Transport
Science vs Reality

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Transport the science vs reality

- What does the Science tell us?
- Transport systems of the future?
- How do we get to Zero?

Arrival

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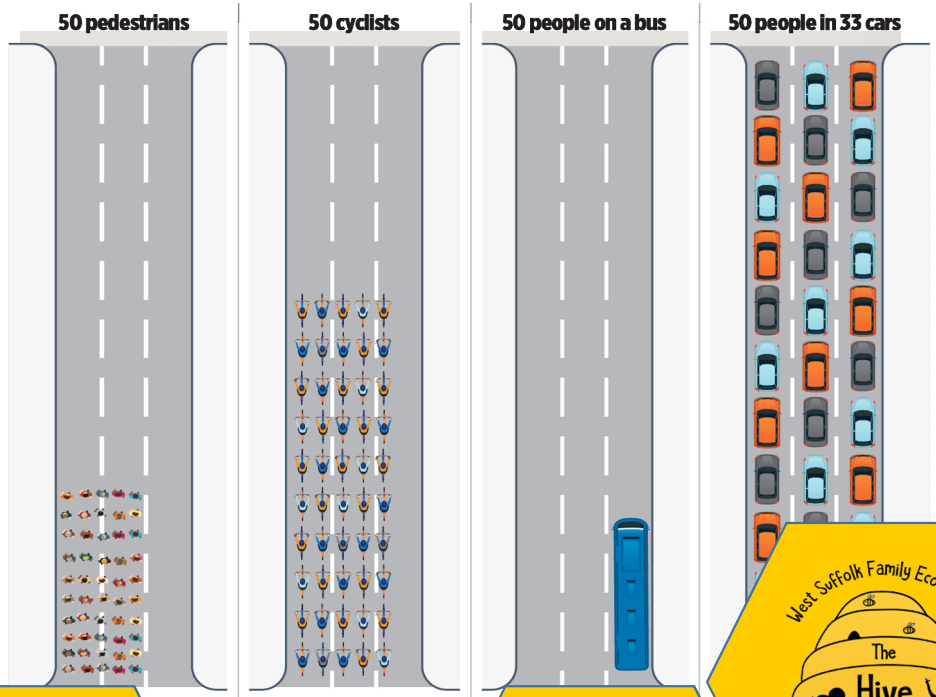
We should just keep making it bigger?

- 1970’s we’ll just build another lane
- 1980’s we’ll just build another lane
- 1990’s we’ll just build another lane
- 2000’s we’ll just build another lane



