
Supply Chain Efficiency

Going Green to be more productive



Climate change – a defining issue

I want to testify today about what I believe is a planetary emergency - a crisis that threatens the survival of our civilization and the habitability of the Earth.

Al Gore

Our generation has inherited an incredibly beautiful world from our parents and they from their parents. It is in our hands whether our children and their children inherit the same world.

Richard Branson

The airline tycoon pledging \$3 billion to combat global warming by helping to develop alternative energy technologies.

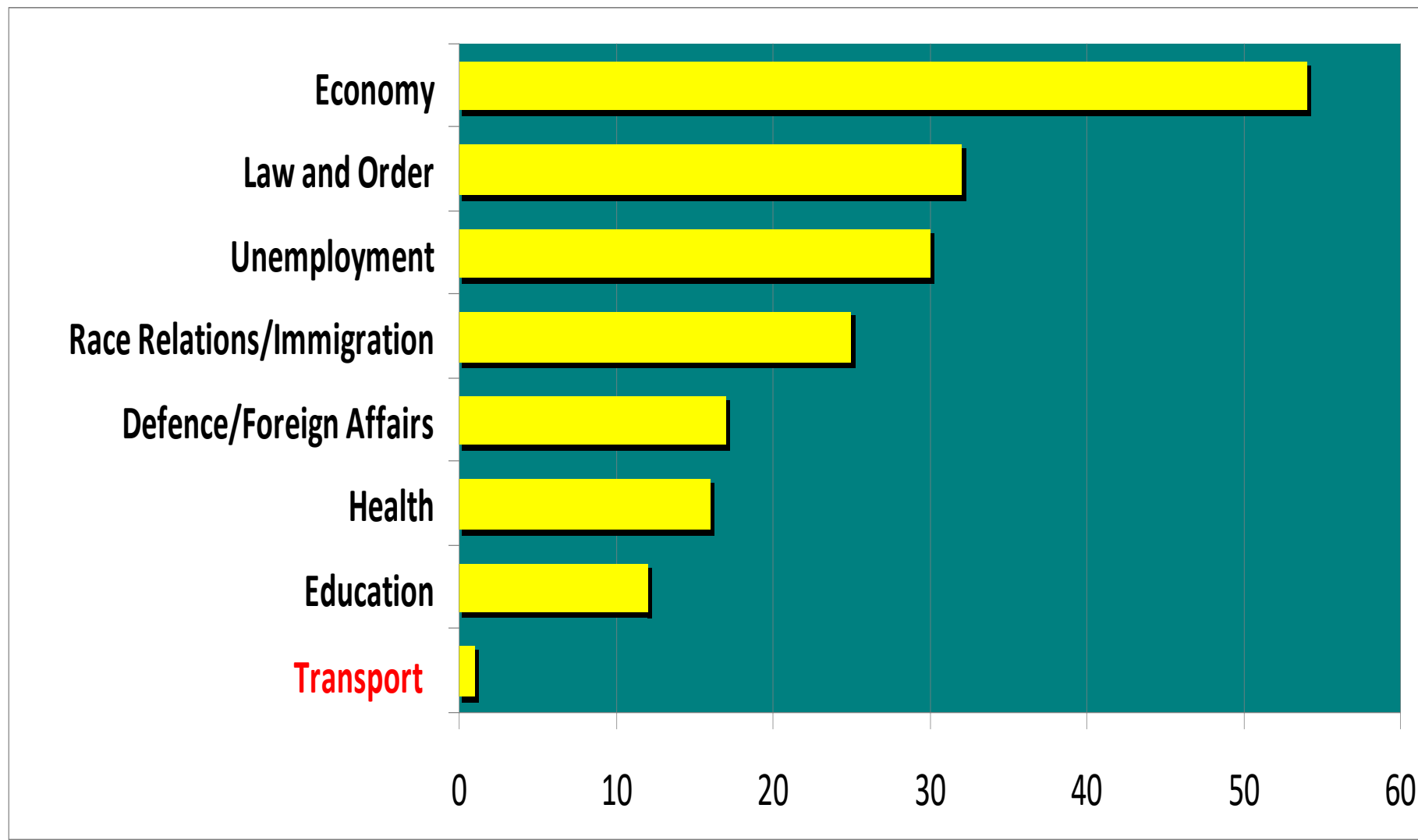
Creating the low carbon economy – a national endeavour that gives us purpose for the years to come

