

Worst ever carbon emissions leave climate on the brink

Exclusive: Record rise, despite recession, means 2C target almost out of reach

- [Fiona Harvey](#), Environment correspondent
- guardian.co.uk, Sunday 29 May 2011 22.00 BST



Economic recession has failed to curb rising emissions, undermining hope of keeping global warming to safe levels Photograph: Dave Reede/All Canada Photos/Corbis

Greenhouse gas emissions increased by a record amount last year, to the highest carbon output in history, putting hopes of holding global warming to safe levels all but out of reach, according to unpublished estimates from the [International Energy Agency](#).

The shock rise means the goal of preventing a temperature rise of more than [2 degrees Celsius – which scientists say is the threshold for potentially "dangerous climate change"](#) – is likely to be just "a nice Utopia", according to [Fatih Birol](#), chief economist of the IEA. It also shows the most serious [global recession](#) for 80 years has had only a minimal effect on emissions, contrary to some predictions.

Last year, a record 30.6 gigatonnes of carbon dioxide poured into the atmosphere, mainly from burning fossil fuel – a rise of 1.6Gt on 2009, according to estimates from the IEA regarded as the gold standard for emissions data.

"I am very worried. This is the worst news on emissions," Birol told the Guardian. "It is becoming extremely challenging to remain below 2 degrees. The prospect is getting bleaker. That is what the numbers say."

Professor Lord Stern of the London School of Economics, the author of the influential Stern

Report into the economics of [climate change](#) for the Treasury in 2006, warned that if the pattern continued, the results would be dire. "These figures indicate that [emissions] are now close to being back on a 'business as usual' path. According to the [Intergovernmental Panel on Climate Change's] projections, such a path ... would mean around a 50% chance of a rise in global average temperature of more than [4C by 2100](#)," he said.

"Such warming would disrupt the lives and livelihoods of hundreds of millions of people across the planet, leading to widespread mass migration and conflict. That is a risk any sane person would seek to drastically reduce."

Birol said disaster could yet be averted, if governments heed the warning. "If we have bold, decisive and urgent action, very soon, we still have a chance of succeeding," he said.

The IEA has calculated that if the world is to escape the most damaging effects of global warming, annual [energy](#)-related emissions should be no more than 32Gt by 2020. If this year's emissions rise by as much as they did in 2010, that limit will be exceeded nine years ahead of schedule, making it all but impossible to hold warming to a manageable degree.

Emissions from energy fell slightly between 2008 and 2009, from 29.3Gt to 29Gt, due to the financial crisis. A small rise was predicted for 2010 as economies recovered, but the scale of the increase has shocked the IEA. "I was expecting a rebound, but not such a strong one," said Birol, who is widely regarded as one of the world's foremost experts on emissions.

John Sauven, the executive director of Greenpeace UK, said time was running out. "This news should shock the world. Yet even now politicians in each of the great powers are eyeing up extraordinary and risky ways to extract the world's last remaining reserves of fossil fuels – [even from under the melting ice of the Arctic](#). You don't put out a fire with gasoline. It will now be up to us to stop them."

Most of the rise – about three-quarters – has come from developing countries, as rapidly emerging economies have weathered the financial crisis and the recession that has gripped most of the developed world.

But he added that, while the emissions data was bad enough news, there were other factors that made it even less likely that the world would meet its greenhouse gas targets.

- About 80% of the power stations likely to be in use in 2020 are either already built or under construction, the IEA found. Most of these are fossil fuel power stations unlikely to be taken out of service early, so they will continue to pour out carbon – possibly into the mid-century. The emissions from these stations amount to about 11.2Gt, out of a total of 13.7Gt from the electricity sector. These "locked-in" emissions mean savings must be found elsewhere.

"It means the room for manoeuvre is shrinking," warned Birol.

- Another factor that suggests emissions will continue their climb is the crisis in the [nuclear power](#) industry. Following the tsunami damage at Fukushima, Japan and Germany have called a halt to their reactor programmes, and [other countries are reconsidering](#) nuclear power.

