interface key exploring data: http://www.globalcarbonatlas.org
- Social Media: @gcarbonproject, https://www.facebook.com/globalcarbonproject