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BLOG
THE WORLD'S LEADING GREEN JOURNALISTS
ON CLIMATE, ENERGY AND WILDLIFE



Could an artificial volcano cool the planet by dimming the sun?

First major study of practicality of planetary-scale solar radiation management concludes it is a potentially cost-effective option



Dimming the sun by engineering the effects of an artificial volcano is a feasible and potentially cost-effective option to reduce temperatures on Earth, a report says. Photograph: AP

Dimming the sun by engineering the effects of an artificial volcano is a feasible and potentially cost-effective option to reduce temperatures on Earth, the first major study of the practicality of planetary-scale solar radiation management (SRM) concludes.

The authors, US aerospace company Aurora Flight Sciences, consider the challenge of lifting and releasing 1-5m tonnes a year of sulphur dioxide to altitudes approaching 100,000ft. This would create sulphate particles in the thin air and provide a partial shade to the sun's rays, potentially reducing temperatures 1-2C. But no attempt is made to quantify the potential benefits or the risks involved in the likely disruption of weather patterns on earth.

The easiest, but by far the most expensive, way to launch vast quantities of sulphur dioxide into the upper atmosphere would be via batteries of 16-inch naval guns, says the report. But to lift 5m tonnes of particles a year 100,000ft into the stratosphere might need 70m gun shots a year and could cost an astronomical \$700bn a year. Over 20 years, considered by many scientists the minimum needed to have a lasting effect on earth, this would be more than Africa and India together earn in a year.

Instead, the authors consider a far less expensive but technically more challenging way to lift and disperse 1-5m tonnes of sulphur particles to around 100,000ft. This would be to design and build a fleet of massive helium-filled blimps, costing \$8-10bn a year to run, with each blimp costing possibly \$500m. However, the technology of airships operating at this altitude is not developed.

The study, commissioned by the University of Calgary in Canada, was published 15 months ago but has received little attention so far. However, it shows how advanced SRM advocates are in their attempts to persuade governments to license large-scale experiments.

It was managed by the leading geoen지니어 Harvard University scientist David Keith, one of two administrators of Bill Gates's [Fund for Innovative Climate and Energy Research \(Ficer\)](#) which contributed \$100,000 to the study.

By far the most effective way to lift the sulphur, the study concludes, would be to adapt, or to build, a fleet of Boeing 747s aircraft. About 14 of these planes working round the clock from bases on or near the equator, might cost about \$8bn a year.

The study supports the views of scientists who argue that more experiments should be done into [geoengineering](#) to prepare a "plan B" if politicians and industry fail to find a way to reduce emissions in climate talks.

"The primary conclusion to draw from this feasibility and cost study is that geoen지니어 is feasible from an engineering standpoint and costs are comparable to quantities spent regularly on large engineering projects or aerospace operations.

"Aeroplane geoen지니어 operations are comparable to the yearly operations of a small airline, and are dwarfed by the operations of a large airline like FedEx or Southwest," says the study.

Critics of political attempts to reduce emissions have long argued that it would cost hundreds of billions of dollars of investment in low-carbon energy to achieve the same results.

To date, the uncertainty and inherent riskiness of large-scale solar radiation management have not been quantified.

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Bluecloud

6 February 2012 6:37PM



Holy sulphur bombs captain, I think think man's gone mad!

Next: Space cows to fart our way out of disaster! With an added bonus of charred beef raining randomly down for BBQ surprises from the Far Side.

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Bluecloud

6 February 2012 6:41PM

[Recommend \(45\)](#)



On a serious note, why not just cause a real super volcano? Can't be tooo hard. It's just a question of which continent we wipe out while doing so. Is it to be Yellowstone or Toba?

I can hear George Carlin laughing from his grave as I type.

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[Smith1867](#)

6 February 2012 6:55PM

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[Envmanager](#)

6 February 2012 6:57PM

Well I have heard some crazy ideas in my time, but that is seriously out there.... crazy crazy.

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[mike944](#)

6 February 2012 6:57PM

If we were going to geo-engineer the planet would we really want to make it any colder? If anything a warmer planet seems to be more supportive of life. Now with all the talk of weak solar cycles (cycle 25) perhaps we should be looking at ways to maintain or increase the earth's temperature. Anyway with the current cold snap in Europe killing hundreds I doubt there would be much support in Europe for cooling the planet.

