Future Highways Research Group

FHRG Waypoint Meeting: Q1, 2023

Hybrid Meeting: Virtual & Physical Meeting @ Cranfield University

ADEPT / Proving Research Partnership

Agenda

- **Welcome & Introductions (Andy Perrin)**
- **Sector News (Dominic Browne, Editor, Highways Magazine)**
- **FHRG Members (Open Discussion)**
  - Challenges for 2023.
  - Sharing best practice (Jon Evans, MHA+).
  - Emeritus membership status.
- **Human Capital Management Update**
  - Key themes, outputs, and next steps (Karen Farquharson, Proving).
  - Diversity in the workforce (Karen Hopley, Amey).
- **Future Fleet & Fuels**
  - Sector survey; key messages and outputs (Paul Rusted & Karen Farquharson).
  - The challenges for EV / low carbon fleet (Simon Wilson, Proving).
- **Comfort Break**

Agenda
Continued…

- **Synthetic Fuels & Telematics: Meeting the Immediate Challenges**
  - Synthetic fuels; a drop-in replacement for diesel (Shell).
  - Telematics; informing efficient operations (MachineMax).
- **Recycled & Reused Materials: Membership Survey**
  - Proposed sector survey (Simon Wilson, Proving).
- **VFM Assessment for Frameworks (Andy Perrin, Proving)**
  - New assessment framework overview.
  - Availability, deployment, and next steps.
- **Carbon Analyser and CCAS (Simon Wilson, FHRG Research Director)**
  - Key lessons learnt (Seven-Authority Trial, Vic Walsh & Simon Wilson).
  - Standard Process vs Simplified Process Models
  - Next Steps, getting involved & Carbon Analyser rollout.
  - Expansion for Waste & Recycling Services (Norse).
- **A.O.B & Next Meeting**
- **Lunch**

Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

PART OF TRANSPORT NETWORK

Member Updates: Open Discussion

Future Highways Research Group

Discussion Points

- **News from FHRG members?**
- **Challenges for 2023.**
  - Open discussion.
- **Emeritus membership status.**

MHA+: Sharing Best Practice

Jon Evans

- **MHA: Term Community Service Improvement Group recommencing.**
- **Next meeting: 15th February 14:00 – 16:00.**
- **Areas of Focus: Operational delivery, Contract management, procurement models and sharing best practice.**
- **Member survey issued: Contract duration / model type with Strengths and Weaknesses Question.**
- **Looking for Attendees: In service contract Managers and operational delivery managers directly responsible for Highway maintenance activity.**

Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

PART OF TRANSPORT NETWORK

Human Capital Management: Research Theme Update

Karen Farquharson (Research Leader)

Karen Hopley (People Director, Transport Infrastructure, Amey)

Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

PART OF TRANSPORT NETWORK

Survey Findings (Update)

Key Points Arising

Status of Local Highways Authority Sector

- **External sector challenges**
  - Cost of living crisis.
    - **Scale of pay is becoming even more critical for staff, particularly for the lower-paid.**
  - Increasing difficulty recruiting even agency staff.
  - Inflation and energy crisis – operating costs 20%+.
- **The move to fully outsource many (or all) highways services has significantly contributed to the problem.**
  - Many LHA's are progressively de-skilling.
  - The roles regarded as challenging and interesting have largely been outsourced.
  - A small client team makes recruitment more challenging.
    - **Visible evidence of a lack of career progression.**
    - **Absence of a team can make it a 'lonely' place to work.**
- **Seeing a steady progression of LHA's to some form of 'Mixed Economy' operating and delivery model.**
  - Member preference to retain or move customer facing services in-house, (e.g. re-active maintenance).

Status of Local Highways Authority Sector (cont..)

- **Recognition that the service needs an adequately resourced and intelligent client / commissioning team.**
  - Commercial and strategic acumen to maximise the VfM realised from external contracts.
  - Increasing emphasis on effective stakeholder management skills.
    - **Member engagement, local knowledge and understanding (communities, network, priorities and constraints).**
- **Evidence that a purely engineering background may lead to reduced career progression at the very senior levels of local government.**
  - Increasing requirement for experience of ‘place’ and/or ‘environment’.
- **LGA: 2021/22 Local Government Workforce Survey, published 19th January 2022.**
  - Limited reference to the Highways Sector.
  - 58% of authority respondents (119 Councils) had difficulty in recruiting ‘engineering professionals’.
  - 81% offer targeted market supplement (across the authority).

Apprenticeships and Training

- **Recognised across the sector that there are significant challenges in accessing local, quality and relevant training, particularly at operator level.**
  - Lack of clear and relevant educational and professional progression.
  - Groundworker apprenticeships have limited highways content, focus on construction.
    - 35 registered apprenticeship providers.
  - Closure of level 2 apprenticeships (groundworkers) due to a lack suitable of FE /HE lecturers.
    - *Interview with Steve Elliot at Derby College*.
  - Lecturers increasingly are not up-to-date in new technologies and techniques.
    - **Reluctance by some FE colleges to invite sector experts to assist in training.**
    - **College pre-requisite that lecturers have teaching not just presentational skills.**
- **Request to remove the requirement to have GSCE pass in Maths and English for Level 2 Groundworker apprenticeships.**
  - Lobby government through ADEPT and Highways Sector Council?

Under-40 Roundtable Discussion (August 2022)

- **Good representation from women.**
  - Many had entered the sector by ‘accident’.
  - Keen to build a career in engineering / highways-related services.
- **Flexible working (hours and location) is highly valued.**
  - Willing to take a slightly lower salary.
- **Working for the good of their community and local environment is often an important consideration.**
- **Seeking opportunities for career progression.**
  - Not necessarily linear progression.
    - Some seeking portfolio careers.
  - Development of skills and experience in adjacent functions/ sector is seen as highly beneficial.
  - Require financial support and mentoring support from employers.
- **Improve the quality, content and accessibility of training programmes.**
  - Specifically current apprenticeships, NVQ’s and HNC’s in civil engineering.

HCM Challenges – Viable Solutions

Future Highways Research Group

Solutions
(Local Authority Perspective)

Raise the Profile / Attractiveness of Sector

- Redefine the roles and opportunities. (Skills, qualifications, background)
- Re-consider the channel, placing and content of communications and job advertisements.
- Early and active promotion within schools / colleges / universities / apprenticeship schemes.

Talent Development 'Grow Your Own'

- Source from a more diverse pool of potential resource. (Journey to Work)
- Actively promote the benefits of working for local government. (e.g. flexibility /pensions/ security)
- Ensure continued skills development and career progression to retain staff.
- Provide training and mentoring support. (Cost and resource implications)

Focused Sector Engagement & Collaboration

- Rotational secondments between LHA, private sector and FE colleges / universities.
- Jointly develop relevant training programmes and qualifications, particularly at operator level. (design, funding and delivery)
- Develop relationships and partnerships with new sector entrants and specialists.

Skills Sharing (between LHA's, through Alliances)

- Jointly acquire specialist resources, and share knowledge.
- Ensure equitable availability of resource between authorities.
- Role for sector bodies and alliances?

LGA Workforce Survey (119 Responses)

Future Highways Research Group

Of the recruitment and retentions actions shown, which do you consider to be the most effective?

TOP 5	Single / Upper Tier Authorities
Flexible Working	27%
Market Supplements	21%
Targeted Recruitment Campaigns	17%
Career Frameworks	10%
Apprenticeships	8%

Relocation packages, personal development, ‘golden hello’, secondment, job re-design, government training schemes, estimated at 1-2% success rate.

