12 solutions can limit global warming

What can we do to limit global warming? Children around the world are on School Strike demanding action on climate change. Town, city and local councils in the UK and the World are declaring Climate Emergencies, and the head of the UN is asking world leaders for greater ambition in their plans to reduce CO2 emissions. The Paris Agreement "is meaningless without ambitious action" said the UN Secretary-General Antonio Guterres on 18 March 2019. What can we as individuals do to help?

This 5th and latest Point of View from Saving Our Planet sets out 12 climate solutions. Many climate solutions are easy for people to do themselves. Others require action by Governments, but these also need public support.

As the Head of the UN says, there has been a collective failure by his generation which has "failed to respond properly to the dramatic challenge of climate change."

By bringing together these 12 solutions, our purpose is to set out a vision of how together we can tackle global warming. Will you join us?

Established in 2016, Saving Our Planet is an International NGO with the mission to inspire and enable people to work together to save our planet from climate change. Honorary Members are George Monbiot who writes for The Guardian and Brice Lalonde who was French Minister of Environment 1988-1992 under President Mitterrand. **

Summary

12 climate solutions together have the power to limit global warming.

7 climate solutions are easy for people to do themselves. These include: personally to go Carbon Neutral, to plant trees to take up CO2 emissions, to reduce personal CO2 emissions, to switch energy supply based on lowest CO2 footprint, and to reduce meat and dairy consumption.

5 climate solutions require action by Governments, with our support.
Among the highest priorities are to shut down coal fired power plants and to implement Carbon Pricing. Also it appears highly unlikely that 1.5^0C can be achieved without relying on nuclear power, because it's very low CO2 and - unlike solar and wind – nuclear power is available 100% of the time. All IPCC scenarios for 1.5^0C include nuclear power. The decision by Germany prematurely to shut down nuclear power stations has created around 88 million tonnes of additional CO2 per year for the last 8 years, which will cause Germany to fail to meet its CO2 emission targets in 2020. Early or partial closure of other nuclear power stations, for example in France, would have a similar negative impact on global warming, at the rate of about 8 MtCO2 per year per GW of retired nuclear power plants which are not replaced by near-zero emissions power sources. Other countries like France, Belgium and the UK are falling behind their coal exit strategy for lack of a sensible plan to replace coal power plants with zero-emissions, low CO2 budget power sources such as nuclear, hydro and wind power.

The UN Secretary General is bringing world leaders together for a Climate Action Summit in New York in September 2019. Let's build momentum around these 12 climate solutions and get them tabled for discussion and action.

Solutions with the power to stop Climate Change

A) 7 Climate Solutions for Individuals

Here are 7 proven climate solutions many of which are easy for individuals, organisations and small businesses to undertake themselves:

1) **Go Carbon Neutral by planting trees**. The potential is for people to plant trees to offset 100% of their CO2 emissions, so they personally go Carbon Neutral. **N0CO2** is the campaign from Saving Our Planet which makes it easy for people to remove their CO2 footprint by planting trees. See www.n0co2.org Others have campaigns to plant trees and sell carbon offsets for specific activities, such as air travel. What is different is we encourage people to plant enough trees to remove ALL their CO2 emissions for every year the trees are growing. There is sufficient land available worldwide to re-plant trees for 700 million people on a first-come-first-served basis to remove 100% of their CO2 emissions.
    a. To remove the UK and EU average CO2 emissions of around 7 Tonnes of CO2 equivalent per person per year, we have calculated people need to plant 1,750 trees per person. For people living in US, Canada and Australia where the average is around 16 Tonnes CO2 equivalent per year, each person needs to plant 4,000 trees.

    b. To plant all these trees is a much lower cost than you might expect. For those in the UK the price is around 17p per day, for the EU around €0.19 and for those in the US around USD $0.51 per day - assuming costs are spread over 3 years. See www.n0co2.org or http://bit.ly/n0CO2fr

The potential of afforestation and reforestation is to remove around 9% of worldwide CO2 emissions. Experts have estimated about 500 million hectares could be available for the re-establishment of forests on lands previously forested, but not currently used productively, and that this could sequester at least 3.7 GtCO2 per year for decades. [Source IPCC SR15 Report 8 October 2018 Chapter 4 page 4-47 quoting Houghton et al, 2015].