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[MillibandOfBrothers](#)

6 February 2012 7:05PM

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[UnderminingOrthodoxy](#)

6 February 2012 7:06PM

Response to [Bluecloud](#), 6 February 2012 6:37PM

I was thinking more of the oxygen machines on ERB's Barssom. The last desperate relics of a dying civilization.

Joking aside, it may well come to this sort of nonsense. The human race shows no sign yet of taking action on a scale that might make a difference. How far will we travel up shit creek before we decide to turn back? Only then will we notice that we have lost the paddle.

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[mike944](#)

6 February 2012 7:06PM

Recommend (15)

Responses (2)

If we really wanted to release lots of sulphur dioxide into the atmosphere couldn't we just lift the current industrial restrictions on sulphur dioxide pollution? That would reduce industry costs whilst also pumping the atmosphere with SO2 for free.

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[Atomant77](#)

6 February 2012 7:11PM

[Recommend \(20\)](#)

[Responses \(0\)](#)

Is like a full PR campaign for GE is on. To answer the headline question, Yes, it could.

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A small group of leading climate scientists, financially supported by billionaires including Bill Gates, are lobbying governments and international bodies to back experiments into manipulating the climate on a global scale to avoid catastrophic climate change.

I do not like the sound of that however...

Concern is now growing that the small but influential group of scientists, and their backers, may have a disproportionate effect on major decisions about geoengineering research and policy.

..and we should be concerned. Only need to look at what's been done every time a small, powerful lobbying group with interests has a similar approach to resolving matters. A few gain money, a lot more suffer. Is this even democratic?

In the meantime, phasing out fossil fuels seems like will never happen and green techs keep getting f**ed up the rear end so they will never truly take off.

I wonder if Branson's fleet will be used for the spraying job...



[antipodean1](#)

6 February 2012 7:19PM

[Recommend \(37\)](#)

[Responses \(2\)](#)

This takes the phrase kicking the can down the road to a new low.

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To my mind theres the issues of;

- 1/ cost
- 2/ unintended consequences
- 3/ the necessity of continuing it indefinitely and therefore its grotesque unsustainability.

Why not just address the problem at its root?



[Bluecloud](#)

6 February 2012 7:26PM

[Recommend \(40\)](#)

[Responses \(1\)](#)

Response to [mike944](#), 6 February 2012 6:57PM

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If anything a warmer planet seems to be more supportive of life.

How warm do you want us to be? [The brutal logic of climate change](#) is that we have to reduce our impact fast, or it's game over. The planet is currently undergoing devastating change at a rapid rate due to our impact.

Chucking sulphur into the atmosphere is likely to prove extremely disastrous. We'd be messing about with a system that is already stretched to its limits. The logical approach is to reduce our impact, but we're not.

Instead wild technofix shots like this are offered as excuses for us to do nothing about reducing emissions. At best they will only temporarily stave off the inevitable effects of the rise of CO2 in the atmosphere, and at worst will wreck the planet. How much sulphur do we need to prevent 6°C?

As for the current cold spell, the debate last year made it clear that a changing climate means we're in for a rough ride. I think there is enough support for us all to start tackling the problem, don't you?



trojanwar

6 February 2012 7:31PM

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SynchronisedDogmas

6 February 2012 7:36PM

No problem. And anyone who worries about unintended consequences of messing with things even more than is already happening is obviously a wimp. After all, who cares about a 'dimmer' sun meaning lower levels of photosynthesis. Photosynthesis is for wimps, like those effete folks who go on and on and on about it removing carbon from the atmosphere, producing food, etc, etc, etc.

But seriously, there has in fact been plenty of consideration of possible downsides of geo-engineering to mitigate AGW impacts, [THIS being just one example / starting point](#), and with a useful reference list tagged on. But egos and (at least some high profile) engineers seem to get over-excited at the big toys for big boys stuff, without enough appreciation that "things are a bit more complicated than that".

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piffedoff

6 February 2012 7:37PM

Response to [antipodean1](#), 6 February 2012 7:19PM

Fair points. The sulphur dioxide option trundles on, no matter how often these points are made, however. Which tends to support the view that GE is going to be implemented at some point--if only because no other options seem to be any longer feasible.

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There are GE options, e.g. Salter's cloud ships, which don't pollute, can be switched off and amplify biosphere processes. Perhaps the penny will drop about such aspects climate intervention. At the moment the science and engineering boys are rubbing their hands and covering the backs of envelopes with lots of 'gee whiz' ideas--they need reining in before they really do unleash armageddon.