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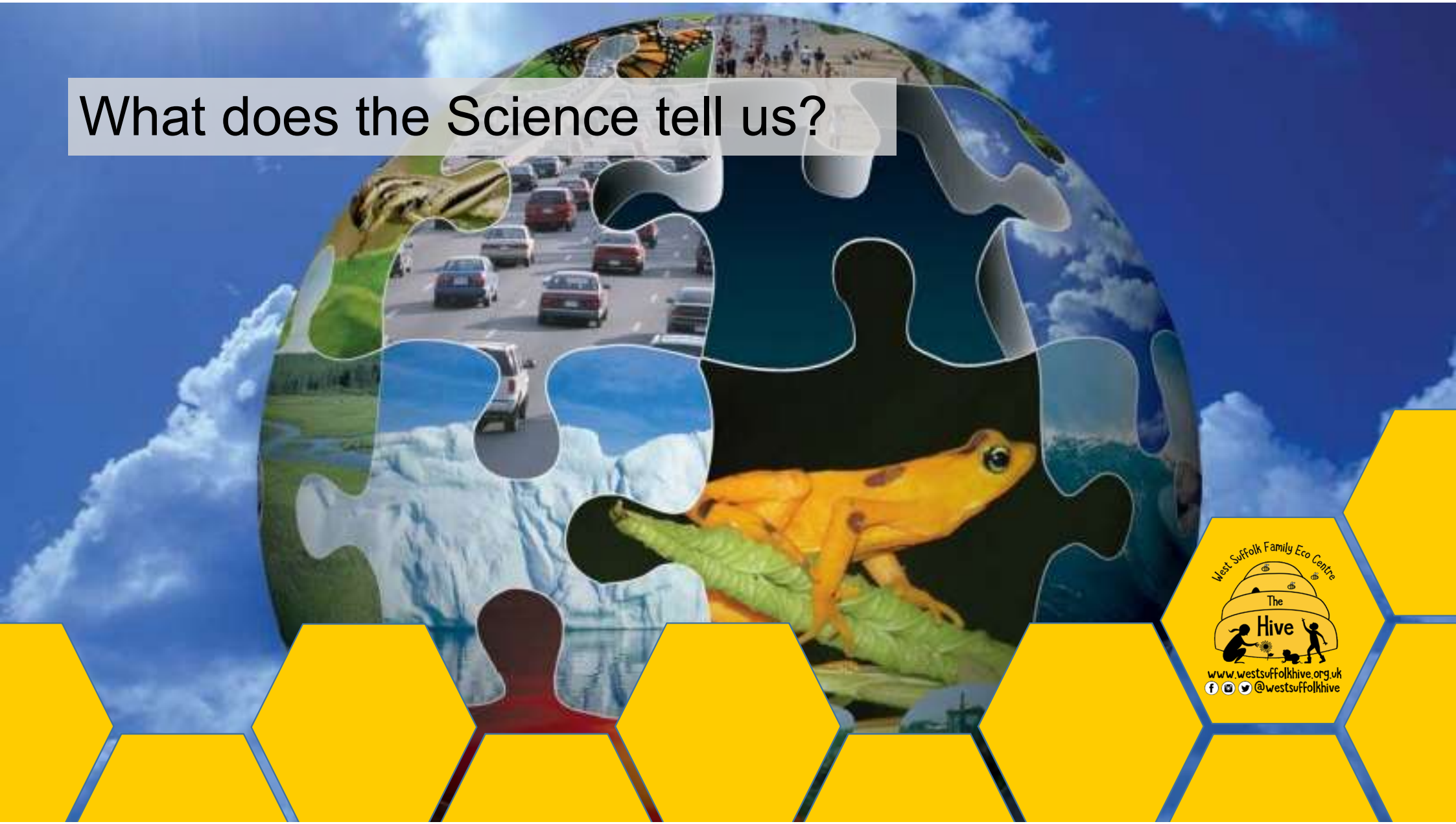
What does the Science tell us?



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Driven by Science

2015 Paris agreement ‘the world signed up to keep global warming well below 2deg, ideally below 1.5deg’

Currently on track to reach 1,5deg by 2030 / 2035

Johan Rockström, The Potsdam Institute, Germany 3rd March 2021

‘No surprise. Global emissions rebounded after 7% fall last year. The only thing we can learn from 2020 emissions, is that this is the pace required to deliver Paris - 7%/yr. Not by shutting down the economy but thru zero-carbon solutions & behaviour’

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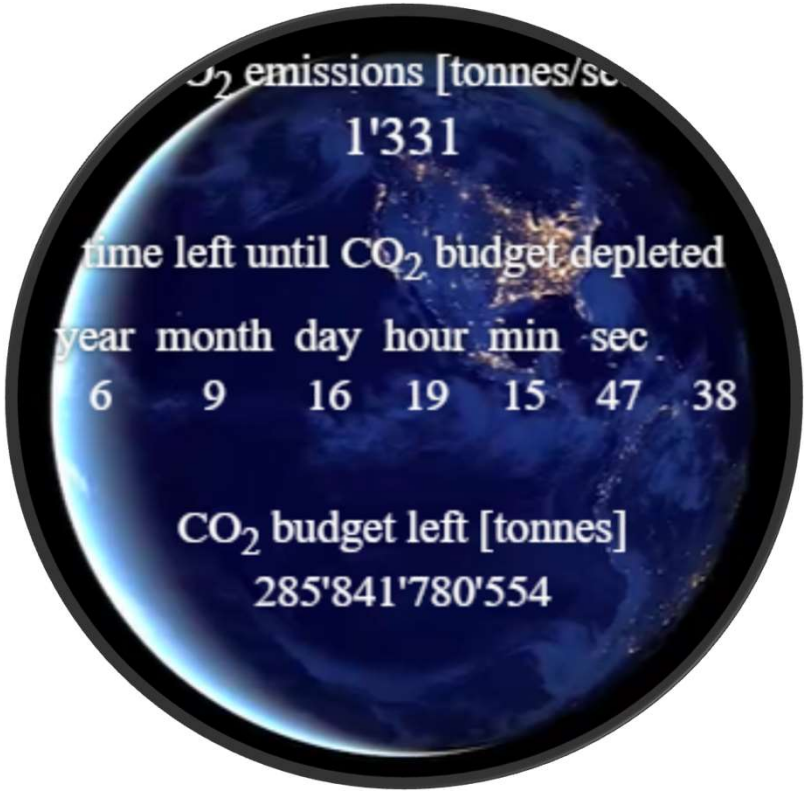