Gordon Brown

UK Budget 2009 .. at a time of extraordinary financial crisis

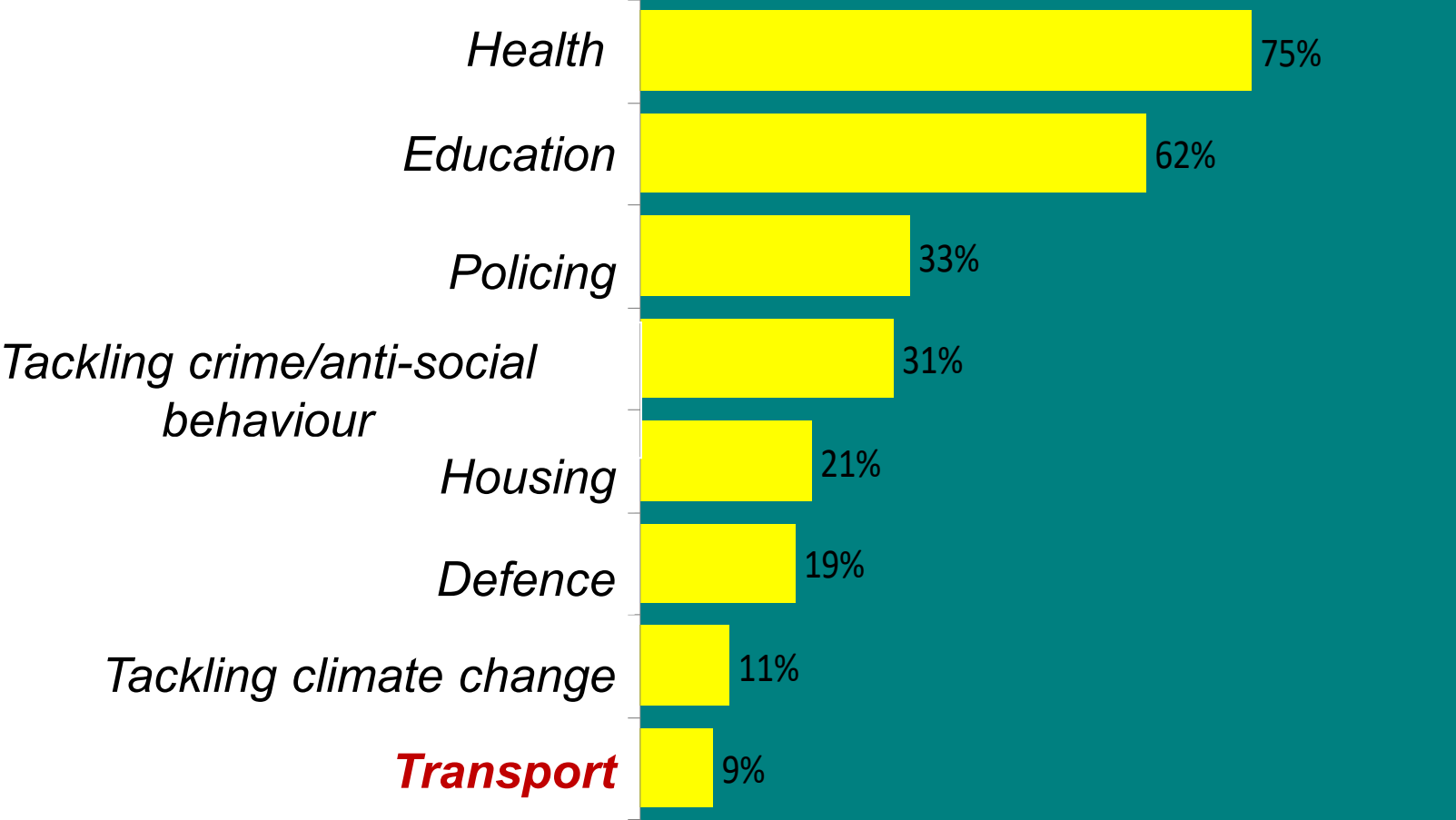
- green technology will be one of the great growth sectors in the world economy
 - carbon budgets a landmark step
-