Sector Initiatives

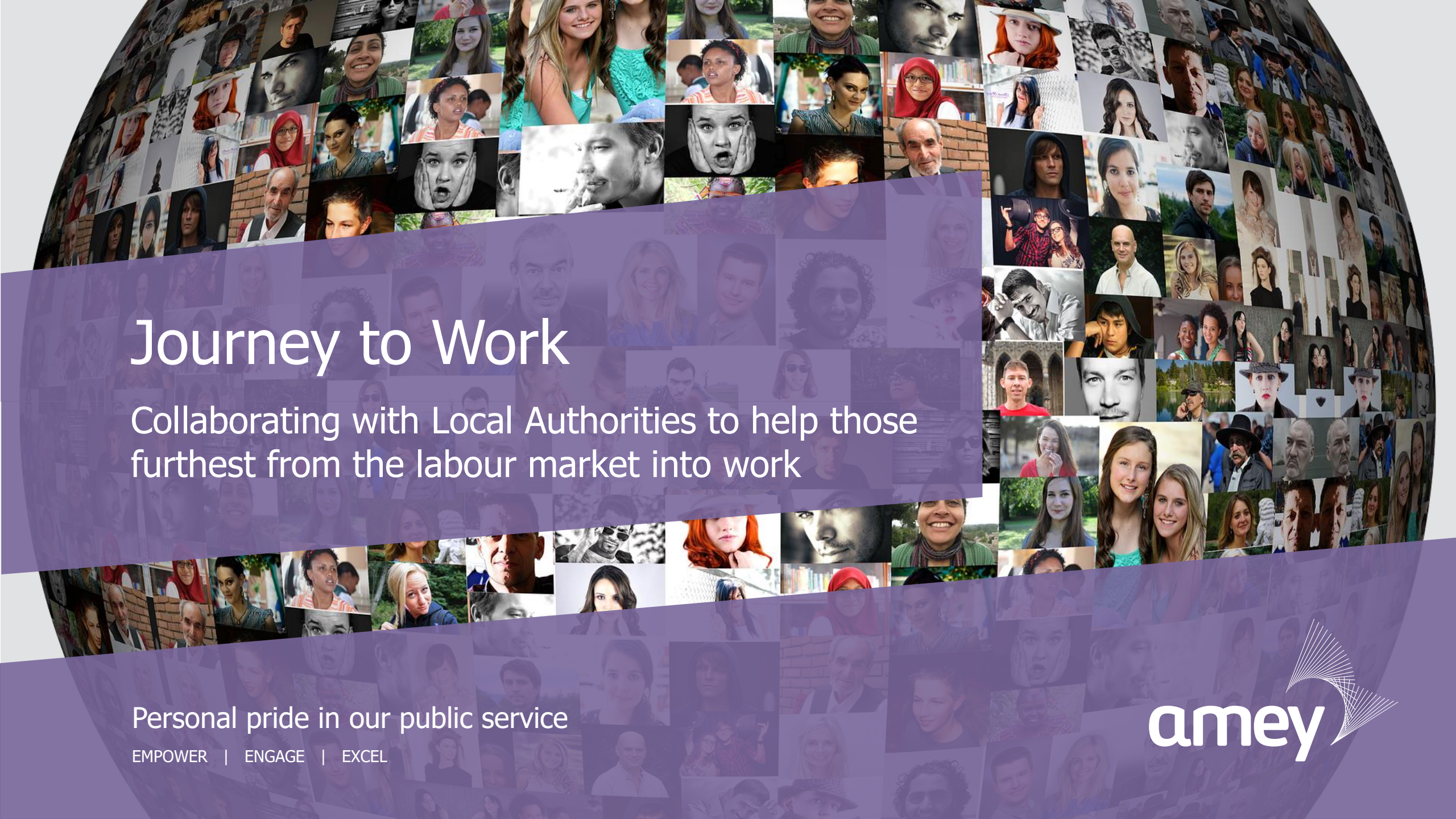
- **Highways Sector Council**
  - Highways Sector Council (HSC) Future Leaders Group Survey ‘To help understand how to make highways a career of choice’.
    - https://highwayssectorcouncil.com/wp-content/uploads/2022/11/HSC-Skills-Report_271022.pdf
  - ‘We need to work in greater collaboration as a sector to improve the highways brand, making it a career of choice irrespective of which part of the sector you join or work in. We can only do this with stronger alignment and partnership between the public and private sector, our clients and DfT with collective and agreed targets and commitments’.
  - HSC are keen to collaborate with the FHRG and Proving in identifying and implementing solutions.
- **England Economic Heartland (EEH).**
  - Undertaken a ‘Skills Sprint’ review to be completed by February 2023.
    Roads Academy is a joint initiative with the roads industry to develop current and future leaders.
- **TfWM Skills Academy**
  - https://www.tfwm.org.uk/who-we-are/what-we-do/transport-skills-academy/
  - Initially focused on e-learning and work experience.
- **Risk that the focus is on better educated, professional staff who are looking for a ‘career’, within the private sector.**

Sector Entry at Operator Level

- **Apprenticeships (Level 2)**
  - Access to relevant and quality training.
    - Who, how what and where?
  - Better use of the apprenticeship levy.
  - Remove the requirement for GSCE pass in maths and English.
  - Extension / tailoring of the University of Derby Asphalt and Pavement Foundation Degree Programme.
  - Role of HSC & ADEPT?
- **Journey to Work Initiative, Karen Hopley, Amey**

Journey To Work

Karen Hoply **(People Director, Transport Infrastructure, Amey)**



Journey to Work

Collaborating with Local Authorities to help those furthest from the labour market into work

Personal pride in our public service

EMPOWER | ENGAGE | EXCEL

amey

Long term unemployment is a problem in my local area

We have a good understanding of the reasons why people may be unemployed

We have good systems in my local authority for supporting people furthest from the labour market into work

We have good systems in my local authority area to support people furthest from the labour market once they are in work

Journey to Work events aim to provide those furthest from the labour market with the job search skills and support they need to secure employment.

Personal pride in our public service

EMPOWER | ENGAGE | EXCEL

amey

The benefits of helping this population into work are far reaching:

For communities – reduced crime and poverty, improved prosperity, health and education

For employers – filled vacancies, improved diversity and future skills

For local authorities – all of the above plus reduced costs

CV Writing Workshops

Interview Skills Workshops

Mental Health Support

Working Wardrobe or similar charity

Financial Advice & Guidance

Local Employers showcasing opportunities and interviewing for vacancies

Event Partners

- Staffordshire County Council
- South Staffordshire County Council
- Hays Recruitment Plc
- Wolverhampton Job Centre
- RMS Services Ltd

"Friendly, informative support to get me back in the workplace"

"Really helpful, found exactly what I was looking for"

Results

- 100 vacancies
- 18% offered jobs with Amey on the day
- 36% offered interviews/temp assignments with Hays on the day
- 85% attended workshops
- 14% offered jobs with Amey after the event

"As a county council one of our priorities is to ensure people have access to better skilled, better paid employment and so we were pleased to work with our partners at Amey and South Staffordshire Council to organise this free event. We hoped that made a difference to people attending - giving them new opportunities and broadening their career prospects."

Cllr David Williams, Cabinet Member for Highways, Transport and Business Transformation, Staffordshire County Council

What's next?