Mercator Research Institute on Global Commons and Climate Change - Berlin

Time to 1.5 ºC 6 years 9 months

C02 budget left 285b tonnes

THIS IS AN EMERGENCY!!!

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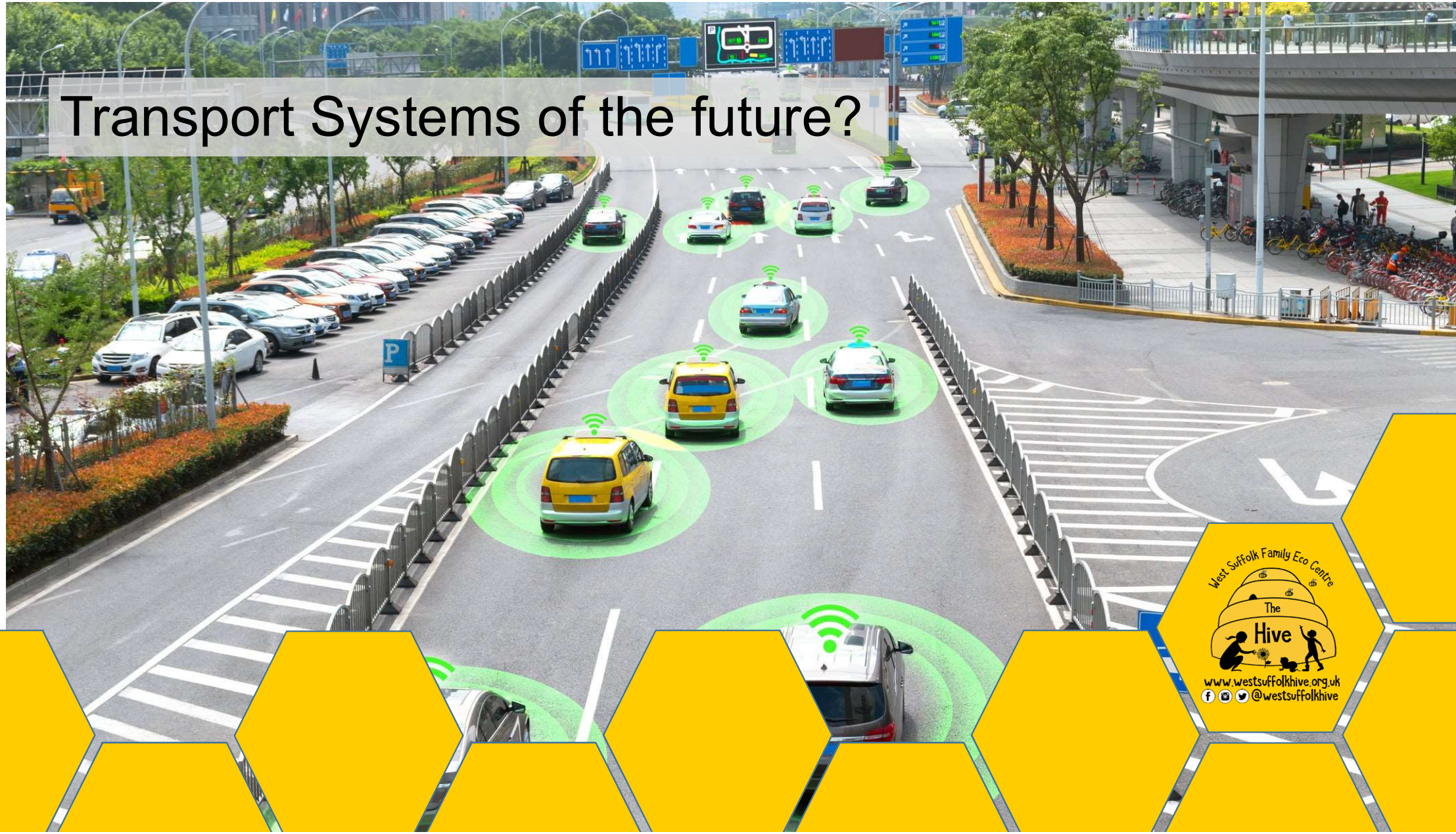
Transport Systems of the future?