2) **To reduce rainforest deforestation.** The potential is to reduce around 10% of global CO2 emissions. In 2017, land area the size of Italy was deforested. There are multiple causes including both legal and illegal logging, and clearing land for palm oil plantations, for cattle and to grow crops. Efforts to stop deforestation are at the level of the UN and National Governments. What can individuals do? Support campaigns to stop deforestation and NGOs such as Cool Earth, who work alongside rainforest communities to halt deforestation.

3) **Switch to clean energy: clean electricity, heat pump, solar**
Low carbon electricity can be supplemented with a heat pump. In southern latitudes, solar can be an electricity supplement. Sweden, Norway, Switzerland and France have low carbon electricity due to heavy usage of nuclear and hydroelectric power, emitting less than 50 g CO2/kWh, and are ideal environments for heat pumps. In the UK, households whose electricity supplier gets 50% of its power from gas and coal can switch to a supplier that uses low carbon-emitting sources such as solar, wind or nuclear.

   In some countries, you can sell your solar electricity to the grid. Potential CO2 savings for household electricity and hot water are around 10%, plus a further 20% if you are replacing gas central heating with a heat pump. Under ideal conditions, heat pumps should give heat equivalent to 2-4 times the electricity they use.

4) **Electric Vehicles and Electric Motors.** While the amount of CO2 savings will depend on the energy source used for charging, an all-electric car using low carbon electricity should save around 20% of average CO2 emissions. Additional benefits are less pollution, particularly in town centres.

5) **Migration of Diet away from Meat and Dairy.** Important contributors to greenhouse gases are beef and lamb because cattle and sheep produce methane emissions which contribute powerfully to global warming. Individuals can reduce CO2 as each additional day of vegetarian diet saves the equivalent of about 1 kg of CO2. Each additional vegan day saves the equivalent of nearly 2 kg of CO2. Overall some 10% of CO2 emissions come from agriculture, which will need action by Governments to reduce it.

6) **Reduction of CO2 emissions.** In addition to all the other actions, there is potential is for individuals to reduce CO2 emissions in common-sense ways: turn down the heating, avoid electric or gas powered clothes dryers, hair-dryers, hand-dryers and leaf-blowers (unless running on non-CO2-emitting power),

walk/bike where possible, use public transport rather than private vehicle where possible, minimize air travel, share car travel and maximise recycling and re-use of products and materials.

7) **Support action to manage Population Growth.** Global population is currently rising at around 1% per year. Every additional person will potentially over time emit the world average emissions which is currently around 5 Tonnes of CO2 per person per annum. Even though there is a remote chance that this average will eventually fall back to more sustainable levels, such as 2 tCO2/year, it's impossible to forecast when this might be achieved. In the meantime, support one of the charities working in this space. A UK charity is Population Matters https://populationmatters.org which is supported by David Attenborough.

B) **Solutions to Climate Change where individuals can demand, encourage and support action by Governments**

These are 5 climate solutions where individuals can make a difference by demanding, encouraging and supporting action by Governments and other parties:

8) Demand that Governments commit to keep global warming to 1.5^{0}C maximum. Contact your national and local politicians to demand that you want them fully to commit to keep global warming to 1.5^{0}C maximum Because the IPCC SR15 report dated 8 October 2018 found that limiting global warming to 1.5^{0}C presents substantially less risk of uncontrolled warming than if global warming were allowed to reach or even exceed 2C. **Saving Our Planet advocates climate accountability of Governments and community leaders worldwide.**

9) **Require that Governments reduce the carbon intensity of electricity generation and domestic gas**. In the UK today around 50% of electricity is still generated from fossil fuels, and in Germany around 80%. The potential worldwide is to save almost all of the 25% annual CO2 emissions from electricity generation, and at the same time to grow capacity to meet increased demand for example as cars transition to electric. Individuals can urge their government representatives to oppose coal, gas and oil – particularly coal as it is 5x more polluting than gas - and instead support solar, wind, geothermal, heat pumps and nuclear power - which all creates very low CO2 emissions. Nuclear power emits almost no CO2 emissions while in operation – in France as low as 6 gCO2/kWh - thus providing the largest low-carbon grid worldwide. Individuals can also urge their Governments to support pilot projects for Carbon Capture, Utilization and Storage (CCUS).

Domestic use of natural gas for heating and cooking is responsible for around 25% of average household CO2 emissions. The opportunity is to replace this with low carbon electricity or for households to have their own heat pump.