- Journey to Work roll out across the UK
- Expansion of Journey to Work events for school and college leavers
- Increased external organisation support
- Collaboration with Local Authorities to provide greater support to help people who are offered jobs stay in work

Collaboration is key to success, overcoming challenges and sharing benefits

Discussion:

How can we work together to:

Connect people with vacancies

Help people into work

Support them when they are in work

Share best practice

Tom’s Story

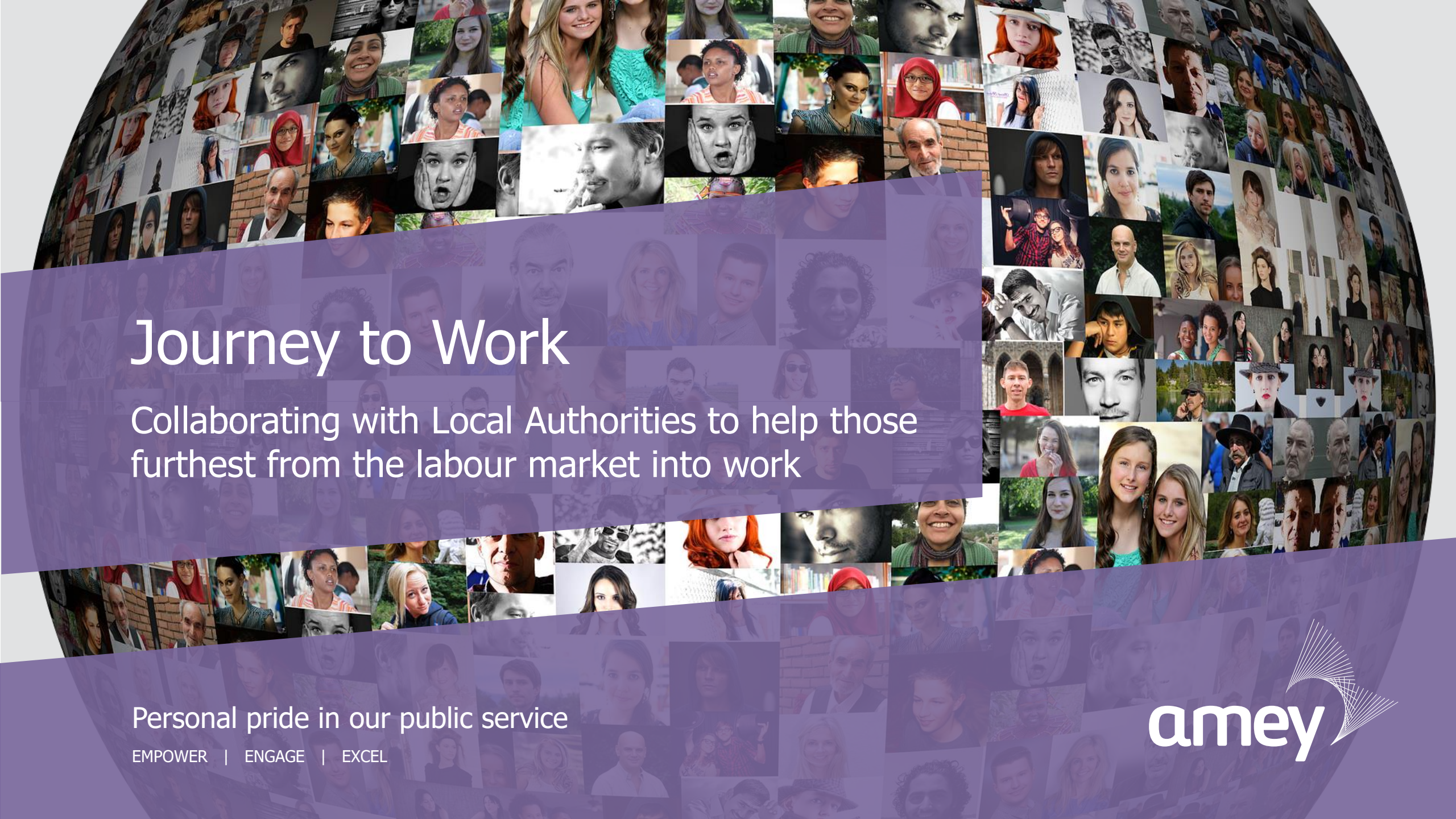
Our ask of you:

Give us access to those furthest from the labour market so that we can help them
Help us challenge barriers to getting people into work or training
Help us support people when they are in work to help them stay in work

Personal pride in our public service

EMPOWER | ENGAGE | EXCEL

amey



Journey to Work

Collaborating with Local Authorities to help those furthest from the labour market into work

Personal pride in our public service

EMPOWER | ENGAGE | EXCEL

amey

Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

PART OF TRANSPORT NETWORK

Future Fleet & Fuels

Future Highways Research Group

Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

PART OF TRANSPORT NETWORK

Future Fleet & Fuels: Sector Survey

Karen Farquharson (Research Leader)

Paul Rusted (Research Associate)

Introduction & Fleet Survey

Future Highways Research Group

- In early 2022 Proving engaged by a major midlands local authority to carry out a full review of their fleet operation.
- Brief included a survey sent to a number of authorities including all FHRG members.
- Initial 28 questions designed to cover the full range of fleet issues.
- Supplemented by additional questions about pool cars.
- 16 surveys returned.
- 8 comprehensive interviews carried out to provide qualitative data.

Authority Details

- City, County, District, Borough and Unitary Councils responded.
- All centralised fleet service for whole council.
- Most providing full range of fleet management, maintenance and compliance.
- Three with varying levels of maintenance by private sector partners.
- Unfortunately no authority with full or substantial provision by the private sector responded.
- No authority considering full or partial externalisation.
- Capital budgets varied but mainly influenced by replacement programme.
- Revenue budgets not related to size of fleet so more work required on corporate overheads.
- All but two had declared a climate emergency.

Details of Fleet

Future Highways Research Group

- Size of fleet varied between 100 - 1000+, but majority 500 - 1000.
- Plant varied from under 100 - 1000+.
- No correlation with type or size of authority.
- Depots varied from 1 - 10+. Over 10 usually large rural authorities but one district and one borough operating with over 10.
- Adoption of EV and ULEV limited with majority having less than 10% of fleet EV/ULEV and these were cars or light vans. Almost complete absence of larger vehicles.
- Only one authority had managed a complete shift to EV/ULEV.

Details of Fleet (Cont..)

- Many still considering scale of switch to EV/ULEV, others expecting only 25%.
- Interviews suggests fear of early adoption, increased price, range and durability as barriers.
- Some trialling of biodiesel being undertaken. Much interest in hydrogen but lack of availability a barrier. One authority fully switched to GTL with small number of EV's.
- Rapidly changing cost of fuel options hampering long term planning.
- Little evidence of depots being used to generate electricity. Corporate responsibility for depots and energy may be a barrier to holistic planning.
- Lack of distribution network capacity also highlighted as a major problem for EV shift.

Fleet Maintenance

Future Highways Research Group

- Majority of authorities using own workshops to maintain fleet and plant.
- Most using dealerships to cater for capacity issues.
- Leased fleet and plant often maintained by supplier.
- Almost universal use of external suppliers for tyres, LOLER, hydraulic hoses etc.
- No authorities operating a standard night shift but many have call out facility.
- Shift patterns vary with start ranging from 06.00hrs to 07.00hrs and finish ranged from 16.30hrs to 21.15hrs.
- Two authorities open Saturday mornings.
- Virtually all reporting difficulty with recruitment and retention especially with technicians.