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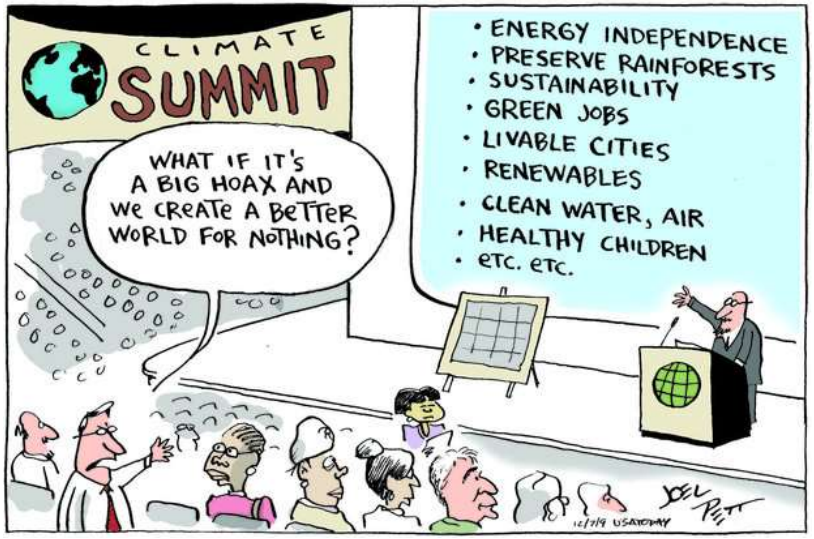
7% per year?



So we just switch to Electric Vehicles don't we?
Umm there is a big problem here …

To stick below 1.5 deg we have a carbon budget of 285b tons left

For 2 deg 1035b tonnes *https://www.mcc-berlin.net/*

There are currently 1.35b cars in the world, to replace them all the embedded emissions would be 1.32b x 17 (avg vehicle) = 23b tons

https://www.live-counter.com/number-of-cars/
https://www.theguardian.com/environment/green-living-blog/2010/sep/23/carbon-footprint-new-car

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So this is a huge problem?

Yes it is, well at least if you want a habitable world
So we will have 3 major factors at work (from an Automotive point of view)

- We have to reduce emissions fast

- We have to use what we have sparingly and make what we have last

- Governments have to switch electric generation away from fossil fuels and to renewables and provide infrastructure also.

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7% per year?

So we need lateral thinking and technology can help

1. Smaller journeys walking cycling
2. Longer switch to rail where possible
3. Use current car park of vehicles longer
4. Autonomous Vehicles
5. Retrofit new technology

YAMAHA

ELECTRIC MOTOR

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The end of car ownership?

- The average car sits unused 96.5% per day
- The average household has 1.2 cars
- The average car cost £5k per year to buy, insure and run 10,000 miles = 50p per mile
- Eventually autonomous vehicles would offer journeys at much lower costs