Issues Facing Britain – the public view



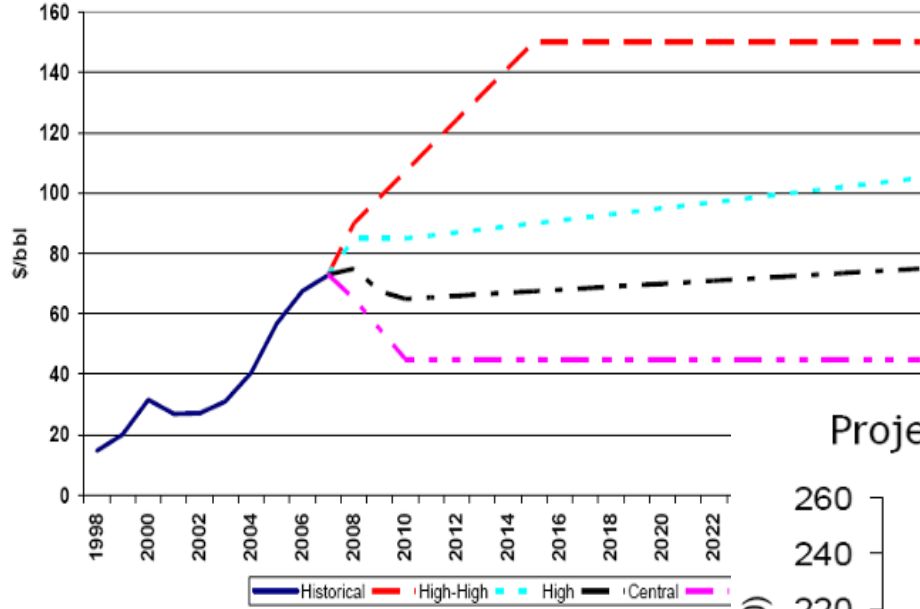
Source: Ipsos MORI

Spending Priorities – the public view

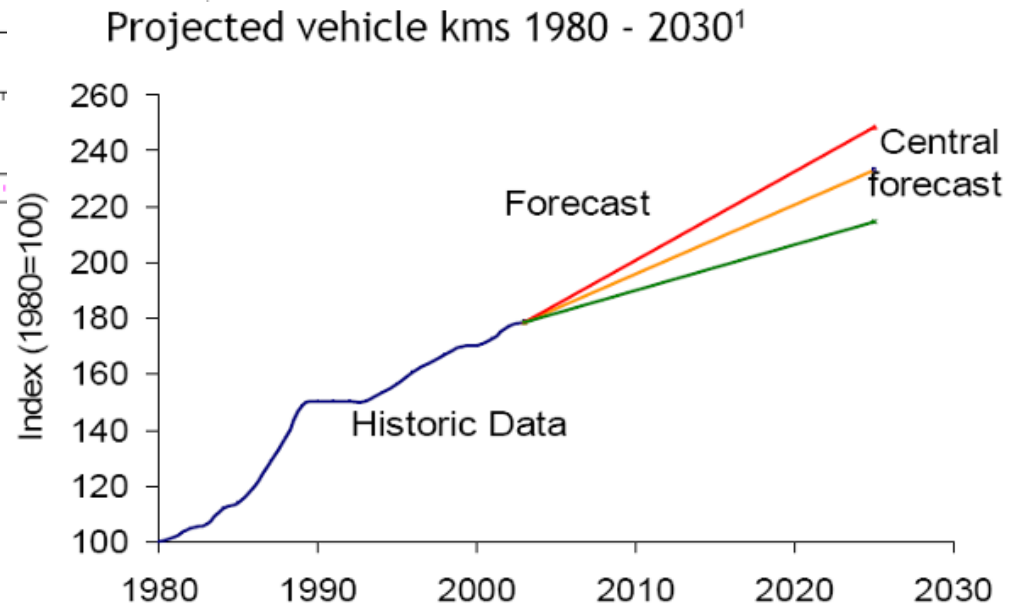


Source: Ipsos MORI

Planning for uncertainty

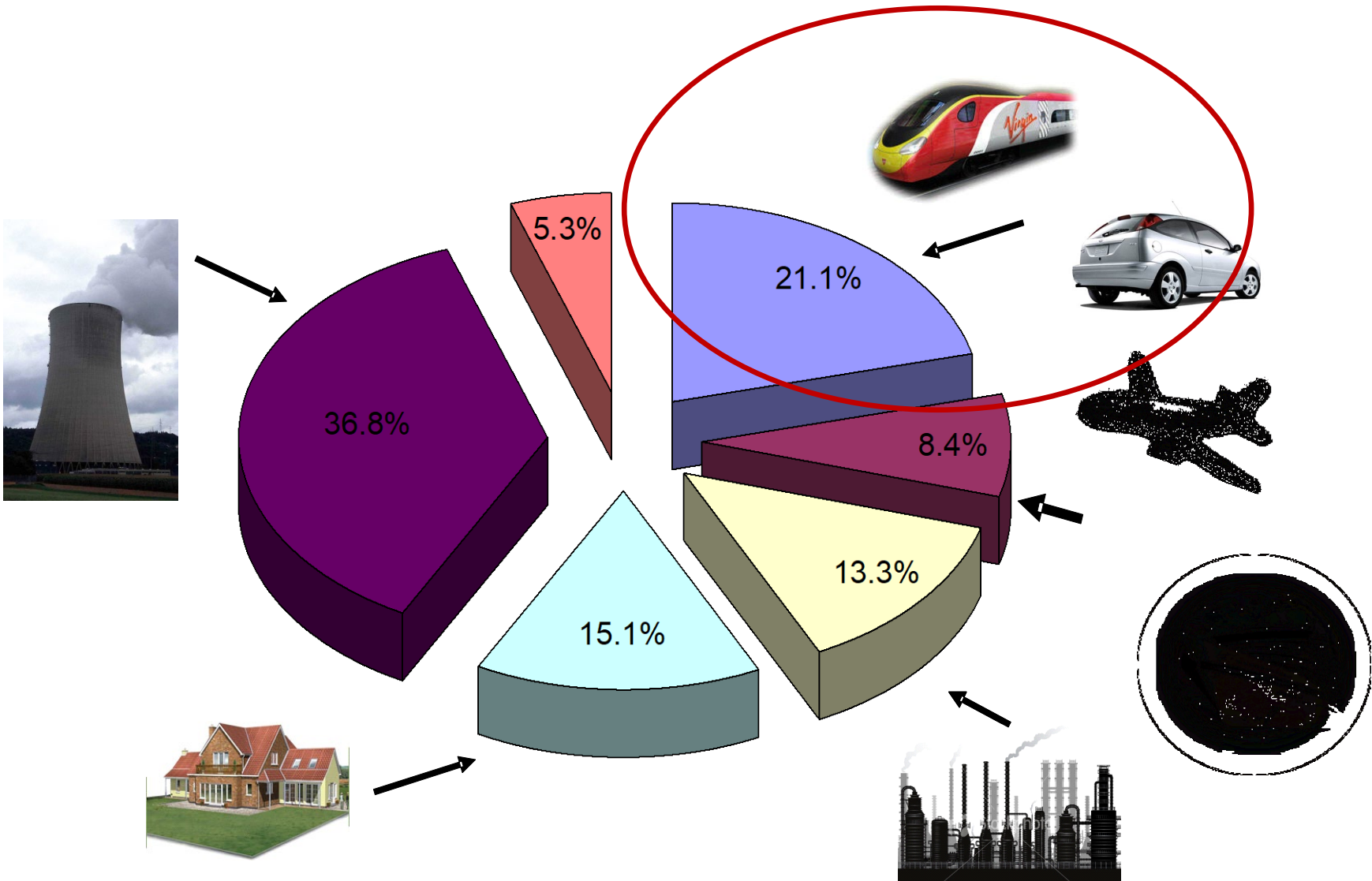


Projected Oil Price

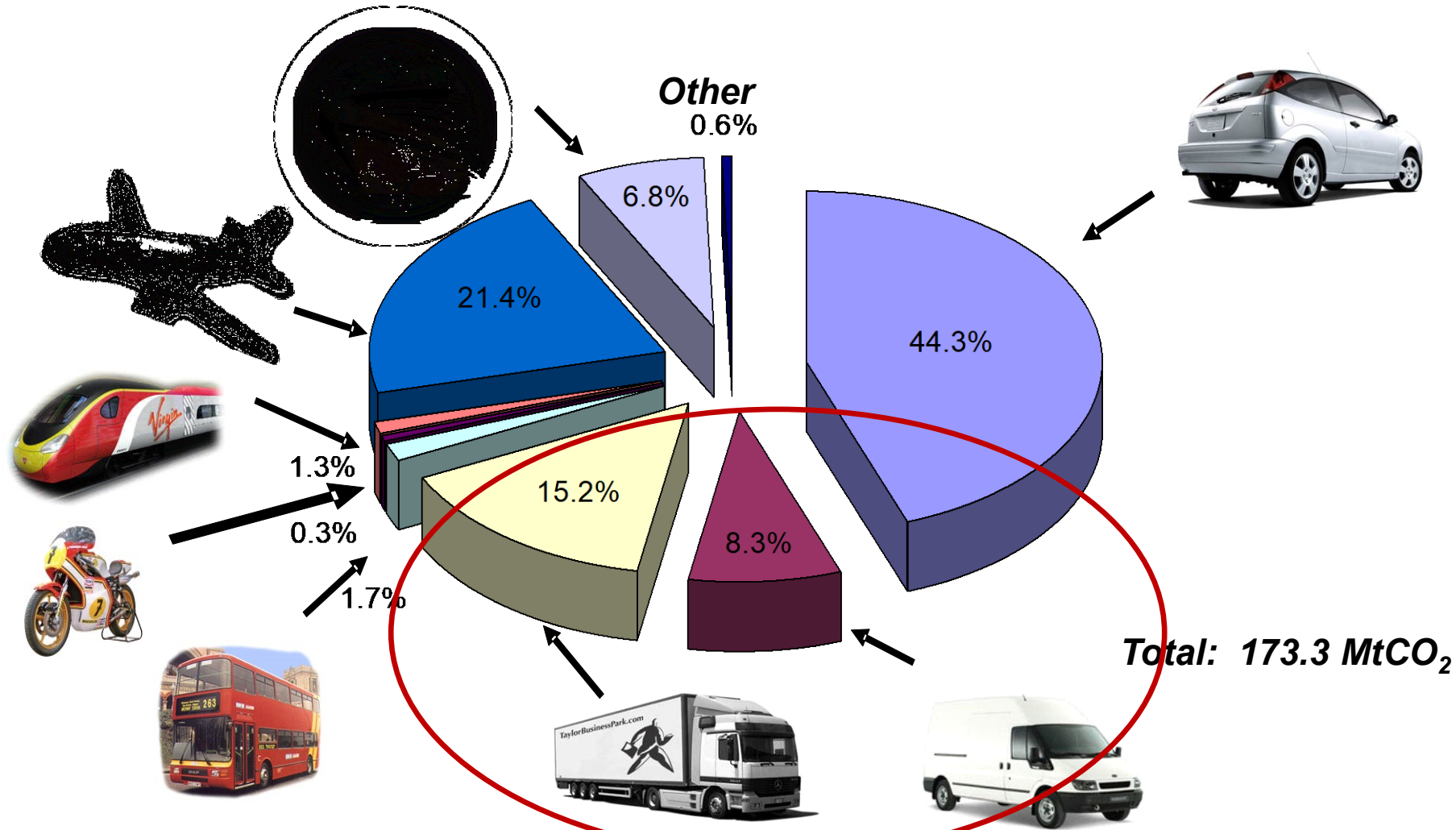


Transport demand?

UK CO₂ emissions by sector



CO₂ emissions from transport

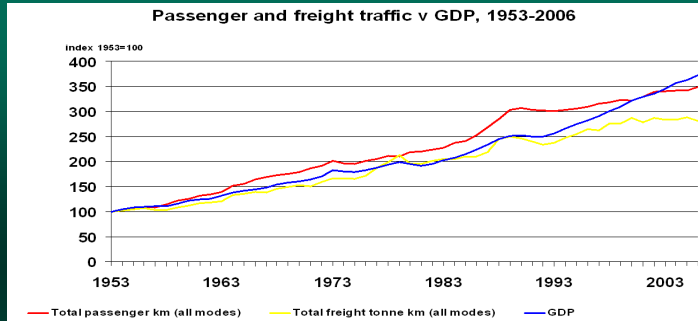


Total: 173.3 MtCO₂

Includes UK and international emissions 2007

Other includes LPG, other road vehicle engines and other mobile sources and machinery

Strategic drivers ... & biggest challenge



GROWTH



WITHOUT CARBON



The CO₂ policy package...

**Carbon pricing
(tax, trading,
regulation)**

Biofuels



Fiscal measures



Emissions Trading



**Technology
and
innovation**

Vehicle standards



Procurement



**Remove
barriers to
change**

Information



**'Smarter
Choices'**



Alternatives



Be clear about your commitment to the challenge of climate change

Be committed to targets to improve your CO₂ efficiency An example of a leading supply chain organisation

Our Industry

- The transport sector...
- ...has a share of 14 percent in global carbon emissions
 - ...plays an important role in supporting the challenge of climate change
 - ...is faced with increasing climate focused legislation
 - ...experiences growing customer awareness and requests for strategic support

Our Goals

- Improving the carbon efficiency of the company and its business partners
- 30 % by 2020**
- Intermediate step: improving carbon efficiency
- 10 % by 2012**



