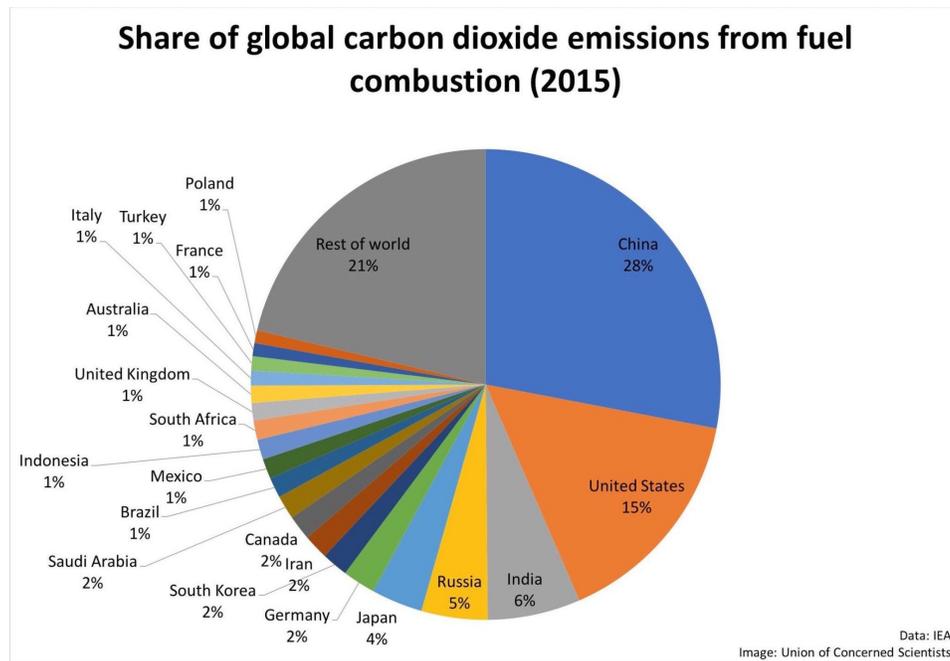


## Re-appraise Net Zero Carbon Dioxide Emissions/ ICEV Phaseout Policies

- The most potent and abundant global warming gas, comprising roughly 2% of the atmosphere - and 95% of the global warming gases present in it - is water vapour.
- Fortunately as a liquid - in droplet form - the gaseous warming effect of water vapour is very effectively counterbalanced by the cooling influence of its presence as low-level clouds.
- CO<sub>2</sub> represents a little over 0.04% (c.420ppmv) of the atmosphere, and only 4% of atmospheric global warming gases.
- The UK is responsible for just 1% of global Man-made CO<sub>2</sub> emissions; these being <5% of total annual global CO<sub>2</sub> emissions (c.95% of which are of natural origin).



- If Net Zero policies were adopted by all nations globally, this would theoretically reduce the average global temperature by less than 0.1°C in 2050 and by less than 0.2°C by 2100: [<https://www.cfact.org/2020/03/03/eliminate-fossil-fuels-now-u-s-climate-model-says-why-bother/>].
- The maximum UK contribution to temperature reduction would be a practically unmeasurable 0.002°C.
- The Global Warming Policy Foundation estimates that implementing Net Zero policies will cost the UK £100,000 per household - equivalent to funding a £100Bn HS2 project annually for three decades [[https://wattsupwiththat.com/2020/02/25/cost-of-net-zero-will-be-astronomical-new-reports-warn/?fbclid=IwAR1TgfFulWC12\\_MxX2JQCT9\\_TgWarO4YCYheXcU34lokWTrA1YcfV6BTeYo](https://wattsupwiththat.com/2020/02/25/cost-of-net-zero-will-be-astronomical-new-reports-warn/?fbclid=IwAR1TgfFulWC12_MxX2JQCT9_TgWarO4YCYheXcU34lokWTrA1YcfV6BTeYo)].
- China, India and the developing world nations have all indicated they have no intention of reducing their rapid pace of industrialisation merely to curb their CO<sub>2</sub> emissions, implicitly challenging the soundness of the science underpinning the Man-made global warming hypothesis. Why then are we?
- By 2050, government is counting on consistently reliable, continuously operating renewables technology being available to power the nation's entire future transport needs. However, it has no real understanding of the limitations or drawbacks of this technology.
- Nor has it taken any account of the attendant extraction-, depletion and recycling risks; associated with both highly purified quartz, and the various rare-earth metals essential to large-scale "renewables"-powered vehicle manufacture.
- Hot on the heels of flip-flopping in rapid succession from lean-burn-petrol, through catalysed petrol-, diesel- to (currently in vogue) electric propulsion, politicians are potentially unleashing another triumph of hasty legislation over technology.