Fleet Management

- **Virtually all authorities now purchasing outright with some support from prudential borrowing or receipts from depot sales.**
  - Some examples of hire or lease where outright purchase not possible or desirable.
- **One authority using contract hire with an element of flexible hire and one using operator leasing with a similar picture for plant,**
- **Widespread use of frameworks either collective or regional with some limited use of individual procurement.**
- **Procurement mainly to a standardised specification with some limited bespoke specifying.**
  - Three authorities were still procuring some highly bespoke vehicles.
- **No authorities had single badge policies because of procurement restrictions.**
- **Disposal mainly by auction with most seeing increased prices.**
  - Leased or hired vehicles and plant simply returned to supplier.
- **Most have own fuel tanks with some use of forecourts. One uses fuel cards.**

Fleet Management Systems and Telematics

Future Highways Research Group

- **Some consistency with fleet management systems with most using Tranman.**
  - Three using Asset Works, one Chevin Fleetwave and one R2C Online.
- **No consistency for telematics with a variety of systems being used and some using multiple systems.**
- **Those interviewed expressed reservations about usefulness of outputs.**

Grey Fleet and Pool Cars

Future Highways Research Group

- **Little involvement in grey fleet by fleet teams with only five having partial involvement.**
- **All authorities operating pool cars and two also had small vans available.**
- **Only one fleet team managed pool cars.**
  - For others it was a corporate or departmental function.
- **Booking systems ranged from the use of Outlook to Asset Works Motopool.**

Conclusions

Future Highways Research Group

- Management of fleet emerging as a critical element in efforts to reach net zero.
- Turbulence in energy markets impeding decision making.
- Widespread concern about some of the efficacy of emerging technologies.
- Staff recruitment and retention a sector wide issue.
- Telematics seen as a potentially valuable tool but not yet being effectively used across the sector.

Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

PART OF TRANSPORT NETWORK

Coffee Break

10 Minutes

Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

PART OF TRANSPORT NETWORK

Future Fuels & Transport: Electric, Hydrogen, Biofuels or Hybrids?

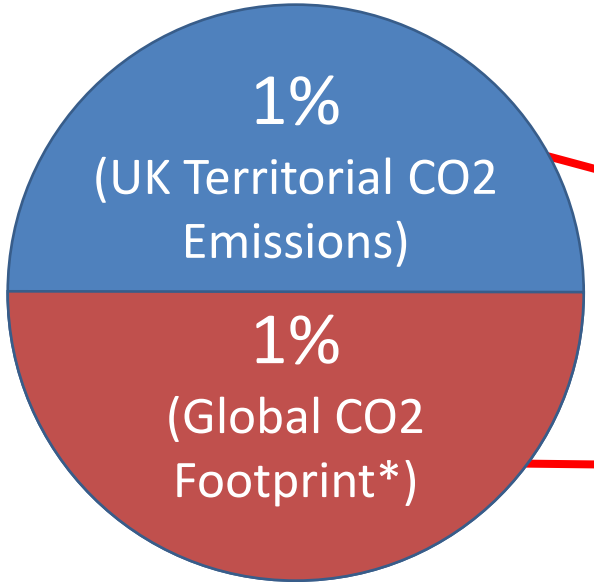
Simon Wilson (Research Programme Director)

The UK's Carbon Emissions

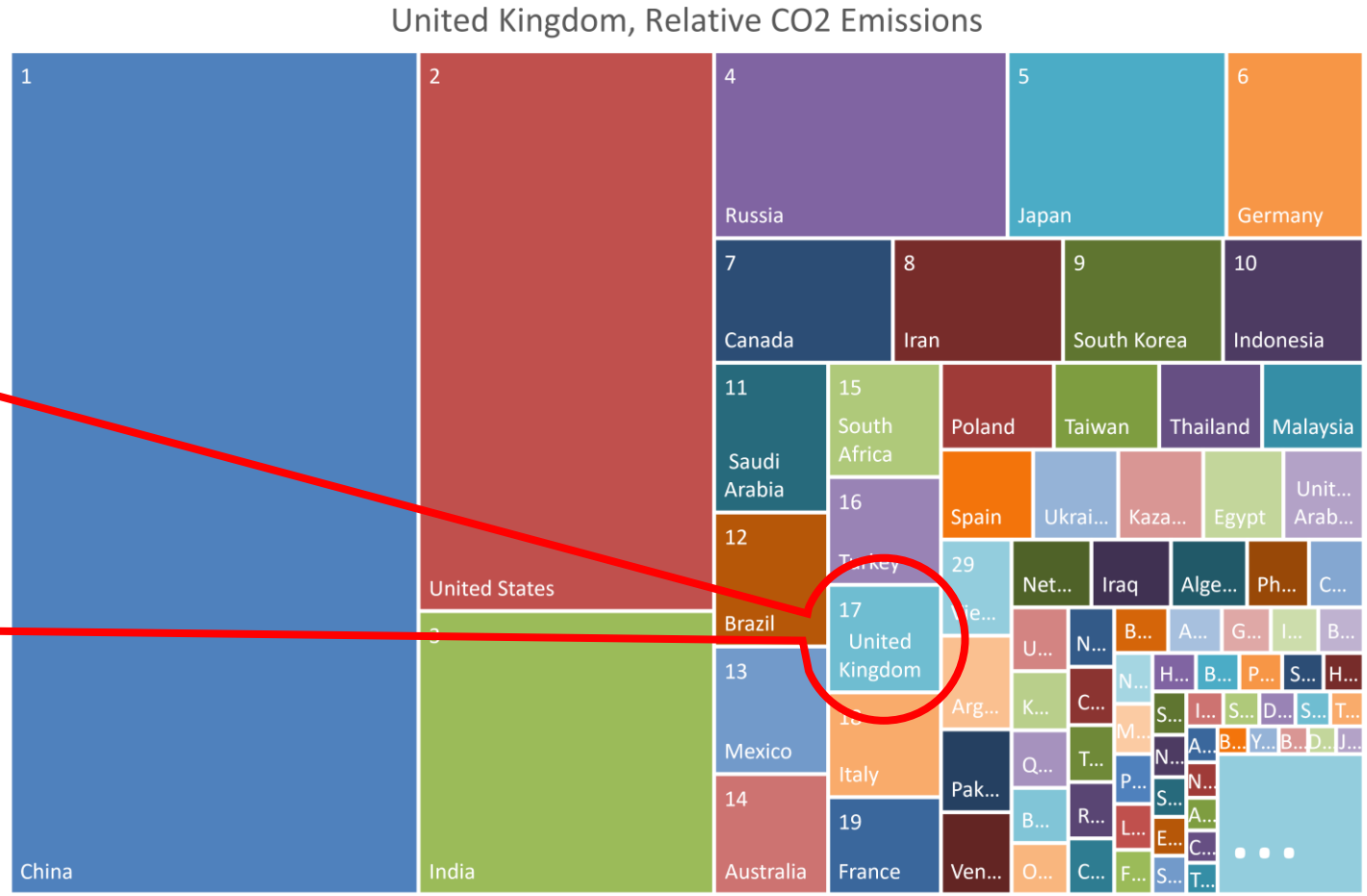
Context, 2023

Future Highways Research Group

The UK generates 36.3% from renewables.
(Quarter 3 2022, Energy Statement, GOV.UK)



34.3% of energy (oil equivalent) is used in transport.
(July 2022, BEIS, GOV.UK)