"People may not like nuclear, but it is one of the major technologies for generating electricity without carbon dioxide," said Birol. The gap left by scaling back the world's nuclear ambitions is unlikely to be filled entirely by renewable energy, meaning an increased reliance on fossil

fuels.

- Added to that, the United Nations-led negotiations on a new global treaty on climate change have stalled. "The significance of climate change in international policy debates is much less pronounced than it was a few years ago," said Birol.

He urged governments to take action urgently. "This should be a wake-up call. A chance [of staying below 2 degrees] would be if we had a legally binding international agreement or major moves on clean energy technologies, energy efficiency and other technologies."

[Governments are to meet next week in Bonn](#) for the next round of the UN talks, but little progress is expected.

Sir David King, former chief scientific adviser to the UK government, said the global emissions figures showed that the link between rising GDP and rising emissions had not been broken. "The only people who will be surprised by this are people who have not been reading the situation properly," he said.

Forthcoming research led by Sir David will show the west has only managed to reduce emissions by [relying on imports from countries such as China](#).

Another telling message from the IEA's estimates is the relatively small effect that the recession – the worst since the 1930s – had on emissions. Initially, the agency had hoped the resulting reduction in emissions could be maintained, helping to give the world a "breathing space" and set countries on a low-carbon path. The new estimates suggest that opportunity may have been missed.

30 May 2011 Last updated at 20:33 GMT

Global carbon emissions reach record, says IEA



World leaders agreed last year to curb emissions and limit the rise in global temperature to 2C

Energy-related carbon emissions reached a record level last year, according to the International Energy Agency (IEA).

The watchdog says emissions rose again after a dip caused by the financial crisis in 2009, and ended 5% up from the previous record in 2008.

China and India account for most of the rise, though emissions have also grown in developed countries.

The increase raises doubts over whether planned curbs on greenhouse emissions will be achieved, the group says.

At a meeting last year in Cancun, Mexico, world leaders agreed that deep cuts were needed to limit the rise in global temperature to 2°C above pre-industrial levels.

But according to the [IEA's estimate](#), worldwide CO₂ emissions from the energy sector reached a record 30.6 gigatonnes in 2010.

The IEA's Fatih Birol said the finding was "another wake-up call".

"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," he added.

"Unless bold and decisive decisions are made very soon, it will be extremely challenging to succeed in achieving this global goal agreed in Cancun."

Record carbon emissions mean 2 °C rise ever closer

- 16:17 31 May 2011 by [Jessica Hamzelou](#)
- Magazine issue [2815](#). [Subscribe and save](#)
- For similar stories, visit the [Energy and Fuels](#) and [Climate Change](#) Topic Guides

Was [James Lovelock](#), creator of the Gaia hypothesis, right when he said it was [too late to prevent "apocalyptic" climate change](#)? That's one reading of the [International Energy Agency's latest estimates of energy-related carbon dioxide emissions](#), which hit record highs last year.

Despite the financial crisis, last year's emissions from power stations and transport surpassed 2009 levels by 1.6 gigatonnes, hitting 30.6 Gt. This is close to the 32 Gt per year the [IEA warns would cause warming of 2 °C if it is reached before 2020](#).

What's more, around 80 per cent of the predicted 2020 emissions from power stations are already "locked in" – from stations that are already built or under construction.

"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," Fatih Birol, chief economist at the IEA, [said in a statement](#).

So should policy-makers focus on adapting to the effects of climate change rather than trying to mitigate its cause? "We will need to mitigate," says [Simon Buckle](#) of the Grantham Institute for Climate Change at Imperial College London. "It is much more affordable." The focus now should be on speeding up the development of carbon capture and storage technologies, he adds.

In any case adaption might not be an option, says [Clare Goodess](#) of the University of East Anglia's Climatic Research Unit in the UK. "Beyond a 2 °C temperature rise some things become impossible to adapt to – like sea level rises in low-lying countries such as Bangladesh."

Emission control will be the key to limiting the amount of damage, she adds. "The further you go beyond 2 °C, the harder it is to adapt."