- The optimal long term solution to the nation's road transport needs may be any (or none, or a combination of) electric-, hydrogen fuel-cell-, hybrid- and internal combustion engine technologies (although "special advisers" with lucrative subsidy-laden axes to grind may well beg to differ).
- Politicians are again, from a position of comparative ignorance, trying to influence the direction - and force the pace - of innovation. One would have hoped that their previous track-record of multiple, well-documented, ill-advised interventions would have bred caution. But instead of awaiting the arrival of the best, commercially-viable technology front-runner, they blunder enthusiastically on.

The views expressed below are not those of the ABD alone. They are a distillation of the comments of experts in this field; such as Michael Kelly, emeritus professor of technology in the Department of Engineering at the University of Cambridge [<https://www.thegwpf.com/new-paper-decarbonisation-plans-fail-engineering-reality-check/>], eminent automotive emissions engineers, such as Gautum Khalgatgi [<https://www.thegwpf.org/content/uploads/2020/07/The-Battery-Car-Delusion.pdf>], Colin Andrews, and automotive commentators such as Andrew Forster and John Naish. All of these, and many others, such as the GWPF, are recommending caution regarding both the ultimate destination of the transformation of the road transport vehicle pool - and the pace at which this can realistically be achieved.

- Currently environmentally-sensitive extraction of the key raw materials (metals such as lithium, cobalt and neodymium; and minerals such as high purity quartz etc..) is prohibitively expensive. These generally highly-reactive, toxic materials are found in low concentrations around the world, necessitating their energy-intensive extraction from vast quantities of extraneous contaminants.
- It's currently "cost-effective" to source scarce rare-earths from countries with lax regulations.
- Nearly 70% of current cobalt needs are obtained by strip-mining the tropical Congo using predominantly child labour. Virtually all the global supply of processed rare-earths comes from China, to environmental and human rights standards falling far short of the West's.
- Raising such practices to internationally acceptable levels would significantly increase (currently substantially subsidised) prices. Meantime, 'green' subsidises have already created a highly regressive UK taxation régime.
- ***Electric vehicles require over 1000 times as much rare-earths as the average phone, tablet, or laptop.*** Even converting ***only*** the UK's vehicle pool to all-electric propulsion would require an unsustainable 50% hike in global cobalt extraction.
- Before an electric car even turns a wheel, its battery manufacture alone creates more CO<sub>2</sub> than a small petrol-engined car driven for 100,000 miles.
- Whilst manufacturer guarantees respectively suggest a 5 year/ 60,000 mile life for smaller capacity EV batteries, and 8 years/ 100,000 mile for larger ones; one industry insider's view is that they are typically effectively spent after c. 60,000 miles.
- Donating' part-spent batteries to households wanting electrical storage addresses electric car manufacturers' short-term problems; but ***not*** the depleted battery disposal issue.
- This looming toxic waste problem ***must*** be confronted; especially as non-recyclable spent solar panel and wind-turbine waste disposal are already mounting concerns.
- The same applies to the batteries, motors and generators of electric vehicles, which all contain rare-earth elements essential to the obtainment of acceptable efficiencies.
- UK's power generation and energy storage capacity is woefully inadequate, relative to the demands shortly proposed to be placed on it. Commenting in **Local Transport Today** in June 2020, Prof Kelly said: "*On battery electric vehicles*", he said: "*Consider Dinorwig power station, the biggest hydropower energy storage plant in the UK. If all UK cars were battery powered, the nine gigawatts of energy stored behind the dam would be capable of recharging about 60,000 of them, or about 0.25 per cent of the UK fleet.*"...If all vehicles have to be electric, "*something of the order of 70 per cent of Britain's entire existing electricity supply capacity will be needed*"!