BTW Paul Crutzen, begetter of the sulphur solution, told me that he came up with the idea out of despair; any dispassionate review of the relevant numbers shows why he felt that despair.



donotdespisethesnake

6 February 2012 7:37PM

Response to [antipodean1](#), 6 February 2012 7:10PM

Why not just address the problem at its root?

You mean like an international binding agreement to reduce CO2 emissions? We've tried that, it will never succeed. Neither governments nor their people are willing to make real cuts in emissions, certainly no where near the cuts required.

People will only give up fossil fuels when they become too expensive. Unless a miracle happens, we are certain to exceed the 2 deg warming that is regarded as a damaging level. That train is leaving the station.

If in a few decades warming has reached damaging levels, will people not be obliged to cool the planet by geoengineering, however distasteful that is?

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piffedoff

6 February 2012 7:38PM

woops, 'aspects of climate intervention' in para 2 above.

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piffedoff

6 February 2012 7:38PM

blimey-- not 'woops' but 'whoops' above.

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Bluecloud

6 February 2012 7:40PM



Response to [mike944](#), 6 February 2012 7:06PM

If we really wanted to release lots of sulphur dioxide into the atmosphere couldn't we just lift the current industrial restrictions on sulphur dioxide pollution?

Cos it's got to go much higher, innit. But still it will come back down. One day.

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SO2 causes havoc in the troposphere. [Acid rain](#) is a problem that is well documented. And there's enhanced ocean acidification. What madness you propose.



[SynchronisedDogmas](#)

6 February 2012 7:43PM

Response to [mike944](#), 6 February 2012 6:57PM

The usual denialist suspects trundled out, *again*.

Ridiculous cant trying to sound reasonable on the one hand (warmer planet more hospitable for life? There must be less *obviously* deluded ways to display a lack of insight into the whole issue of AGW, surely?) and the entirely silly 'ooh, it's chilly out' canard.

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[mike944](#)

6 February 2012 7:46PM

Response to [Bluecloud](#), 6 February 2012 7:40PM

What madness you propose.

Clearly I was being sarcastic and pointing out just how ridiculous the idea is. You read my first comment so you know where I stand.

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[TerribleLyricist](#)

6 February 2012 7:47PM

Response to [Bluecloud](#), 6 February 2012 6:41PM

Spot on mate.

Besides, even if they spend billions and put enough sulphur, or water, up in the air to reflect solar radiation, this will only be a band aid; the real problem - CO2 - will still be accumulating.

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[Bluecloud](#)

6 February 2012 7:52PM

Response to [SynchronisedDogmas](#), 6 February 2012 7:43PM

But it works. It's bloody freezing outside! Ergo: No warming!

That's the dim association that mike944 wants to make because he's appealing to the idiot in our brains. We actually need this guy to act in this daft role as he demonstrates willful ignorance, and I'm sure he's not enamoured with the part he plays.

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[UnderminingOrthodoxy](#)

6 February 2012 7:52PM

Response to [mike944](#), 6 February 2012 6:57PM

If we were going to geo-engineer the planet would we really want to make it any colder? If anything a warmer planet seems to be more supportive of life.

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Now with all the talk of weak solar cycles (cycle 25) perhaps we should be looking at ways to maintain or increase the earth's temperature. Anyway with the current cold snap in Europe killing hundreds I doubt there would be much support in Europe for cooling the planet.

You might think that if we were going to geo-engineer the planet, we would plan it carefully in advance, do some scientific studies, set up computer models...

Fat chance.

How much of this fossil CO2 should we release for our first experiment?

Let's just torch the lot and see what happens.



belgrave

6 February 2012 7:53PM

Yes geo-engineering sounds really dodgy. If it were to show any signs of success it would just be used as an excuse to continue pumping out greenhouse gases. And it would do nothing to combat ocean acidification, deforestation and emission of other pollutants.

And yet, I have a little sympathy for these proposals because they seem to be born of desperation. It is now very clear that our dysfunctional political system(s) are incapable of delivering the greenhouse gas reductions necessary - especially when one considers the recent reports that arctic methane (both undersea hydrates and permafrost carbon stores) are showing strong signs of destabilising - this is a gas with 105 times the global warming potential of carbon dioxide (recent paper in Nature from Gavin Schmidt's group).