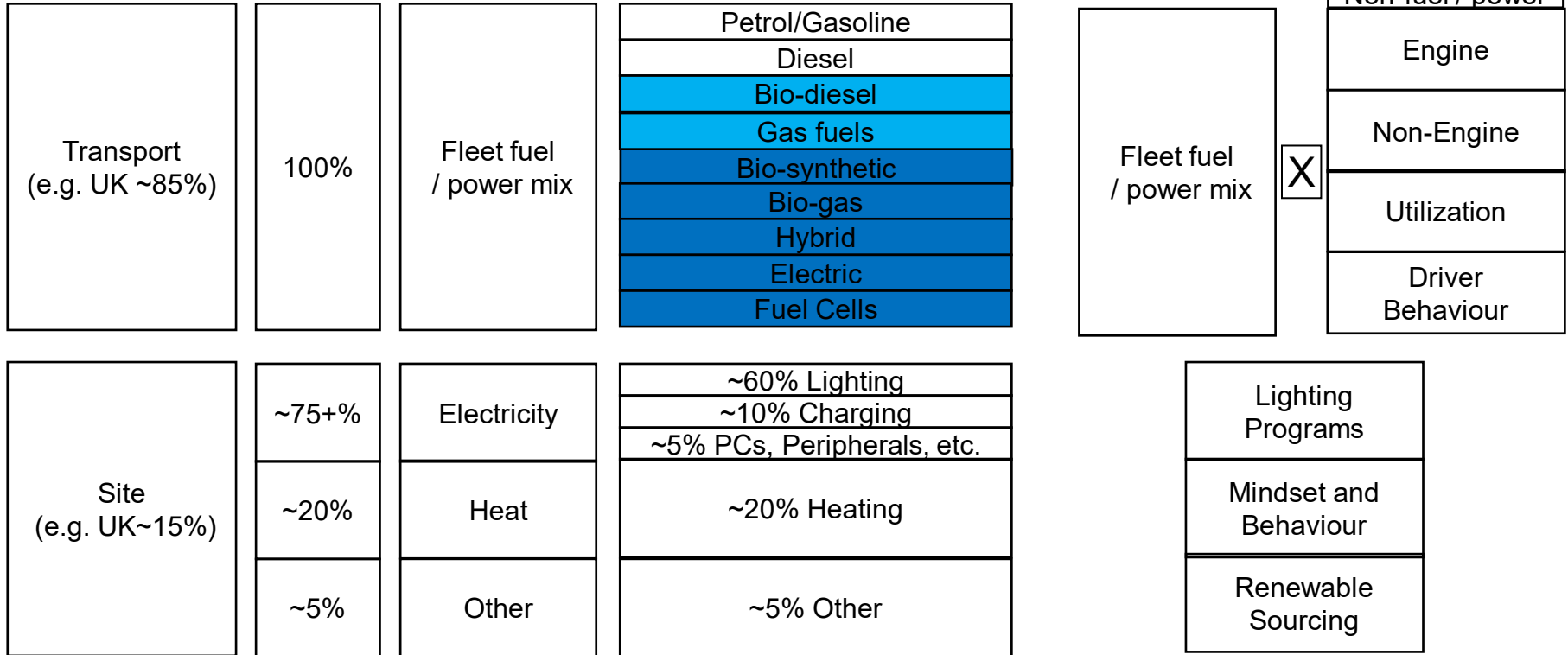
Our Program

- Examples of carbon efficiency programs can include:
- Driver training
 - Alternative fuels and technologies
 - Network optimization
 - Efficient lighting technology
 - Employee engagement programs including 'switch off' campaigns
 - Proactive customer support

Being Passionate about Environment

- to drive your efficiency

With 8000 trucks and driving 435 million miles you need to be....



- **Transport** abatements: focus across fleet on non-fuel/power opportunities and then selected opportunities to shift the fuel/power mix
- **Site** abatements: focus on reducing power and heat consumption through lighting programs and changes in behaviour, supplemented by renewable sourcing opportunities

Biggest Impact on our CO2 emissions?

Do your ~~DIVERS~~ Drivers wear these to work?



Fuel Efficiency Training Programme

Engage with your drivers- measure their performances & train them



Creating a Green Fleet – Go back to basics!!

DHL
EXCEL SUPPLY CHAIN


Creating a Green Fleet in DSC

Changes to Operational Controls

DHL supply chain increased its vehicle/trailer inspection from a 10 wk standard to 13 wks*

Benefits:

- **Financial cost saving:**
 - Reduced maintenance charges
 - Reduced driver cost to deliver
 - Reduced collection & delivery charges
 - Reduced Fuel spend in travelling to / from service centre
- **Reduced CO2**
 - Less fuel/CO2 in vehicle movement to workshops
 - Less CO2 in workshop operations



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DHL
EXCEL SUPPLY CHAIN

Creating a Green Fleet in DSC

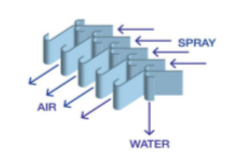
Axle Alignment Programme & Spray Suppression

LASALIGN

- As fuel prices increase so the re-checking of axle alignment becomes a cost effective way to ensure minimised rolling resistance and reduced tyre wear
- The process involves using laser beams to ensure all wheels are aligned correctly to the chassis. (see diagram)

1 degree out = 3% fuel loss
2 degrees out = 8% fuel loss

- Spraydown is a new concept in spray suppression flaps on trial within the fleet, designed to more effectively cut down on road spray, but also to reduce the aerodynamic drag caused by conventional flaps.
- Vertical flutes in the plastic flaps capture water and direct it to ground, whilst allowing air to flow freely through



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EXCEL SUPPLY CHAIN

Creating a Green fleet in DSC

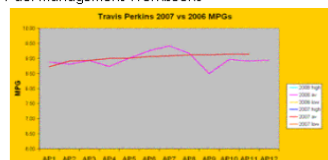
Fleet Management improvements under implementation to meet CO2 targets

Fuel Management Programme

Fuel management Toolkit CD with modular information and teaching elements



Fuel management Workbooks



3-5% yr on yr improvement
Case Studies available on the portal

Speed reduction trials

Speed limiter reset
85kph vs 90kph
Around 3000 trucks reset
So far and increasing rapidly
Generally 2-3% fuel/CO2 savings

GO GREEN

Climate Protection by DHL

This DHL vehicle is limited to 85 kph to save on fuel consumption and carbon emissions.

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DHL
EXCEL SUPPLY CHAIN

Creating a Green Fleet in DSC

Application of Telematics Systems

Previous niche application of telematics systems such as Isotrak has been some benefit to fuel economy

Now in conjunction with DSC IT we are assessing adoption of latest generation telematics from Microlise:

- Better reporting processes
- Real time exception reports
- Link to Digital tachograph for driver ID and drivers hours reports
- Driver behaviour assessment
- Full benchmarking capability
- Detail route analysis
- Potential fine tuning carbon reduction

microlise
solutions that deliver

SAFE & ECONOMIC DRIVING REPORT

VEHICLE: DK06RAX 10th Nov - 16th Nov 2008
Total Mile: 4849 Total Engine Hours: 78.0h Total Driving Hours: 68.12 MPG: 6.5