- Compounding the problem, UK politicians are perhaps placing too much faith in the two least reliable renewable energy sources: wind and solar. These require conventional backup, capable of powering the entire UK when there's no wind or sunshine. So the 'renewables' are essentially superfluous. The emissions they create in their manufacture, operation and maintenance are **additional to** the UK's baseload power output; while actually delivering very little power annually per UK household.
- This could easily make e.g., offshore wind, carbon positive. With operating voltages about a tenth of the onshore grid, transmission losses are much higher. Likewise, solar is woefully inefficient, vast panel arrays being needed to deliver useful output. The panels again rely on exotic materials and highly energy-intensive extraction processes for their manufacture. Given their finite life, what are their disposal arrangements? What is the cradle-to-grave environmental impact? For some answers to these questions [see: <https://www.youtube.com/watch?v=Zk11vI-7czE&feature=youtu.be>]
- The limited availability and supply of the above critical materials dictates environmentally sound recycling as the **only** sustainable option. Western politicians are not currently even acknowledging - much less identifying ways to foot the bill for - either the accompanying eye-watering costs or the resultant significant increase in the country's CO<sub>2</sub> emissions. Indeed, the obsession with achieving national 'Net-Zero' will likely result in once again exporting this pending eco-challenge to the Developing World. *It took a long time to wake-up to the issue of managing plastic waste; how long before dumping toxic electrical waste also becomes unacceptable?*
- EVs are **not** 'zero emissions', they are **Displaced Emissions** vehicles. Myopically focussing only on reducing direct CO<sub>2</sub> emissions may actually result in the UK blundering into a technological cul-de-sac. The "alternatives" indirectly increase what they purport to reduce, with accompanying, ecologically adverse side-effects. According to Colin Andrews, the simple, hard fact is that using current technology, it's not possible, at an affordable price, to manufacture a highly efficient electric vehicle in an ethically and environmentally sound manner.
- Due to the enormous battery weight penalties needed to achieve effective performance, electric propulsion of medium-, and heavy-goods-, and towing vehicles is currently neither technically nor commercially feasible. See the ABD's official ICEV phase-out consultation response HERE: [<https://www.abd.org.uk/abd-response-to-the-proposed-petrol-diesel-hybrid-ban>].
- Indeed, many industry experts believe, given the limitations of currently available technologies, that mass vehicle electrification is potentially environmentally damaging, both in terms of toxic waste creation and even global-warming gas emissions.
- Energy security is a further problem. It has been suggested that growth in EV use would improve energy security in developed economies, by reducing their dependence on oil supplies from often volatile regions. But this merely replaces oil with a new dependence on supplies of the key materials in EV batteries: e.g., lithium and cobalt. Should UK policymakers permit the country's transportation system be held hostage by even fewer players than currently?
- Lithium and cobalt production is concentrated in a handful of countries: more than 80 per cent of cobalt reserves are in five countries: the Democratic Republic of Congo, Australia, Cuba, the Philippines and Zambia. More than 99 per cent of lithium reserves are located in only four countries: Chile, China, Argentina and Australia. In contrast, the top four oil producers hold only 52 per cent of global reserves.
- The output situation is even worse: four countries produce about 95 per cent of global lithium. For oil, the top four produce about 44 per cent. Regarding cobalt production, arguably politically unsympathetic China, Russia and Cuba are among the world's top producers. EV technology imposition may actually compromise UK energy security.

Seeking to impose a legally-binding Net Zero Carbon Dioxide emissions requirement would fundamentally affect individuals' freedom of choice and mobility:

- Private car ownership and use, foreign air travel and holidays will all be made increasingly expensive and eventually unaffordable.
- It will no longer be possible to select any domestic heating system which is not electric; existing gas heating installations will have to be ripped out and replaced.
- Energy use will be subject to smart-meter regulation and usage capping.

The general public is blissfully ignorant of the full scope of the Net Zero proposals; which have not been subject to any form of democratic oversight. As outlined above, the accompanying longer term environmental effects of these policies, though represented as "eco-friendly" could potentially actually be highly damaging ecologically.

There is clear and present danger arising from the implementation Net Zero. Fruitless attempts by the Western Nations to control the climate are already being comprehensively negated by the actions of Russia, India and the developing world. Resources earmarked for Net Zero may actually be needed for climate adaptation policies (e.g., substantial investment in non-weaponisable nuclear & natural gas energy generation). This is to combat dramatic climatic cooling; evidence for which is both credible and mounting.

The terrestrial climate is primarily controlled by solar-electromagnetic, solar-orbital, tectonic, volcanic and oceanic factors that drive temperature changes which carbon dioxide shadows, not controls. Policies based on climate adaptation are therefore the only rational route forward.

See: <https://www.youtube.com/watch?v=bJWnMA3-sQs&feature=youtu.be>.

The soundness of adopting the adaptation approach has been recognised independently even by enlightened climate activists like Michael Shellenberger, author of the recently published "*Apocalypse Never - Why Environmentalism Harms Us All*", and Bjorn Lomborg, who has published a follow-up to his critically-acclaimed "*The Skeptical Environmentalist*", entitled "*False Alarm - How Climate Change Panic Costs Us Trillions, Hurts the Poor, and Fails to Fix the Planet*".

Invoking the Precautionary Principle, we cannot afford the costs associated with Net Zero Policies.

What is therefore required is a complete and scientifically robust re-appraisal of the all proposed legislation related to both the accelerated phase-out of internal combustion engine vehicles, and the implementation of Net Zero Man-made carbon dioxide emissions policies.