We also invite people to support the petition Exit Coal Now from Saving Our Planet, on www.exitcoalnow.org

10) **Require that Governments put in place Carbon Pricing, for example** a Carbon Fee and Dividend. For example, we calculate that a Carbon Price of $120 per Tonne of CO2 would add about $0.30 per litre of petrol/diesel, ie about 23p per litre. (Note that 1 litre of diesel or petrol emits around 2.5kg of CO2). This could be done as early as 2020.

    As part of implementing Carbon Pricing, Governments must also remove subsidies and tax breaks on fossil fuels, because worldwide these are said to be worth over $500 billion per annum!

11) **Require that Governments electrify transport by 2030 rather than by 2040.** Cars, buses and lorries are responsible for around 15% of global CO2e emissions from fossil fuels. The potential is to reduce most of these emissions. The opportunity is to support initiatives to electrify as much transport as possible by 2030. Governments in the UK and France have committed to stop the sale of new petrol and diesel cars by 2040, but this is at least 10 years too late. Additional benefits of electric vehicles and motorbikes are to reduce pollution in towns and cities, which is harming health, particularly of children.

    Government initiatives to increase fuel efficiency and performance standards, if implemented as a consistent strategy, can over time deliver significantly more efficient and cleaner technology in the fuel economy of vehicles, ships, aircraft and in the fuel efficiency of buildings and industry.

12) **Require that Governments reduce CO2 emissions from buildings, industrial processes, and building materials, and support research into CO2 capture and storage.**

    a. Buildings and their construction are responsible for around 32% of energy consumption. The potential is to save 10 percentage points from less energy use, and another 10 percentage points from alternative construction methods and materials. [Source: Page 4.3.3.2 of https://www.ipcc.ch/site/assets/uploads/sites/2/2019/02/SR15_Chapter4_Low_Res.pdf

    b. Industrial Processes are responsible for around 38% of global emissions. The potential is to reduce this by around two thirds.

    c. CO2 capture by Carbon Capture and Storage (CCS) has significant potential. But, as at 2019, it is not yet deployed anywhere on an industrial scale and needs additional investment and research. The IPCC Report SR15 dated 8 October 2018 shows scenarios with significant CCS. In pathways limiting global warming to 1.5°C with limited or no overshoot, Bioenergy with CCS (BECCS) deployment is projected to range from 0–1, 0–8, and 0–16 GtCO2 yr-1 in 2030, 2050, and 2100.

    d. Initiatives are under way to capture CO2 permanently for use in building materials as part of walls, floors, cladding and concrete. Examples are

CarbonFiberStone from TechnoCarbon Technologies France (TCTF). See www.TCTF.eu

Seeking Collaboration to multiply our impact

Forward this to your friends and contacts

Please forward this to your friends and contacts so they can join in too. And post yourself on Facebook and Twitter about this using #12ClimateSolutions.

We invite organisations and individuals to support this initiative.

We will all make a bigger impact if we work together. Saving Our Planet therefore invites all to support this initiative. We invite individuals to join Saving Our Planet, and organisations with similar aims to partner with us.

Go Carbon Neutral with N0CO2.

We also invite all to go Carbon Neutral by planting trees. See www.n0co2.org

Next Point of View before UN Climate Summit on 29 September 2019 in New York.

The UN Secretary-General Antonio Guterres will convene a UN 2019 Climate Summit on the theme 'A Race We Can Win. A Race We Must Win' - see http://sdg.iisd.org/events/un-2019-climate-summit/ Saving Our Planet aims to issue a new Point of View in advance of this UN Climate Summit. If your organisation would like to contribute or be part of this, please email us.

**** Saving Our Planet**

Solutions to Protect Our Planet. Together we can stop climate change

Saving Our Planet is an International NGO registered in France as Charity Number W751235109. See www.savingourplanet.net

Our mission is to inspire, energize and enable the entire community of humans to work together to save the planet, and to convince World Leaders to make the fight against climate change their number one priority. Honorary Members are:

- George Monbiot, a writer known for his environmental and political activism who writes for The Guardian and is the author of a number of books about Sustainable Development.
- Brice Lalonde who is President of EdEN, an NGO about building the low-carbon power mix in France and Europe, former French Minister of Environment 1988-1992 under President Mitterrand and French Ambassador for climate change negotiations 2007-2011.

This content is based on the Saving Our Planet submission dated February 2019 to the UNFCCC Marrakech Partnership High-Level Champions of Global Climate Action.

Stephan Savarese, President, Saving Our Planet
Contact: info@savingourplanet.net
www.savingourplanet.net
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