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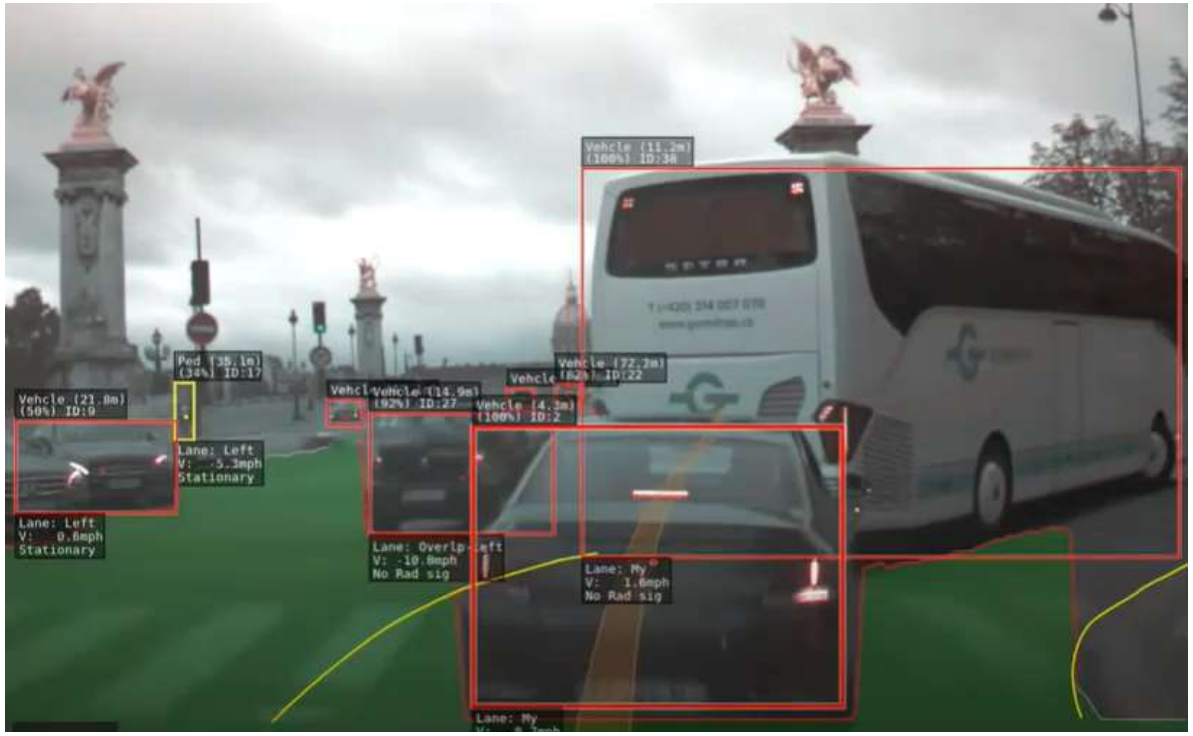

https://www.youtube.com/watch?v=_1MHGUC_BzQ

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How do we get to Zero?

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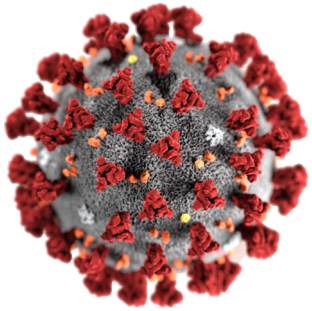
Lessons from Covid



We didn't move fast enough to start with because they said the public wouldn't accept it

Yet in the end public support was overwhelmingly to be harder on our response to Covid

We also saw just how well communities pulled together and helped each other – this resilience and community will be needed again.

Lessons from Covid

TELL THE TRUTH

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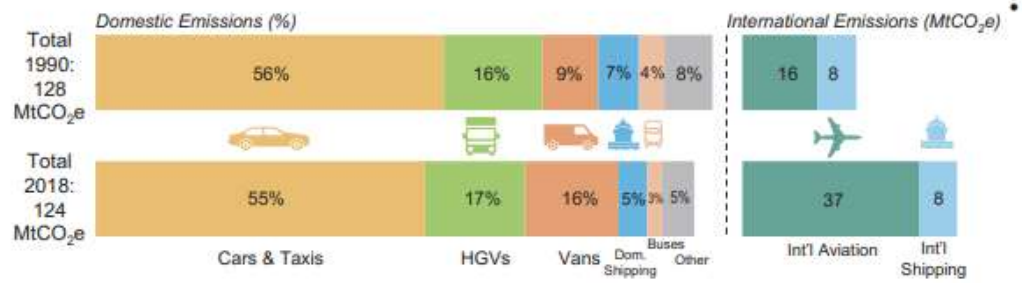
GHG emissions by transport mode

TSGB0306

- Since 1990, emissions from rail, buses and domestic shipping decreased, whereas van emissions increased by 67%. Van traffic has doubled since the early 1990s.