DRIVER	START TIME	END TIME	MILEAGE	MPG	CO2 (g/km)	CO2 (g/kwh)	CO2 (g/kwh)	CO2 (g/kwh)	CO2 (g/kwh)
DRIVER 1	08:00	12:00	100	6.5	180	180	180	180	180
DRIVER 2	13:00	17:00	100	6.5	180	180	180	180	180
DRIVER 3	18:00	22:00	100	6.5	180	180	180	180	180
DRIVER 4	23:00	03:00	100	6.5	180	180	180	180	180
DRIVER 5	04:00	08:00	100	6.5	180	180	180	180	180
DRIVER 6	09:00	13:00	100	6.5	180	180	180	180	180
DRIVER 7	14:00	18:00	100	6.5	180	180	180	180	180
DRIVER 8	19:00	23:00	100	6.5	180	180	180	180	180
DRIVER 9	00:00	04:00	100	6.5	180	180	180	180	180
DRIVER 10	05:00	09:00	100	6.5	180	180	180	180	180
DRIVER 11	10:00	14:00	100	6.5	180	180	180	180	180
DRIVER 12	15:00	19:00	100	6.5	180	180	180	180	180
DRIVER 13	20:00	24:00	100	6.5	180	180	180	180	180
DRIVER 14	01:00	05:00	100	6.5	180	180	180	180	180
DRIVER 15	06:00	10:00	100	6.5	180	180	180	180	180
DRIVER 16	11:00	15:00	100	6.5	180	180	180	180	180
DRIVER 17	16:00	20:00	100	6.5	180	180	180	180	180
DRIVER 18	21:00	01:00	100	6.5	180	180	180	180	180
DRIVER 19	02:00	06:00	100	6.5	180	180	180	180	180
DRIVER 20	07:00	11:00	100	6.5	180	180	180	180	180
DRIVER 21	12:00	16:00	100	6.5	180	180	180	180	180
DRIVER 22	17:00	21:00	100	6.5	180	180	180	180	180
DRIVER 23	22:00	02:00	100	6.5	180	180	180	180	180
DRIVER 24	03:00	07:00	100	6.5	180	180	180	180	180
DRIVER 25	08:00	12:00	100	6.5	180	180	180	180	180
DRIVER 26	13:00	17:00	100	6.5	180	180	180	180	180
DRIVER 27	18:00	22:00	100	6.5	180	180	180	180	180
DRIVER 28	23:00	03:00	100	6.5	180	180	180	180	180
DRIVER 29	04:00	08:00	100	6.5	180	180	180	180	180
DRIVER 30	09:00	13:00	100	6.5	180	180	180	180	180
DRIVER 31	14:00	18:00	100	6.5	180	180	180	180	180
DRIVER 32	19:00	23:00	100	6.5	180	180	180	180	180
DRIVER 33	00:00	04:00	100	6.5	180	180	180	180	180
DRIVER 34	05:00	09:00	100	6.5	180	180	180	180	180
DRIVER 35	10:00	14:00	100	6.5	180	180	180	180	180
DRIVER 36	15:00	19:00	100	6.5	180	180	180	180	180
DRIVER 37	20:00	24:00	100	6.5	180	180	180	180	180
DRIVER 38	01:00	05:00	100	6.5	180	180	180	180	180
DRIVER 39	06:00	10:00	100	6.5	180	180	180	180	180
DRIVER 40	11:00	15:00	100	6.5	180	180	180	180	180
DRIVER 41	16:00	20:00	100	6.5	180	180	180	180	180
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DRIVER 46	17:00	21:00	100	6.5	180	180	180	180	180
DRIVER 47	22:00	02:00	100	6.5	180	180	180	180	180
DRIVER 48	03:00	07:00	100	6.5	180	180	180	180	180
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DRIVER 60	15:00	19:00	100	6.5	180	180	180	180	180
DRIVER 61	20:00	24:00	100	6.5	180	180	180	180	180
DRIVER 62	01:00	05:00	100	6.5	180	180	180	180	180
DRIVER 63	06:00	10:00	100	6.5	180	180	180	180	180
DRIVER 64	11:00	15:00	100	6.5	180	180	180	180	180
DRIVER 65	16:00	20:00	100	6.5	180	180	180	180	180
DRIVER 66	21:00	01:00	100	6.5	180	180	180	180	180
DRIVER 67	02:00	06:00	100	6.5	180	180	180	180	180
DRIVER 68	07:00	11:00	100	6.5	180	180	180	180	180
DRIVER 69	12:00	16:00	100	6.5	180	180	180	180	180
DRIVER 70	17:00	21:00	100	6.5	180	180	180	180	180
DRIVER 71	22:00	02:00	100	6.5	180	180	180	180	180
DRIVER 72	03:00	07:00	100	6.5	180	180	180	180	180
DRIVER 73	08:00	12:00	100	6.5	180	180	180	180	180
DRIVER 74	13:00	17:00	100	6.5	180	180	180	180	180
DRIVER 75	18:00	22:00	100	6.5	180	180	180	180	180
DRIVER 76	23:00	03:00	100	6.5	180	180	180	180	180
DRIVER 77	04:00	08:00	100	6.5	180	180	180	180	180
DRIVER 78	09:00	13:00	100	6.5	180	180	180	180	180
DRIVER 79	14:00	18:00	100	6.5	180	180	180	180	180
DRIVER 80	19:00	23:00	100	6.5	180	180	180	180	180
DRIVER 81	00:00	04:00	100	6.5	180	180	180	180	180
DRIVER 82	05:00	09:00	100	6.5	180	180	180	180	180
DRIVER 83	10:00	14:00	100	6.5	180	180	180	180	180
DRIVER 84	15:00	19:00	100	6.5	180	180	180	180	180
DRIVER 85	20:00	24:00	100	6.5	180	180	180	180	180
DRIVER 86	01:00	05:00	100	6.5	180	180	180	180	180
DRIVER 87	06:00	10:00	100	6.5	180	180	180	180	180
DRIVER 88	11:00	15:00	100	6.5	180	180	180	180	180
DRIVER 89	16:00	20:00	100	6.5	180	180	180	180	180
DRIVER 90	21:00	01:00	100	6.5	180	180	180	180	180
DRIVER 91	02:00	06:00	100	6.5	180	180	180	180	180
DRIVER 92	07:00	11:00	100	6.5	180	180	180	180	180
DRIVER 93	12:00	16:00	100	6.5	180	180	180	180	180
DRIVER 94	17:00	21:00	100	6.5	180	180	180	180	180
DRIVER 95	22:00	02:00	100	6.5	180	180	180	180	180
DRIVER 96	03:00	07:00	100	6.5	180	180	180	180	180
DRIVER 97	08:00	12:00	100	6.5	180	180	180	180	180
DRIVER 98	13:00	17:00	100	6.5	180	180	180	180	180
DRIVER 99	18:00	22:00	100	6.5	180	180	180	180	180
DRIVER 100	23:00	03:00	100	6.5	180	180	180	180	180

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Embrace some new trains of thought...