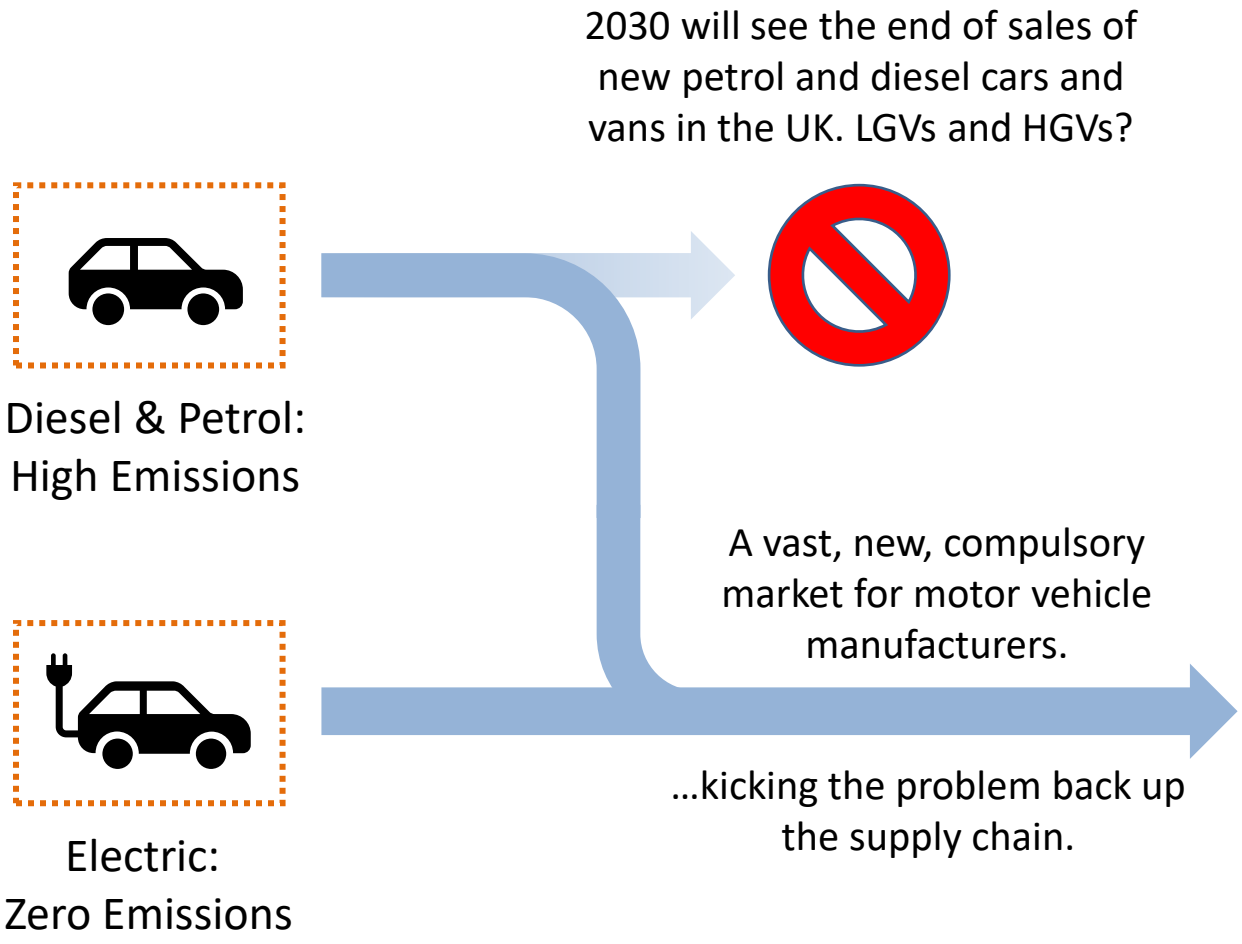


UK's Carbon Emissions
Continued…

- **By 2030 the UK will represent 0.75% of global carbon emissions.**
  - Continued investment in renewables, nuclear and electrically-powered equivalents.
  - While carbon emissions growth in Asia and South America will continue to accelerate.
- **"The key driver of emissions is not developed nations' energy consumption, it is the drive to escape poverty by developing nations".**
  - World Economic Forum, October 2022.
- **There are wider benefits for EV than just CO2 reductions.**
  - Clean air, reduced noise, increased performance, lower maintenance costs, etc…
  - Especially important when the carbon savings are fully analysed.
- **However, there are still significant barriers and complex, interdependent considerations.**
  - Poor EV infrastructure ("40+ years to rollout critical grid infrastructure", Steve Stead, SSE).
  - Near parity energy prices and taxes, limited ranges, complex, global supply chains.
  - Immature technologies and

“Zero Emissions” Vehicles?

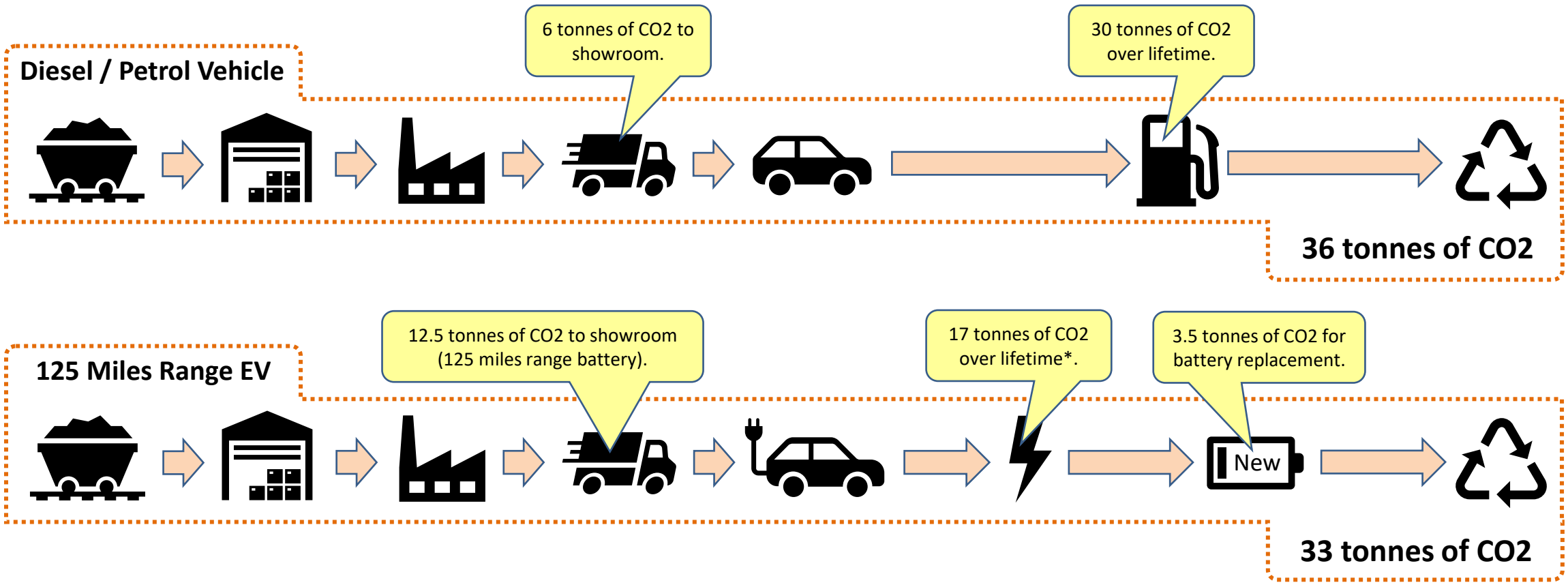
Electric vehicles are the future… but are they really zero emissions?



“Zero Emissions” Vehicles?

