

9 things you can do right now to tackle climate change

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Here is a list of the nine most important things individuals can do on their own, right now, to reduce their carbon emissions and help tackle climate change.

1. Food Waste

Globally 1.3 billion tonnes of edible food is wasted every year. That is equivalent to the food produced by 28% of all agricultural land. It takes all sorts of resources - fertiliser, water, machinery, services, processing, transport, storage, packaging, electricity and more to produce that food.

It is \$550 billion per year down the drain and accounts for one eighth of global greenhouse gas emissions. If food waste can be cut in half it would save 70bn tonnes of carbon dioxide emissions by 2050.

2. Plant Rich Diet

Changing diet is a difficult and controversial subject. But the facts speak for themselves for those who want to consider it. If the world's cattle were a nation on their own, they would be the third highest emitter of greenhouse gases after the United States and China.

It is estimated that the carbon footprint of a vegan diet is about one third of the carbon footprint of a meat-based diet. The emissions saved with a vegetarian-type diet including cheese, milk, and eggs could be as much as 60%.

3. Rooftop Solar

No moving parts, no fuel required, and they produce clean energy for years and years. What's not to like about photovoltaic solar panels?

They are getting cheaper all the time. They work on daylight rather than heat from the sun. Even in Ireland the investment required will pay off after a number of years.

After that it is free electricity all the way. It is estimated that rooftop photovoltaic solar could generate as much as 7% of the world's electricity by 2050 and save \$3.4 trillion in energy costs in the intervening 30 years. Time surely to get in on the act.

4. Don't Burn Peat

Bogs in Ireland cover about 17% of our land area, but we have been harvesting them for peat to heat our homes for over a thousand years. ESB has just decided it's a dead loss to burn it to generate electricity. It's simply not efficient, and the carbon emissions per unit of heat generated are the highest of all fuel sources.

Only about 3% of the earth's land surface is accounted for by peatland. These unique ecosystems are second only to oceans when it comes to storing carbon. Undisturbed bogs have a carbon content of about 50%.

Ireland should be punching well above its weight on this front since we have almost six times more bogs than the global land average. It's time to stop pillaging our bogs and start restoring them instead. There are far better, cleaner, more carbon friendly and less backbreaking ways to heat our homes.

5. Electric Vehicles

They are silent, powerful, and very cheap to run. Of course there is a carbon footprint involved in driving electric cars. Especially if the company supplying the electricity uses gas, coal, or other fossil fuels to generate electricity as is the case in Ireland. But even so, the carbon footprint of driving electric is at least 50% lower than driving an internal combustion engine.

And as ESB continues to modernise, and we move steadily towards the national goal of having 70% of our electricity generated from renewable sources, the carbon footprint of driving electric will continue to fall.

Remember too that everyone who has ever taken a spin in an electric car says they are brilliant to drive. The batteries are getting better and better with some cars now capable of driving more than 300km before needing to be recharged. If 16% of global car drivers switch to electric vehicles by 2050 it could save as much as 10bn tonnes of carbon dioxide emissions.

6. Insulation

This one is a "no brainer". It's one of the most cost effective and practical ways of making homes more energy efficient and comfortable. It will ensure lower energy bills, ensure less heating is required, keep out moisture, and even improve air quality. All of that will deliver a significant reduction in greenhouse gas emissions from your home. Generous grants for insulation are available from the Sustainable Energy Authority of Ireland.

7. LED Lighting

If you haven't made the switch to LED lighting bulbs yet then there is only one question you need to answer. What the heck is keeping you? They are just brilliant.

Three Japanese scientists won the Noble prize in 2014 for inventing these magic little high-brightness "light emitting diodes". This is really modern technology. These bulbs don't blow (out) like the old fashioned filament bulbs did - they actually last for years and years and years.

They use just a fraction of the electricity to deliver the same amount of light - in fact they use 90% less electricity which means a massive reduction in the carbon footprint of a light bulb. They don't take ages after you switch them on to reach their full brightness level which was one of the drawbacks of the compact fluorescent bulbs that were all the rage about a decade ago.

LED lighting is simply an amazing gift from modern science to you and to the environment. Just go for it!

8. Public Transport

Transport accounts for almost 20% of greenhouse gas emissions in Ireland and that percentage is growing very fast. Of course, not everyone has good options or choices when it comes to public transport. It can be slow, expensive, sometimes unreliable, and often downright frustrating. And in some areas it is non-existent. But without doubt there have been, and will continue to be, some significant improvements in the availability of mass transport options in some areas, particularly in the Dublin region and some larger towns.

It is all about increasing livability and sustainability and reducing congestion within our urban areas while reducing our carbon footprint at the same time. Driving a car, or hailing a taxi, may be convenient in the short-term but both are expensive ways of getting around. And in the long run the damage inflicted on the environment by the greenhouse gas emissions of a single car journey will last a thousand years. Because that is about as long as the resultant carbon dioxide emissions will hang around in our atmosphere, continually warming our planet, disrupting the climate, and destroying natural ecosystems. Public transport is expensive to provide. But it is a very valuable thing to be able to avail of. Let's use it.

9. Heat Pumps

When it comes to energy efficient ways for keeping our homes warm heat pumps are head and shoulders above all other technologies. This is old technology, tried and tested, been around for donkeys years, so it's foolproof. Just like a fridge, heat pumps have four key components - a compressor, a condenser, an expansion valve, and an evaporator. However, they operate in the reverse way to a fridge, pulling heat from the air outside, amplifying it by compressing and then channelling that amplified heat into radiators, under floor heating, or using it to heat the water.

The amazing thing is that no fuel is required to generate this heat because the heat already exists in the outside air around us. It simply compressed and then channeled to where we want it.

What is required is a relatively small amount of electricity to operate the four "fridge-in-reverse" components. When this is combined with renewable energy sources for the electricity used, and also when the building is insulated or structurally designed for energy efficiency, then heat pumps could eliminate nearly all the carbon emissions from heating our homes.