The “Teardrop” trailer revolution

“Teardrop” trailer

Designed for aerodynamic air flow

Available in :

- Curtainsiders
- Boxed
- Reefers
- Rigid

Tested extensively on both test track and operations

- Performances vary between 6 -12% on the road

Drivers like to drive them

- Smoother drive when at top speed
- Prestige
- Ability to do longer runs without filling up

Made by Don Bur

- Own the patent on the shape
- 1-1.5% cost increase
- Average on over 400 operating giving a 9% improvement



Don't dismiss the old ways...

The Battery is Back!



Smiths 9t electric vehicle

- Body made from recycled plastic material
- Research commissioned 9t Newton Electric Vehicle has a carbon footprint of 44% less than the equivalent diesel vehicle
- The vehicle will save 50 tonnes of CO2 emissions per annum

Currently 15 all electrical vehicles operating

- Vehicles that start and end their day at a depot location
 - Vehicles that do less than 100 miles per-day
 - Operating in congested areas, typically inner city and urban areas
 - Lots of starts and stops – significant idle time
 - Multiple drops/collections
 - New Lithium Ion batteries improving distance capability and reduced charge cycles
-

Challenge for new..

Hybrid Trucks- It save you the 30% fuel but at what cost?

The truck industry is on the verge of a revolutionary change in technology with the development of hybrid truck drive-lines.

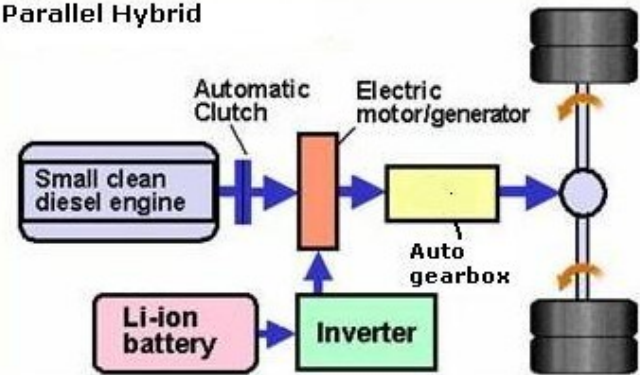
Today, operating within the UK are small numbers of both 7.5T and an 18T rigid vehicles

These will play a very significant part in the future of sustainable distribution

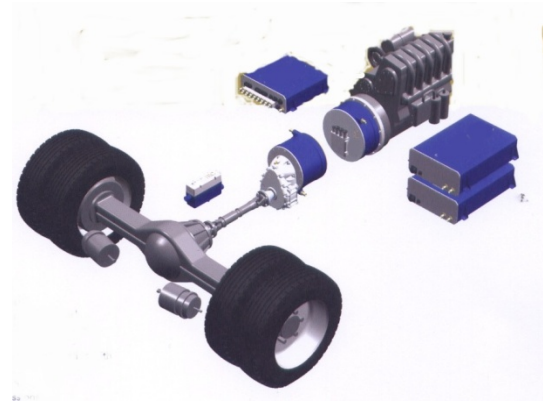
- Potential for up to 30% less CO₂, initial tests delivering 18-20%
- Lower noise emissions
- Reduced mechanical wear

Downside – at the moment the costs are simply uneconomic for commercial operations

Parallel Hybrid

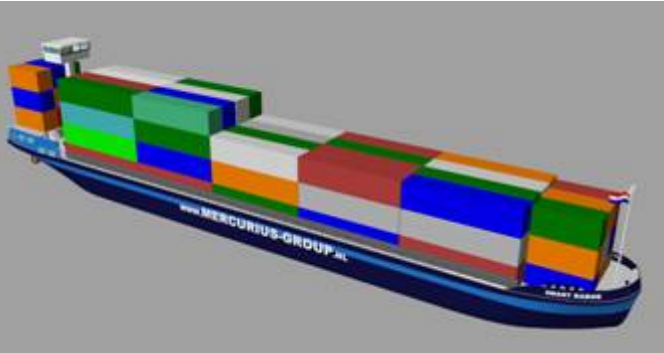


Series Hybrid



But what else could we really be doing?

Creating an “Integrated” transport network



ISO Containers – 20', 40', 45', 48' & 53'



ISO Containers – 20', 40', 45', 48' & 53'



ISO Containers – 20' & 40'
(45' subject to Indivisible Load criteria
National transport only)

Longer trailer concept

Legal, Moral & Financial necessity?