For all his faults, we need someone like Churchill who will tell it like it is "I have nothing to offer but blood, toil, tears and sweat". Instead, as in William Butler Yeats' poem, "The Second Coming" "The best lack all conviction while the worst Are full of passionate intensity"

God help us all (if s/he exists)!

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SteB1

6 February 2012 7:55PM

I think the world has gone insane, or be more precise the insane are running the assylum. On the one hand if you point towards some of the environmental problems you get overwhelmed by a fanatical gaggle of climate change deniers and anti-environmentalists trying to shout you down if you even dare mention any environmental problem. Apparently it's all just a left wing plot and everything's really hunky dory if only they could silence the "doommongers". If only the greens are out of the way and all that annoying red tape environment protection legislations is out of the way, then the unfettered free market will

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solve the problem, with more excess consumption. Even our government is getting in the act.

The next thing we here about are bonkers Dr Strangelove techno fixes that are supposedly going to to fix the problems which the anit-environmentalist trolls say don't exist. Even more confusingly is some of the anti-environmentalists back the techno-fixes for problems which they say don't exist.

Even George Monbiot has completely lost the plot after overdosing on Disney's 1950s propaganda fantasy fest "Our Friend the Atom".

When you read about plans to fire salvos of sulphur dioxide into the air with 16 inch naval guns, you know for definite that Dr Strangelove is in charge. Of course the biggest irony is that only a few decades back we didn't need 16 inch naval guns to fire sulphur dioxide into the air as we had loads of dirty great chimneys from the industrial revolution to do that for us. But London Smog, the Clean Air Act, and finally the late Fred Dibnah finished them off.

http://en.wikipedia.org/wiki/Great_Smog_of_1952

http://en.wikipedia.org/wiki/Clean_Air_Act_1956

Never mind searching space for intelligent life, it might pay to start searching the established for intelligent life. Although my impression that there is no shortage of intelligent life, it's just lacking in the upper echelons of the establishment. We have a peculiar system where the higher up the ladder someone rises, the more the stupid they are likely to be. Mabye its a requirement that you have to have a frontal lobotomy before you rise above a certain level in our society.

It can all be summed in one word **DENIAL!**

The human capacity for denial knows no bounds. Especially when you are in a position of influence and power. All because the established order want to carry on with their demented over-consumption, and deny their addiction is the problem.

Will the last intelligent life left in the established order please turn the lights off, because the lights are on, but no one's in.



mike944

6 February 2012 7:55PM

Response to [SynchronisedDogmas, 6 February 2012 7:43PM](#)

the entirely silly 'oooh, it's chilly out'

In case you didn't notice, Europe is frozen under what many papers are calling a "record cold snap" and it has killed hundreds already. Never mind there are more important issues to worry about like "man made global warming".

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IGiveUp

6 February 2012 7:57PM

Two words.

[Recommend \(11\)](#)

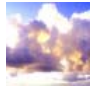
[Responses \(0\)](#)

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Fucking Dumb.

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The knee bone's connected to the thigh bone, the thigh bone is connected to the...you get the idea...



Bluecloud

6 February 2012 7:57PM



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[Responses \(1\)](#)

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Response to [mike944, 6 February 2012 7:46PM](#)

Sorry mike944, I read your first post again and it only confirmed my last on post on this thread.

You are associating a cold snap in Europe with the climate, which is heating up.

It's about the climate mike, not the weather.

Big fail mike.



joshthedog

6 February 2012 8:00PM

[Recommend \(5\)](#)

[Responses \(0\)](#)

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Obviously the first thing that springs to mind is unintended consequences, and as the article says:

"But no attempt is made to quantify the potential benefits or the risks involved in the likely disruption of weather patterns on earth."

So... it is an idea very similar to E L Wisty's idea of a tablet that you drop into water which just turns it into petrol. A brilliant idea... but....



gixxerman006

6 February 2012 8:04PM

[Recommend \(19\)](#)

[Responses \(0\)](#)

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Just out of interest, has anyone worked out yet what happens when we make our oceans die?

We're already acidifying them at an alarming rate, chucking in as many hormones as imaginable (it's so bad it is making living animals change sex, ffs!), using them as a cesspool and all the world's major oceans now have an area where, thanks to currents and flows (the gyres), there are growing garbage patches several hundreds of miles square.

That this matter of fact is rarely, if ever, mentioned whilst nonsensical & highly dangerous ideas like this one get air-time is symptomatic of the incredible attitude of our media & journalists.