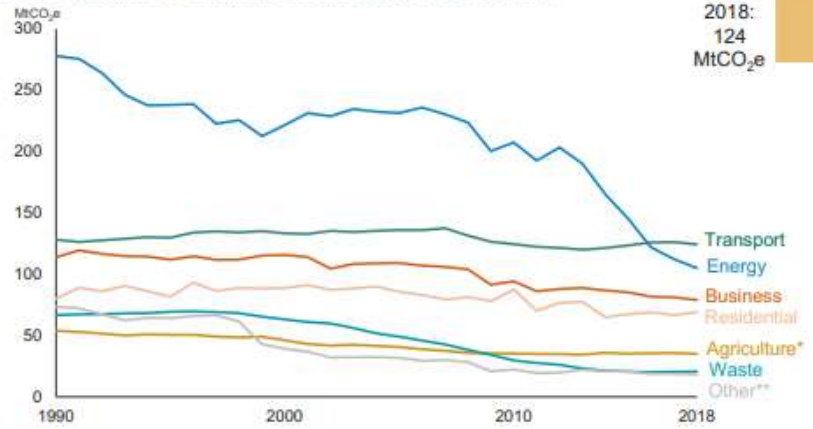
UK transport GHG emissions by mode: 1990 and 2018



- International aviation emissions, which are not part of the UK's domestic emissions, have more than doubled since 1990.

GHG emissions by sector

UK domestic GHG emissions by sector: 1990 to 2018



Transport emissions have decreased by 3% between 1990 and 2018, and made up 28% of net domestic emissions in 2018.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/945829/tsgb-2020.pdf

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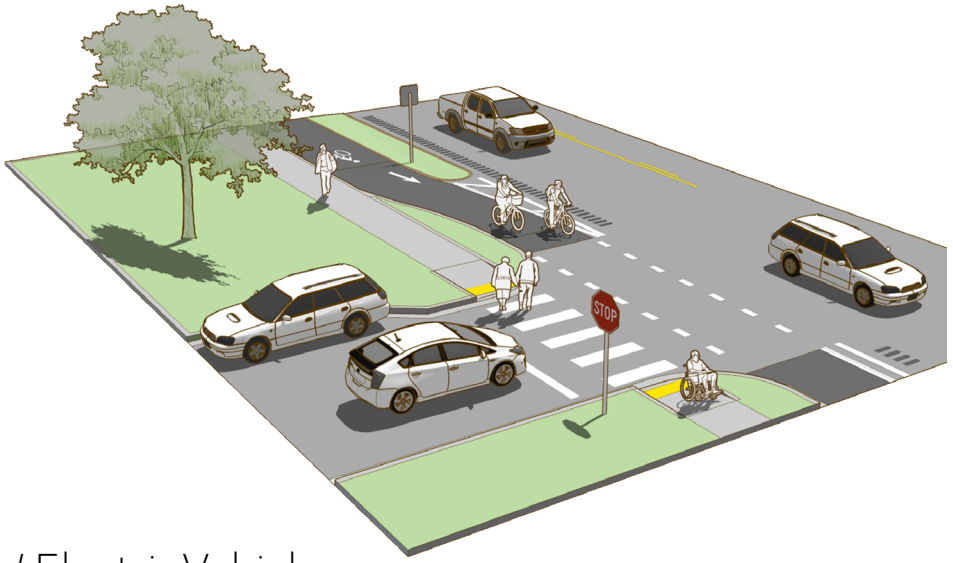
A pathway to Zero?



'When it comes to climate change, we cannot be too radical' Sir David Attenborough 2020

- Good walking / cycling infrastructure
- Move some roads to active travel
- Car sharing schemes / Automated Transport / Electric Vehicles
- Carbon taxes on ICE vehicles
- Increased public transport options

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A pathway to Zero?

Every Mile counts – 10,000 miles in an avg car = 2.5t

- Can you walk or cycle
- Car share some trips?
- Home working become normalized for some of the working week
- Switch to home deliveries
- Reduced overseas business travel – switch air to rail

Again all transport options, should incur carbon tax.