Cradle to Grave Emissions (Average 180K Miles)

Future Highways Research Group

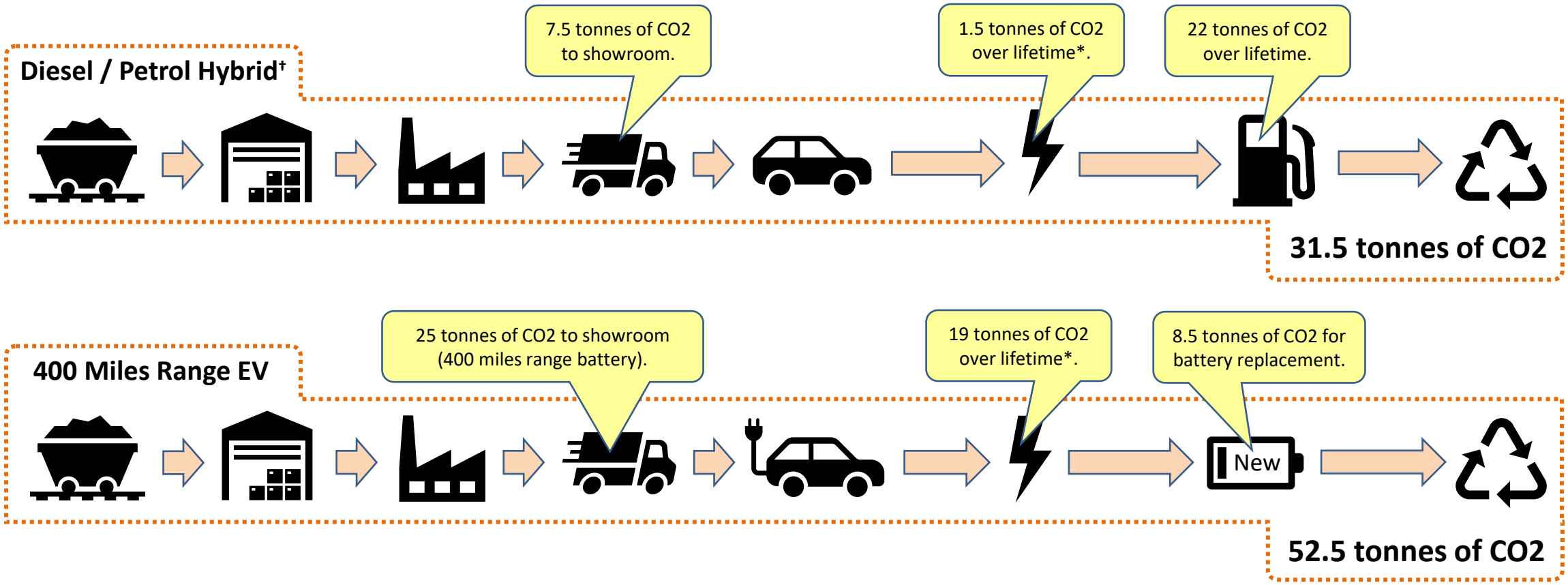


*Based on UK energy sources, 2022.

Dr Graham Conway (Automotive Division, Southwest Research Institute)

“Zero Emissions” Vehicles?

However…

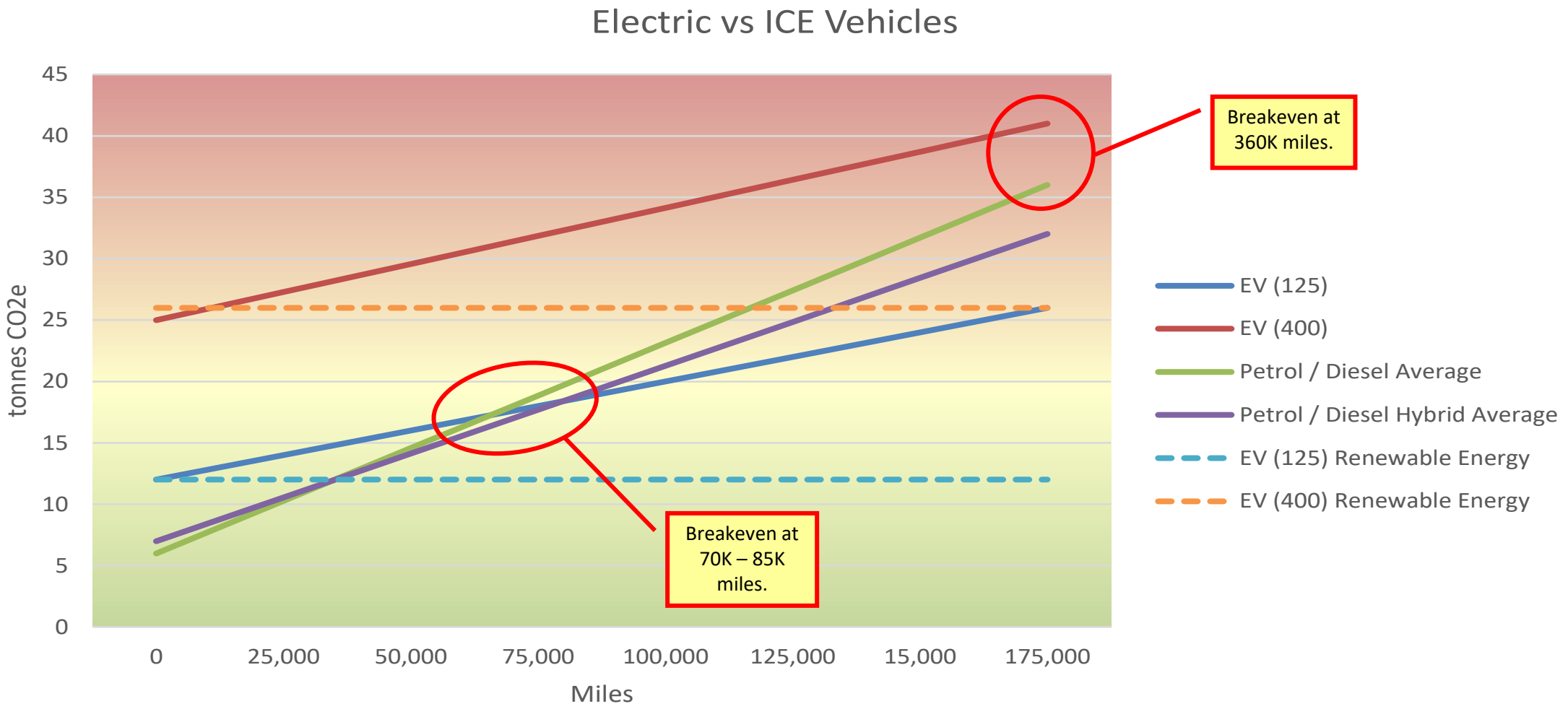


*Based on UK energy sources, 2022.

† Plug-in hybrid, 30 miles range.

Dr Graham Conway (Automotive Division, Southwest Research Institute)

Carbon Breakeven Analysis



Dr Graham Conway (Automotive Division, Southwest Research Institute)

Where does hydrogen fit?