I couldn't care less if people 'believe in' AGW, the fact is simply preferring a sustainable & clean world would be reason enough to stop the environmental damage which is growing at some speed.

But I guess to certain morons that is just 'enviro-fascism'.

Our kids are being left a pretty poor inheritance thanks to the greed of a minority.

(oh & btw sulphur dioxide has been found in small but significant quantities - we're told it doesn't need to be much - at Venus. It worked out really well there eh?)



Bluecloud

6 February 2012 8:04PM



[Recommend \(19\)](#)

[Responses \(1\)](#)

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Response to [mike944](#), 6 February 2012 7:55PM

In case you didn't notice, Europe is frozen under what many papers are calling a "record cold snap" and it has killed hundreds already.

I've noticed mike.

I've also noticed that heat waves kill far more people. Remember 2003? 30,000 wasn't it? In Europe alone. Then add the droughts mike. Africa is also on this planet. Count the dead while you go to sleep — It's a chilling thought.



OfficeEd

6 February 2012 8:05PM

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Shouldn't we be harnessing the power of the sun, and not dimming it?



SovereignT

6 February 2012 8:05PM

[Recommend \(6\)](#)

[Responses \(0\)](#)

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What right has anyone or any group to mess with things they know little about and that could kill us all? NONE! It's the equiv. of them doing brain surgery with a spoon. These people should be put in a psychiatric hospital for life. The chemtrails must not be working fast enough for them. Google 'what in the world are they spraying?'



fractals

6 February 2012 8:11PM

[Recommend \(13\)](#)

[Responses \(0\)](#)

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we don't know who struck first - us or the machines - but we do know it was us who scorched the sky.



oldbrew

6 February 2012 8:13PM

[Recommend \(13\)](#)

[Responses \(0\)](#)

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Hold on a minute. They want to stick sulphate particles in the air?

[Arctic haze](#)

Quote: *Sulfur aerosols in the atmosphere affect cloud formation, leading to localized cooling effects over industrialized regions due to increased reflection of sunlight. During the Arctic winter, however, there is no sunlight to reflect. In the absence of this cooling effect, **the dominant***

effect of changes to Arctic clouds is an increased trapping of infrared radiation from the surface

In other words: according to global warming theory, more sulphur = more ice melt.



Nelthon

6 February 2012 8:15PM

[Recommend \(8\)](#)

[Responses \(1\)](#)

Response to [SynchronisedDogmas, 6 February 2012 7:36PM](#)

[Report](#)

After all, who cares about a 'dimmer' sun meaning lower levels of photosynthesis.

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Paradoxically it can lead to *more* photosynthesis since light is scattered better (typically offset by cooler temperatures, though).

The suggestion is still fucking crazy, however.



mike944

6 February 2012 8:18PM

[Recommend \(8\)](#)

[Responses \(0\)](#)

Response to [Bluecloud, 6 February 2012 8:04PM](#)

[Report](#)

I've also noticed that heat waves kill far more people. Remember 2003? 30,000 wasn't it? In Europe alone.

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[There were an estimated 25,700 excess winter deaths in England and Wales in 2010/11](#)

That is 25,700 in just England and Wales in one year. It was a similar figure the year before that and the year before that, etc. I hate to imagine what the yearly figure is across the whole of Europe. The cause isn't "weather" that is climate and a cold climate at that.



oldbrew

6 February 2012 8:18PM

[Recommend \(3\)](#)

[Responses \(1\)](#)

Response to [Bluecloud, 6 February 2012 7:57PM](#)

[Report](#)

You are associating a cold snap in Europe with the climate

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He said record cold snap. I think that means it's a bit unusual, not just any old cold snap.



SirChevalier

6 February 2012 8:25PM

[Recommend \(12\)](#)

[Responses \(0\)](#)

Could someone please point out the part of the article that explains how pumping sulphur dioxide into the atmosphere reduces the impact of ocean acidification?

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Ta.

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Bluecloud

6 February 2012 8:30PM

[Recommend \(12\)](#)

[Responses \(1\)](#)



[Report](#)

Response to [oldbrew](#), 6 February 2012 8:18PM

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Of course it's unusual, what's wrong with you lot? It's a bloody record. Record hot & record cold. Now what does that tell you? Systems theory anyone? One of the low punches many never expected were record lows resulting from climate chaos.