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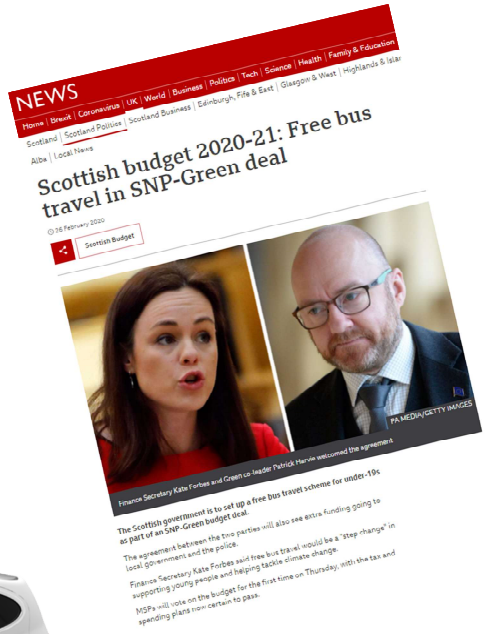
A pathway to Zero?

- Electric Bikes/Motorcycles promoted as single user transport and subsidised*
- Normalise Car Sharing / Increased Car Parking costs
- Free Public Transport for all*
- Increase Public EV charging infrastructure
- Limitations on global travel

**Carbon Tax on ICE Vehicles/Flying covers the cost of the above*


NEWS

Scottish budget 2020-21: Free bus travel in SNP-Green deal

Scottish Budget

PA MEDIA/GETTY IMAGES

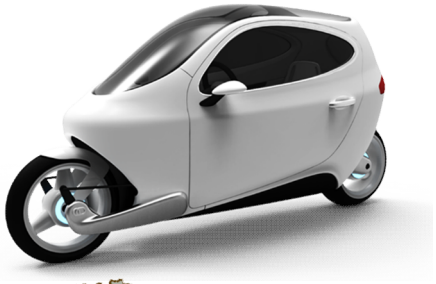
Finance Secretary Kate Forbes and Green co-leader Patrick Harvie welcomed the agreement

The Scottish government is to set up a free bus travel scheme for under-19s as part of an SNP-Green budget deal.

The agreement between the two parties will also see extra funding going to local government and the police.

Finance Secretary Kate Forbes said free bus travel would be a "step change" in supporting young people and helping tackle climate change.

MSPs will vote on the budget for the first time on Thursday, with the tax and spending plans now certain to pass.



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So what if? Everyone did something

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BUT?

- I want
- We can't
- We need
- We have

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I Want?

Do you need it all the time? Could you rent it by the day/week?

Remember this thing can deliver itself

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We can’t?

For the elderly or less able the car can feel like the only option …

But is it?

- Electric busses running in and out of villages 4 times per day
- Single Seat mobility would be used much more if the infrastructure allowed it
- Imagine the change

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WE NEED?

Many people need the versatility of a van for their work, of course that has to be part of the mix, so getting these employees over to electric should be a priority

- Delivery Drivers
- Trades People
- Hydrogen
- Mini Buses

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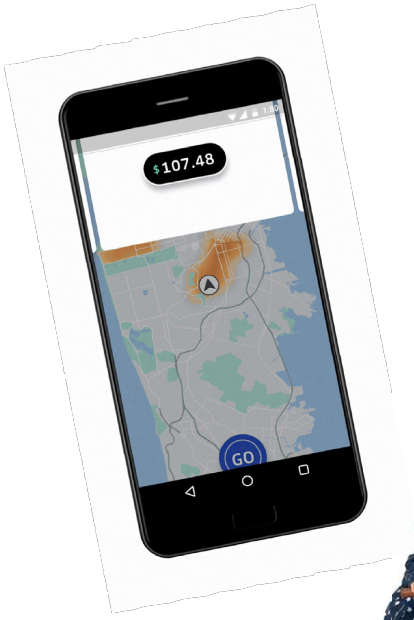
We Have?

Families can reimagine their transport solutions

- Vast majority could become single vehicle households
- Safe infrastructure allows even bike use on smaller journeys
- Ride hail apps and electric buses for extra requirements
- Why do we charge for bus journeys close to school catchments?



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Chris Boardman

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There are incremental changes we can all make ?
They all add up to a solution

Free and frequent public transport

Those that need it - full EV, but shared usage vehicles

Single person trip
Use other ways

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The Final Piece of the Jigsaw Carbon Credits/Budgets

Every Person in the UK would be given a set amount of Carbon Credits

This would be a set budget per person.

People needing more credits trade from those using less

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Not Possible?

I work in a high carbon industry, my carbon footprint in 2017 = 80 tons CO2

My Carbon footprint for 2021 <5 tons Co2

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Questions?

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