Future Highways Research Group

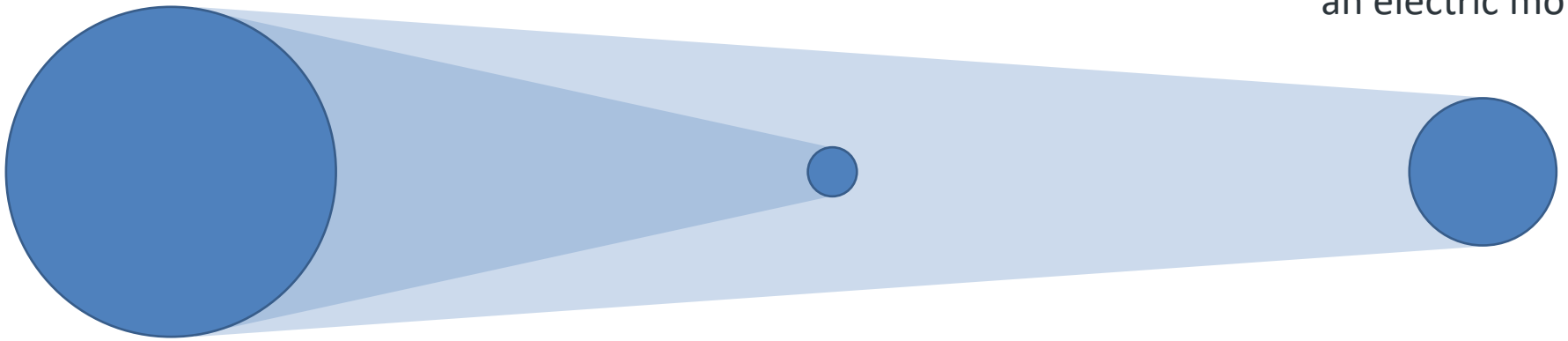
- **Hydrogen demand reached 94 million tonnes (Mt) in 2021, recovering to above pre-pandemic levels (91 Mt in 2019), and containing energy equal to about 2.5% of global final energy consumption.**
- **Most of the increase came from traditional uses in refining and industry, though demand for new applications (including transport) grew to about 40 thousand tonnes (up 60% from 2020, albeit from a low base).**
- **There are four main sources for the commercial production of hydrogen: natural gas, oil, coal, and electrolysis; which account for 48%, 30%, 18% and 4% of the world's hydrogen production respectively. Fossil fuels are the dominant source of industrial hydrogen.**
  - Steam reforming of natural gas and methane represents nearly 50% of all hydrogen production.
  - Electrolysis using renewable currently represents 0.5% of hydrogen production.
  - Current electrolysis techniques are between 18% and 25% efficient.
- **For hydrogen to contribute to net zero, it must be derived from entirely renewable sources.**
- **Hydrogen should not be considered a low carbon alternative… yet.**

A final thought on energy density…

American Physics Society, January 2023

Future Highways Research Group

Compensating for 15% petrol engine efficiency and the 80% efficiency of an electric motor…



Petrol Energy Density:
47.5 MJ/kg to 34.6 MJ/litre

Lithium Ion Polymer Energy Density:
0.3 MJ/kg to 0.4 MJ/litre

100 times the energy density of batteries.

…a battery with an energy storage density 1/5 of that of petrol would have the same range as a petrol-powered car.
"**We're not even close.**"

Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

PART OF TRANSPORT NETWORK

Synthetic Fuels & Telematics: Meeting the Immediate Challenges

Future Highways Research Group

Immediate Challenges & Solution Candidates

What can be done today?

- **Carbon and emissions reductions using biofuels / biofuel blends.**
  - Sustain and extend the service life of existing fleet vehicles.
  - Reducing the costs of process changes required to accommodate EV fleet vehicles.
- **Using vehicles and plant more efficiently.**
  - Significantly reducing the waste associated with inefficient scheduling and deployment.
  - Reduce vehicle, plant and equipment idling.
  - Optimise VPE utilisation.

Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

PART OF TRANSPORT NETWORK

Lower Carbon, Reduced Emissions Fuels

Umut Yavas (Global GTL Fuel MD Manager, Shell)

Dual Emissions Challenge

GLOBAL CLIMATE

Limiting the effects of the global climate crisis by reducing carbon emissions

LOCAL AIR QUALITY

Protecting human health by improving local air quality

Some sectors are hard to decarbonise

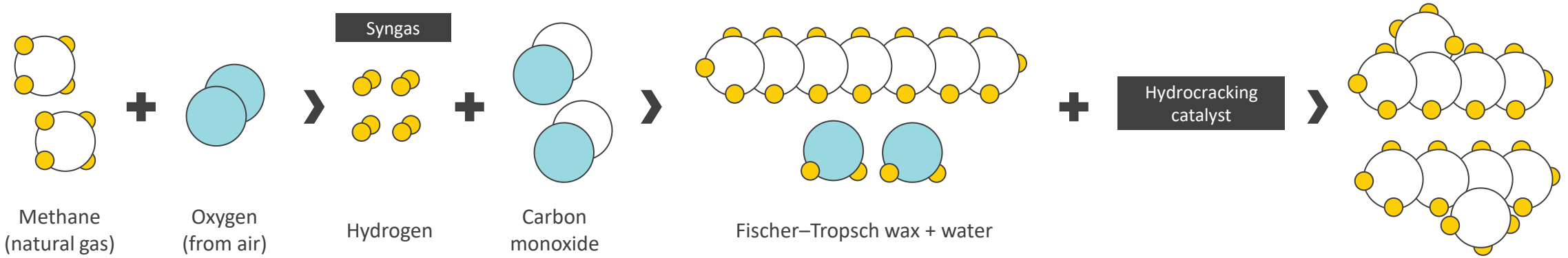
New diesel machinery is likely to be in service for decades

What can we do <u>today</u> to tackle emissions?

What is Shell GTL Fuel?

Shell GTL Fuel is a synthetic, cleaner-burning, drop-in diesel alternative made from natural gas.

Stage 1: Gasification | **Stage 2**: Synthesis | **Stage 3**: Hydrocracking and separation



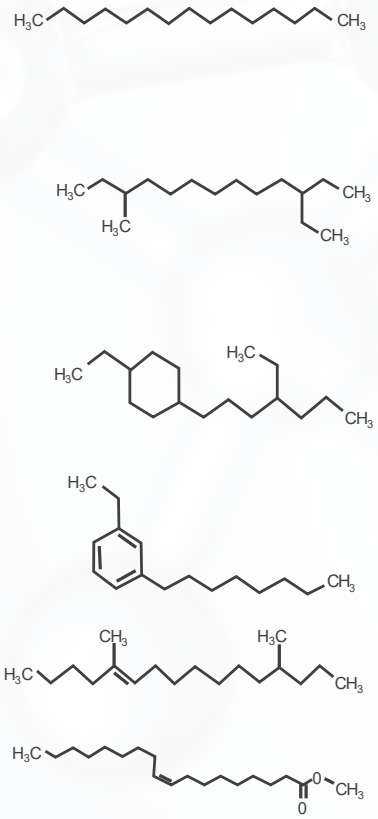
Abundant and secure feedstock

Established world-class production and supply chain

Shell operates the **world's first commercial-scale GTL plant**, Bintulu, Malaysia, and the **world's largest GTL plant,** Pearl, Qatar.

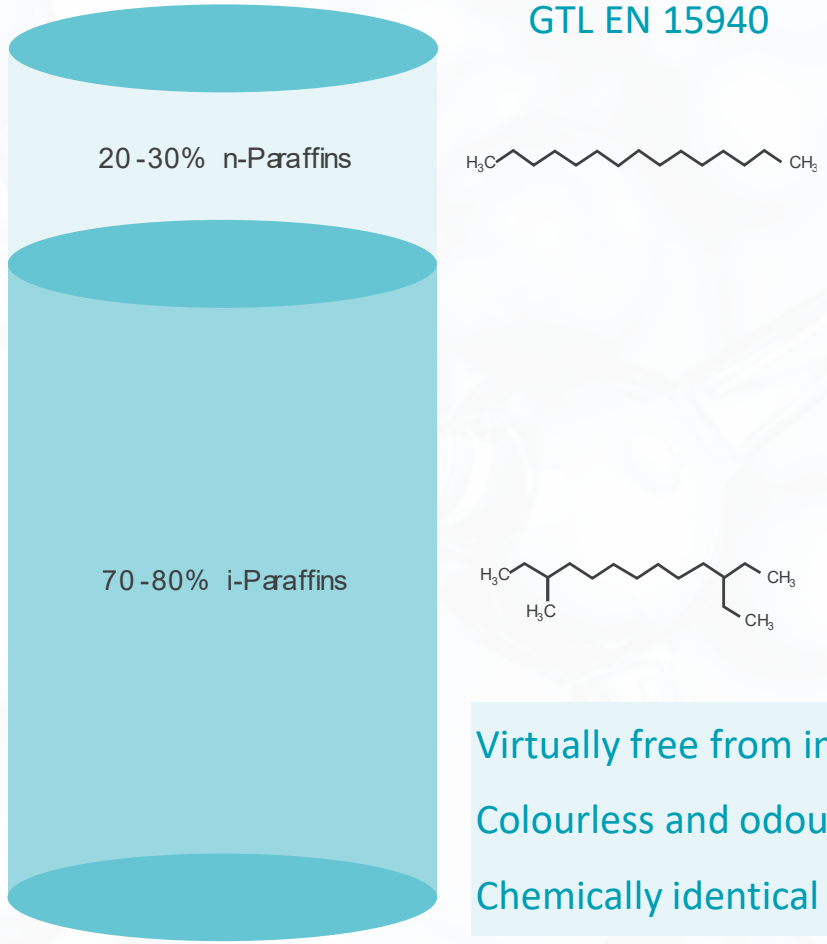
What is Shell GTL Fuel?