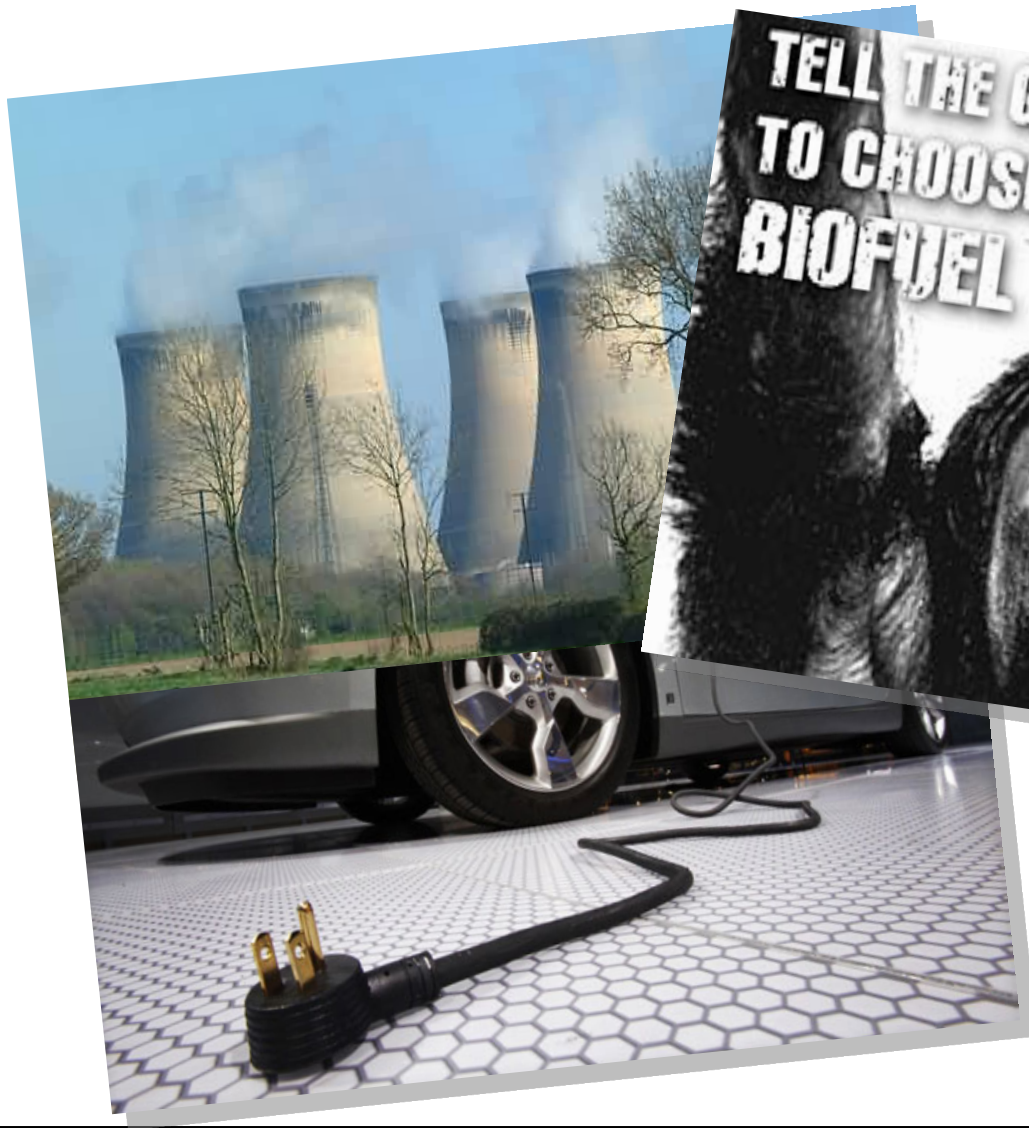


- ***Proposes an increase in overall length for articulated combinations by 1.5m to 18.0m***
- ***Will allow wider use of 45 ft and 48 ft containers***
- ***Will allow an increased quantity of Euro Pallets to be transported (37 vs 33)***
- ***Will comply with existing EU manoeuvrability requirements***
- ***Will not create an adverse road safety hazard. Most road users will not be aware of the increased length. The 18.0m articulated vehicle is still shorter than the current maximum length of truck – trailer combinations (18.75m)***
- ***Does not demand special driving techniques***
- ***Existing road safety ADAS systems remain applicable***
- ***Potential to reduce the overall number of vehicles on the road by up to 10%***
- ***Existing road networks and installations (motorways, parking areas, bridges or tunnels) do not have to be modified***

Yet the UK government lags behind, with trials across many major European countries including Germany

Critique...

on green policies



Climate Change Adaptation

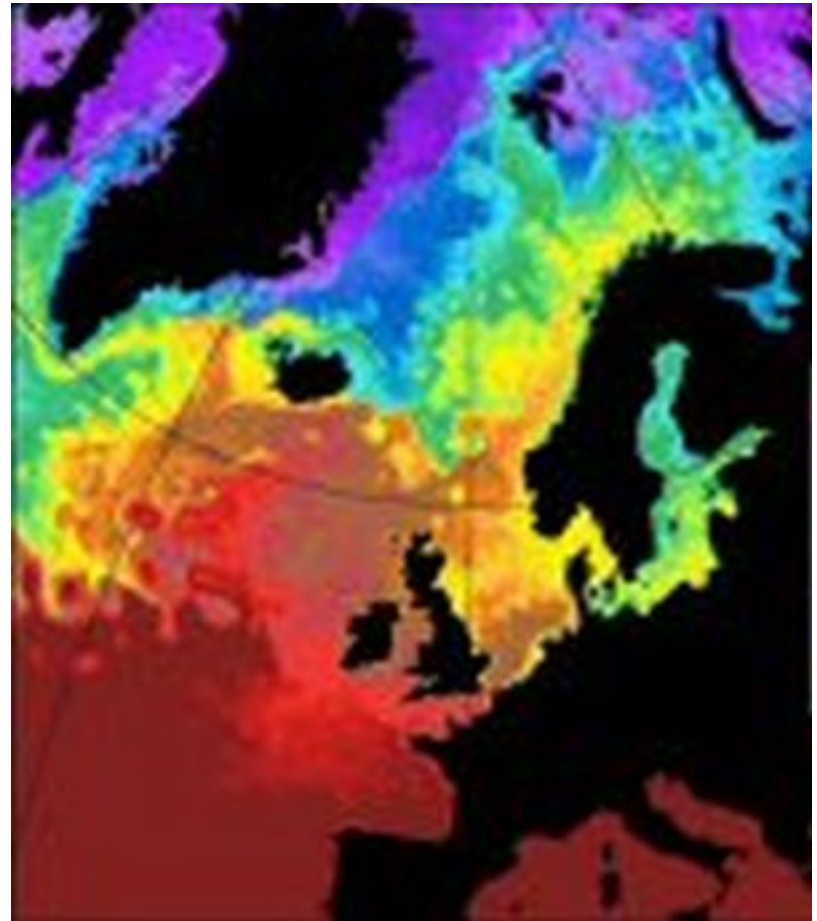
New UK climate change projections published on 18 June

By 2050, there is 50% probability that average summer highs will increase between 3.1 and 3.8°C

Average surface temperature will rise by 2°C whatever mitigation steps we take.

Increased localised flooding, storm surges, heat waves.

Therefore we must prepare our transport systems for this future ('adaptation'), and address likely vulnerabilities.



Or else we'll finish up with this ...



Thank you for your attention

