Motoring in the low-carbon fast-lane

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Driving in hot sticky weather is not pleasant. But the longer we rely on "dirty" fossil-fuel travel, the hotter our weather is likely to become. The "green" answer lies in learning how to motor, fly, use trains and deliver goods sustainably. And there are a growing number of low-carbon options.

The questionable joys of the open road

Travel in ever-increasing congestion is not enjoyable or environmentally-friendly. Transport creates some 26% of UK greenhouse gases – only 25% come from the energy sector. And the figure is rising. However, a lot can be done to save both money and carbon.

At a policy level, the Government is actively backing a low-carbon transport revolution based mainly on electric vehicles (EVs) with a new national support infrastructure to provide "green" renewable energy. Its flagship Road to Zero strategy is outlined below.

Introducing the worrying UK Climate Projections 2018 (UKCP18) report recently (https://www.metoffice.gov.uk/binaries/content/assets/mohippo/pdf/ukcp18/ukcp18-headline-findings.pdf), Environment Secretary Michael Gove also detailed the

government's active responses.

At a personal level, most business people are keen to minimise time wasted in stationery traffic on hot polluted roads. This can work at three key levels – the first and second involve designing low-carbon transport strategies, plus buying or leasing and maintaining the most appropriate vehicles.

However, the third addresses the potentially touchy subject of personal driving styles! Egos aside, most of us could probably benefit from fuel-efficient driving tips with clear bottom-line benefits.

As also explained later, sustainable transport is also a key part of the Low Carbon Programme and our experienced team can help you to optimise both existing and future "green" transport systems.

Not such good carbon news

Before that, it might be useful to review the recent series of quite negative carbon news reports released ahead of an early-December UN meeting in Katowice, Poland where nations will discuss how the spirit and letter of the ground-breaking global climate agreement signed in Paris exactly two years ago can be made to work much more effectively.

On an upbeat note, the EU announced on 28th November that it wants to become the world's first "climate neutral" major economy by 2050. Energy and Clean Growth Minister, Claire Perry, also announced on the 28th that the UK's first commercial carbon capture and storage (CCS) project should be operational by the mid-2020s. Phase one of the Acorn project is due to store some 200,000 tonnes of CO_2 from the St Fergus Gas Terminal in Aberdeenshire under the North Sea.

The other news is less positive. For nine years, UN Environment has tracked the world's emissions cut gap. Its latest report (27/11/2018 – https://www.unenvironment.org/resources/emissions-gap-report-2018) shows that global efforts to tackle climate change are well off track and getting worse. In 2017, a 1.2% increase in CO_2 emissions was the first for four years. Equally importantly, international efforts to cut carbon are running out of stream, it says.

To keep temperature rises down to a relatively safe 1.5^0C, emissions by 2030 must be 55% lower than today, according to the UN. It adds that the world is currently heading for a 3.2^0C rise.

Unfortunately, the UK, Argentina, Australia, Canada, the EU, South Korea, Saudi Arabia, South Africa and the US are on the naughty step for missing their so-called Nationally Determined Contributions for 2030 made under the Paris agreement. In fairness, the UK's targets are extremely ambitious.

Regional and local success stories

However, importantly for us the UN has great faith in “non-state actors” – local, regional and city authorities and businesses. It estimates that more than 7,000 cities in 133 countries, plus some 6,000 companies, are already committed to climate action. A much wider buy-in by this “sector” could cut emissions by 19 gigatonnes (or the CO_2 equivalent) by 2030 – enough to keep global warming increases down to 2^0C.

Clearly, every little helps! Which is why the Low Carbon Programme is important.

Highest carbon levels for millions of years

The World Meteorological Organization (WMO) reported in November (https://library.wmo.int/index.php?lvl=notice_display&id=20697#.W_2OYDGYS1s) that CO_2 levels have reached 405 parts per million (ppm) for the first time in 3 million to 5 million years – when surface temperatures were 2^0C to 3^0C hotter and sea level 10m to 20m higher.

The Met Office’s has also released its first major climate change update for ten years (UKCP18 – https://www.metoffice.gov.uk/research/collaboration/ukcp/download-data) with a warning that in the worst case, UK summer temperatures by 2070 could be 5.4^0C higher than in 1981-2000 unless there are drastic carbon emission cuts. The figures are scenarios at the edge of scientific understanding and not firm forecasts. However, they suggest that a 5% chance in the 1990s of hot summers similar to 2018 could rise to 50% by 2070 with 70% less rain; 4.2^0C warmer winters may see 35% more rain. Sea levels around London might rise by up to 1.5m by 2100.

In his recent lengthy speech on climate change projects (https://www.gov.uk/government/speeches/michael-gove-speech-on-uk-climate-change-projections), Michael Gove noted the importance of UKCP18 as a decision-making tool, outlined in great detail the size of the global threat and focussed in on Defra’s specific responses to the crisis.