Well here we have it: Last year Europe froze while the Arctic experienced temperatures much higher than usual. Who'd a think it? Mike944 can count the dead from the record cold last year and wonder just what the hell is going on? That's his job.



[oldbrew](#)

6 February 2012 8:30PM

The authors, US aerospace company Aurora Flight Sciences, consider the challenge of lifting and releasing 1-5m tonnes a year of sulphur dioxide to altitudes approaching 100,000ft

Far more sulphur dioxide than that is already released into the atmosphere by coal burning. So just wait a few years while China ramps up its coal production and....

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[SynchronisedDogmas](#)

6 February 2012 8:32PM

Response to [Nelthon](#), 6 February 2012 8:15PM

Thanks for that. My bad. Must try harder.

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[oldbrew](#)

6 February 2012 8:34PM

Last year Europe froze while the Arctic experienced temperatures much higher than usual. Who'd a think it?

Exactly, it wasn't foreseen. We were all supposed to be warming according to the IPCC report. Whatever next?

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[Responses \(0\)](#)

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[evolutionary](#)

6 February 2012 8:35PM

The forces of production (\$\$\$) are taking over the argument as usual. The obvious metaphor is the over fed and over worked individual who ends up in hospital due to an out of balance immune system and is filled with drugs with various side effects. The problem is vested interests in fossil fuel industry blocking change, the same companies now intend to profit from an unsustainable 'solution'... as for the side effects...they will leave that for the excluded and poor, nature is included in that category but nature is the source of all life, they should not forget that.

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[UnderminingOrthodoxy](#)

6 February 2012 8:39PM

[Recommend \(19\)](#)



Response to [mike944](#), 6 February 2012 7:55PM

From various sources:-

Last Winter

In the UK it was the coldest December ever, since Met Office records began in 1910

Last Spring

BRITAIN'S super spring is the hottest since records began 351 years ago – and there is another round of glorious sunshine on the way this week.

Last Summer

Despite the summer being disappointingly cool, temperatures this past year were a degree warmer than the period between 1971 and 2000, figures from the Met Office show today.

Last Autumn

It was set at 14:42 BST in Gravesend, Kent, beating the previous record of 29.4C (84.9F) recorded on 1 October 1985, in March, Cambridgeshire.

Notice anything unusual about all this weather?
I'll give you a clue - all that record breaking means it is unusual.
Almost as if the climate were changing...

[Responses \(3\)](#)

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[oldbrew](#)

6 February 2012 8:45PM

Response to [UnderminingOrthodoxy](#), 6 February 2012 8:39PM

Almost as if the climate were changing...

Maybe there are too many aerosols in the atmosphere already, without m*d scientists adding any more?

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[Responses \(1\)](#)

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[AnotherBee](#)

6 February 2012 8:48PM

Response to [MillibandOfBrothers](#), 6 February 2012 7:05PM

Let me try again.

Cheap (relatively), logical, controllable, and reliable.
Everything the warm-enviro-nazis hate.

Cheap? Unless, of course, you account for development costs and unforeseen consequences.

Logical? Isn't it more logical to stop doing the thing that's causing the problem rather than play with something which will tackle the symptoms, has to be done continuously and has unforeseen consequences?

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Controllable? Now, as I understand the second sentence of your post, you are accusing the environmental lobby of wanting to impose solutions. This is proposed as a global solution imposed on the world. Who does the imposition? Who controls them? How is the dispersal of sulphates controlled?

Reliable? Yours is a looking-glass universe, where an untested solution is more reliable than removing the cause of the problem. What's the effect of sulphates on rainfall? Is that reliable?



mike944

6 February 2012 8:50PM

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Response to [Bluecloud](#), 6 February 2012 8:30PM

Well here we have it: Last year Europe froze while the Arctic experienced temperatures much higher than usual. Who'd a thunk it? Mike944 can count the dead from the record cold last year and wonder just what the hell is going on? That's his job.

Are you claiming that last year's winter mortality rate figures were unusual?



LordKobel

6 February 2012 8:51PM

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Response to [mike944](#), 6 February 2012 7:55PM

what many papers are calling a "record cold snap"

That's because they're really shitty papers!



UnderminingOrthodoxy

6 February 2012 8:51PM

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Response to [oldbrew](#), 6 February 2012 8:45PM

Maybe there are too many aerosols in the atmosphere already, without m*d scientists adding any more?

All right, I'll stop juggling these cans of hairspray then.

... gets coat

Comments on this page are now closed.
