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A Pollutant's Tale: Climate Special Edition

Questions	Response from presenters
Will solar energy and wind energy be enough to supply the world with electricty after we have run out of fossil fuel?	For some regions of the world, solar and wind could provide a substantial part of the energy required. Globally, other sources of energy are required. Generating energy where there is high wind and /or high solar radiation could be sufficient for the world's needs numerically but transporting that energy across the planet is unfeasible. Energy losses would be huge and infrastructure required would require much investment and the environmental impact would be large.
Is there anyway to decrease green house gases (GHG)?	The main mechanism is to reduce emissions, reduce fossil fuel burning, improve agricultural practices, repurpose materials so that they can be used over and over again or recycled easily. There are methods to remove GHGs from the atmosphere and these are being investigated to see whether they can be scaled up. Adopting the new technologies suggested will decrease GHG emissions.
If the ozone layer is like a blanket for the Earth, how do we get winter or fall where it's cold?	The Ozone layer is a global shield for UV radiation, GHGs are the thermal blanket. The main driver of temperature on the Earth's surface is solar heating and due to the Earth's tilt, the two hemispheres receive different amounts of heating at any one time (seasons) and at both poles they experience no heating (polar winter) for months. Therefore, the seasons are due to the Earth's tilt and would persist irrespective of the level of GHGs.
What is dry ice used for?	Dry ice is both a reagent for some chemical reactions but is mainly used as a convenient coolant. It can be used to make drinks fizzy. Solid Carbon dioxide (Dry ice 'cardice') sublimes to gaseous CO_2 at -78°C so care must be employed in its use. The gaseous carbon dioxide formed is an asphyxiant so it must be used in well ventilated areas.
What are some of the ways we, as students, can reduce the CO2 usage?	There are many ways that we can reduce our CO_2 contribution, here are some examples. Turn off lights at home when the room is not being used, turn off appliances when not in use (not just standby). Do a school energy audit, there will be things that your school can do to reduce its energy usage, that will save money and reduce its carbon footprint. Food is a key area, food miles, buy local produce, food types? Certain foods have a very high carbon footprint. Cycling or walking to school/friends/the shops rather than travelling by car.

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Is there a way to rebuild the ozone layer?	Yes, by banning CFCs and phasing in and out replacements that have a lower ozone depletion potential leading to compounds that pose no threat to the ozone layer. This is what has happened and the plot shows the change in the ozone column minimum over Antarctica. The minimum level is now increasing, i.e. the hole is decreasing as the level of the banned CFCs is going down and the replacement species, HFCs and HCFCs are also beginning to be banned and replaced.