Managing company transport emissions sustainably

Transport aspects are a key part of robust environmental management systems and important in both preparing for compliance with the international environmental management standard, ISO 14001, and making practically every day running cost cuts.

The Low Carbon team can help in a number of ways where businesses have both freight and personal transport needs. Optimising vehicles routing to minimise mileage and duplication is one priority. Replacing personal travel with Skype and Facetime digital conversations, conference calls and online meetings is another.

Buying, using and maintaining vehicles – new or second-hand – is also an important area as pressures grow to phase out petrol and diesel as soon as reasonably possible.

The third critical area is how well cars, vans and lorries are driven. On-board monitoring equipment to record acceleration, braking and fuel-consumption patterns quickly pinpoints bad habits. Coupled with driver training, this can improve not only carbon performance but also road-safety.

Road to Zero

Rail and even motorway electrification for HGVs is on the agenda, as well as both hydrogen-powered trucks and trains. However, the Government's £1.5 billion Road to Zero Strategy is designed to promote electric vehicle uptake. Transport Secretary Chris Grayling says its new policies will collectively "put the UK at the forefront of the design and manufacturing of zero-emission vehicles". He adds that it is "one of the most comprehensive packages of support in the world" that will help the UK to "win a substantial slice" of a global EV market worth up to £7.6 trillion by 2050!

The strategy's 46 zero-emission road transport measures will be implemented across "pillars" that include: – reducing emissions from existing vehicles; pushing up EV sales; greening heavy goods vehicle (HGV) fleets; investing in green vehicle design and manufacturing; improving the essential EV infrastructure and supporting local action.

Greening existing vehicles

There will also be measures to improve fuel efficiency and make existing petrol and diesel vehicles greener, plus a 15-year legal commitment for sustainable fuels to account for 7% of all road fuels by 2032.

The existing Clean Vehicle Retrofit Accreditation Scheme, which currently only applies to buses, HGVs and coaches, will be expanded to include black cabs and vans. Retrofits to large vehicle fleets can be a cheaper and quicker way of reducing emissions that buying new vehicles.

Heavy goods with no heavy emissions

The electric vehicle revolution has also reached the heavy goods vehicle sector; ultra-low emission standards are being developed for HGVs. How zero-emission technologies work best for HGVs is being studied with Highways England. A voluntary commitment will be introduced to reduce HGV greenhouse gas emissions by 15% by 2025 based on a 2015 baseline.

The Government also wants EV R&D to rise substantially by 2027, with a 12% tax break for qualifying projects, plus initiatives to source UK parts and raw materials. A new supply chain competitiveness and productivity improvement programme will help the UK's EV R&D industry to compete with European rivals.

Infrastructure and charging improvements

A lack of charging infrastructure has been identified as one of the greatest biggest barriers to EV take up, in parallel with the "range" distance travelled per charge and vehicle costs. The Committee on Climate Change found earlier this year that 29,000 charge points will be needed across the UK by 2030, of which 85% will be rapid chargers.

There will also be measures to help local and transport authorities opt for green vehicles, including a £48 million ultra-low emission bus scheme fund. In addition, local authorities will be eligible for funding to provide a dedicated taxi charging

infrastructure.

Check list

Environmental performance and fuel-economy can be improved through the following tips: –

– Maintenance: –

- Cleaning agents added to the fuel tank remove harmful deposits from older engines
- “Premium”, “super” and “ultimate” fuels already contain cleaning agents
- Engine oil changed at regular intervals keeps vehicles running at optimum efficiency
- Regular servicing at intervals recommended in the vehicle handbook improves performance
- Clogged air filters reduce airflow and should be cleaned regularly
- Low tyre pressures raise fuel-use – 20% under-inflation can cut fuel-economy by some 20%
- Low-rolling resistance tyres with an EU tyre label can save up to 0.5 litres of fuel per 100km
- Roof racks, bike carriers and roof boxes create resistance and drag

– Driving habits: –

- Switch off engines in queues – idling for 10 seconds wastes more fuel than restarting
- Changing gear earlier, braking sooner and driving more slowly reduces wear and fuel use
- Maintaining a greater distance from the vehicle ahead gives room for more efficient braking
- Driving at around 2,000 RPM reduces fuel consumption
- Air conditioning systems use more fuel – turn them before the end of a journey
- Air conditioning systems are more efficient than travelling with open windows causing drag

– Further thoughts: –

- The best low carbon journeys are made by cycling or walking – car sharing is second option
- Use public transport where the carbon footprint is shared between more people
- Lightening your vehicle load whenever possible reduces fuel consumption
- Company cars are taxed on both value and emissions – HMRC provides information
- Avoid flying or fly less frequently and for shorter distances – don’t use private jets
- Take “staycation” holidays closer to home

Avoid space travel – it is probably the most carbon-inefficient mode of transport known to man!