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Prospect of limiting the global increase in temperature to 2°C is getting bleaker

30 May 2011

CO2 emissions reach a record high in 2010; 80% of projected 2020 emissions from the power sector are already locked in

Energy-related carbon-dioxide (CO2) emissions in 2010 were the highest in history, according to the latest estimates by the International Energy Agency (IEA).

After a dip in 2009 caused by the global financial crisis, emissions are estimated to have climbed to a record 30.6 Gigatonnes (Gt), a 5% jump from the previous record year in 2008, when levels reached 29.3 Gt.

In addition, the IEA has estimated that 80% of projected emissions from the power sector in 2020 are already locked in, as they will come from power plants that are currently in place or under construction today.

"This significant increase in CO2 emissions and the locking in of future emissions due to infrastructure investments represent a serious setback to our hopes of limiting the global rise in temperature to no more than 2°C," said Dr Fatih Birol, Chief Economist at the IEA who oversees the annual *World Energy Outlook*, the Agency's flagship publication.

Global leaders agreed a target of limiting temperature increase to 2°C at the UN climate change talks in Cancun in 2010. For this goal to be achieved, the long-term concentration of greenhouse gases in the atmosphere must be limited to around 450 parts per million of CO2-equivalent, only a 5% increase compared to an estimated 430 parts per million in 2000.

The IEA's 2010 *World Energy Outlook* set out the 450 Scenario, an energy pathway consistent with achieving this goal, based on the emissions targets countries have agreed to reach by 2020. For this pathway to be achieved, global energy-related emissions in 2020 must not be greater than 32 Gt. This means that over the next ten years, emissions must rise less in total than they did between 2009 and 2010.

"Our latest estimates are another wake-up call," said Dr Birol. "The world has edged incredibly close to the level of emissions that should not be reached until 2020 if the 2°C target is to be attained. Given the shrinking room for manoeuvre in 2020, unless bold and decisive decisions are made very soon, it will be extremely challenging to succeed in achieving this global goal agreed in Cancun."

In terms of fuels, 44% of the estimated CO2 emissions in 2010 came from coal, 36% from oil, and 20% from natural gas.

The challenge of improving and maintaining quality of life for people in all countries while limiting CO2 emissions has never been greater. While the IEA estimates that 40% of global emissions came from OECD countries in 2010, these countries only accounted for 25% of emissions growth compared to 2009. Non-OECD countries – led by China and India – saw much stronger increases in emissions as their economic growth accelerated.

However, on a per capita basis, OECD countries collectively emitted 10 tonnes, compared with 5.8 tonnes for China, and 1.5 tonnes in India.

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