Search For Solutions: Stratospheric Sulfur Aerosols

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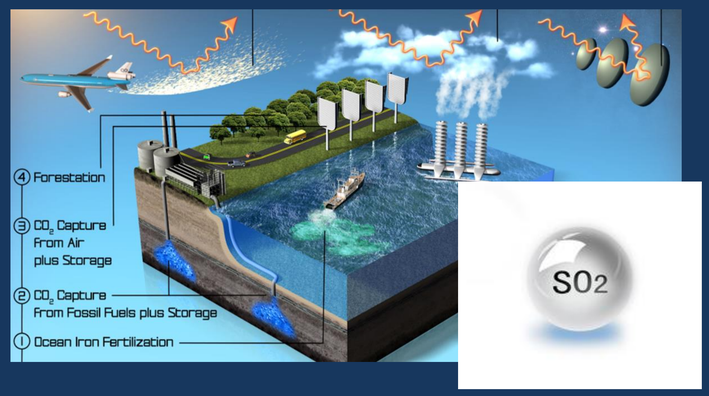
What are Stratospheric Sulfur Aerosols?

This is a process where sulfuric aerosols are dumped into the stratosphere in uniform layers, to act as a reflective element that blocks out some sunlight hitting the earth

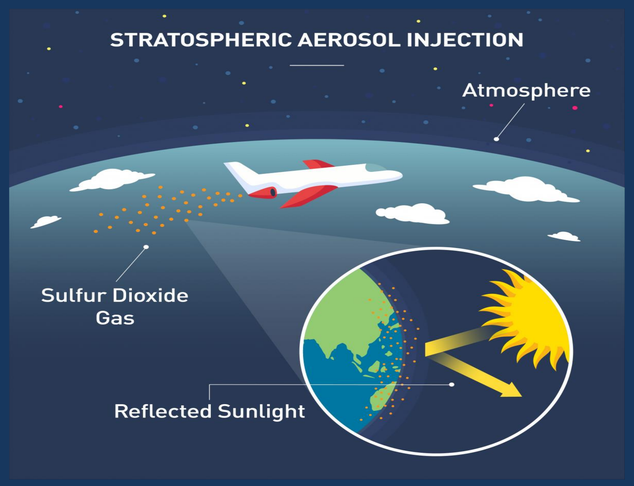
Note: This is a patch-up; it does not solve many of the problems with global warming, nor does it address the root causes. It simply mitigates the problem

How does it work?



- An aerosol (most likely SO_2 – sulfur dioxide) will be injected into the stratosphere via. planes, balloons, or artillery.
- Will have to be put ALL over the globe – requires cooperation of a majority of nations around the globe.
- SO_2 will eventually return to the earth in small quantities, so there will have to be constant maintenance of this process.

Effects on Climate Change



- The sulfur aerosols will in general scatter incoming solar radiation and cause a cooling effect
- Aerosols could increase the albedo of the cloud by creating more ‘cloud droplets’, further reflecting incoming sunlight in a more natural way.
- Best done on ‘dark clouds’ for greatest effect

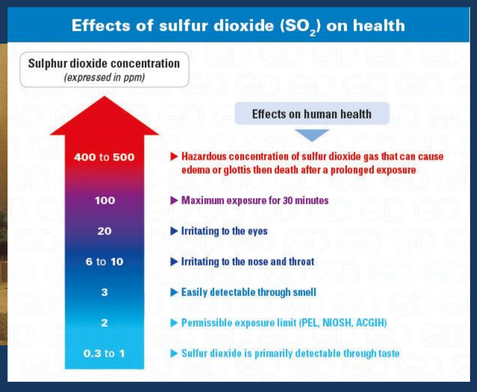
Benefits of this method

- Cools the planet
- Reduce or reverse sea and land ice melting
- Reduce or reverse sea level rise
- Easy to implement (this method is much cheaper and more viable than any other of the higher-end methods proposed)

Requirements to Accomplish

- A global agreement, between almost all countries, need to be formed
- 2.25 billion dollars a year (to initialize and maintain)
- Over 4000 flights total per year to put up and maintain the aerosol cover

Critiques



- Unfeasible to obtain ‘global cooperation’
- Danger of failure – especially with sulfur dioxide
- Unknown effects on environment due to ‘Global Dimming’, and potential changes to local weather

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