Diesel EN 590



+sulphur and other impurities

GTL EN 15940



Virtually free from impurities

Colourless and odourless

Chemically identical to HVO

What is HVO?

Hydrotreated vegetable Oil (HVO)
is second-generation (advanced) biofuel made from vegetable oils
or animal fats.
It is a drop-in alternative to diesel, offering:

- Up to 85% reduction in lifecycle greenhouse gas emissions.
- Fewer harmful emissions.

For large-volume customers, securing a reliable supply of 100% HVO fuel is challenging as:

- The emerging market demand is outstripping supply.
- Production and processing facilities need to be scaled up.

GTL Fuel and HVO: Perfect Partners

Shell GTL Fuel

Up to 43% lower lifecycle GHG emissions*

+

Up to 38% lower NOx

Up to 54% lower PM**

Better security of supply and a lower price*

Human-health, environmental, engine performance and **total-cost-of-ownership benefits.**

Drop-in solution, available today; chemically identical, both meeting the EN15940 standard, enabling them to be blended in any ratio and used in unmodified diesel engines.

GTL → Fewer harmful emissions + HVO → Lower carbon emissions

- Reliable supply
- Better for human health and the environment
- Lower total cost of ownership
- Enhanced engine performance
- Excellent cold starting down to **–20°C**
- Storage Stability up to 5+ years

*Compared with crude-oil-derived diesel and using a 55% GTL fuel to 45% HVO blend on a well to wheel lifecycle basis (using UK Government greenhouse gas conversion factors 2021 and EU Directive 2015/652). 'CO2e' is the unit of measurement of GHG emissions – all greenhouse gases are expressed as if they were CO2 using appropriate conversion factors. This calculation is based on averages taken from the UK Government's BEIS and DEFRA Greenhouse gas reporting: Conversion Factors 2021: https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021 . Savings percentages may be lower that stated above, no guarantees provided].**Compared with conventional fuels. The local emissions benefit of paraffinic fuels vs. ordinary diesel varies depending on a variety of factors. These include – but are not limited to - engine emissions level, after-treatment system, engine manufacturer, age, injection timing, and driving style. The numbers provided in the tables below show a range based on actual emissions testing data. On a case-by-case basis actual emission benefits can be higher or lower than those stated above, however, the intention is to give a realistic indication of achievable benefits. ***Compared to neat HVO.

GTL/HVO Blend in the UK

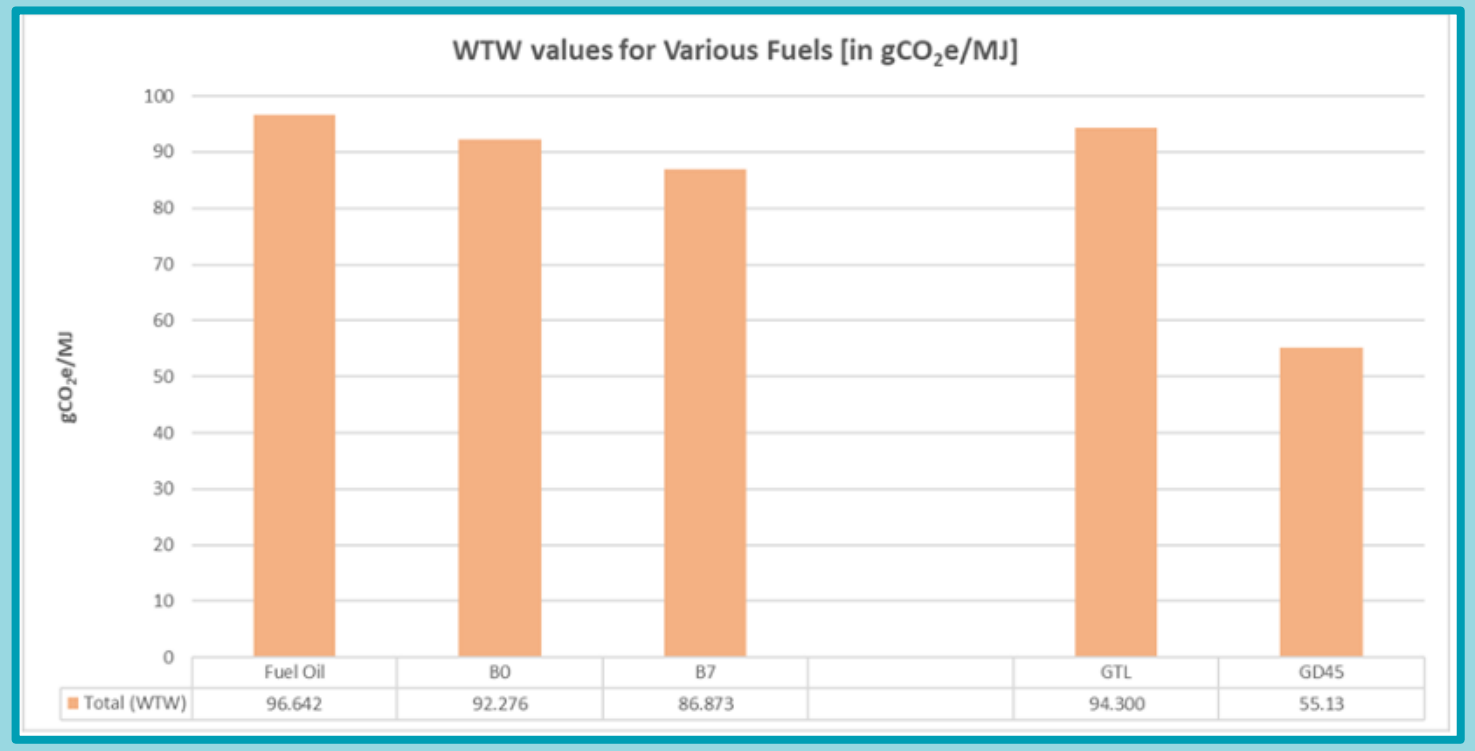
55% GTL + 45% HVO

In the UK, Shell are working with **a Route-to-Market partner** to product **GD45 Powered by Shell GTL Fuel** which is a transition fuel solution, bridging the gap between fossil and renewable fuels.

Impact today: estimated **246,400** diesel fuelled services vehicles in the local authority sector

Service Life Extension by switching to Gd45 Powered by Shell GTL Fuel

Well-to-Wheel (WtW) GHG Emissions



One Million litres of a diesel (B0) replaced by Gd45 powered by Shell GTL results in a reduction of 1740 tonnes of CO2e.

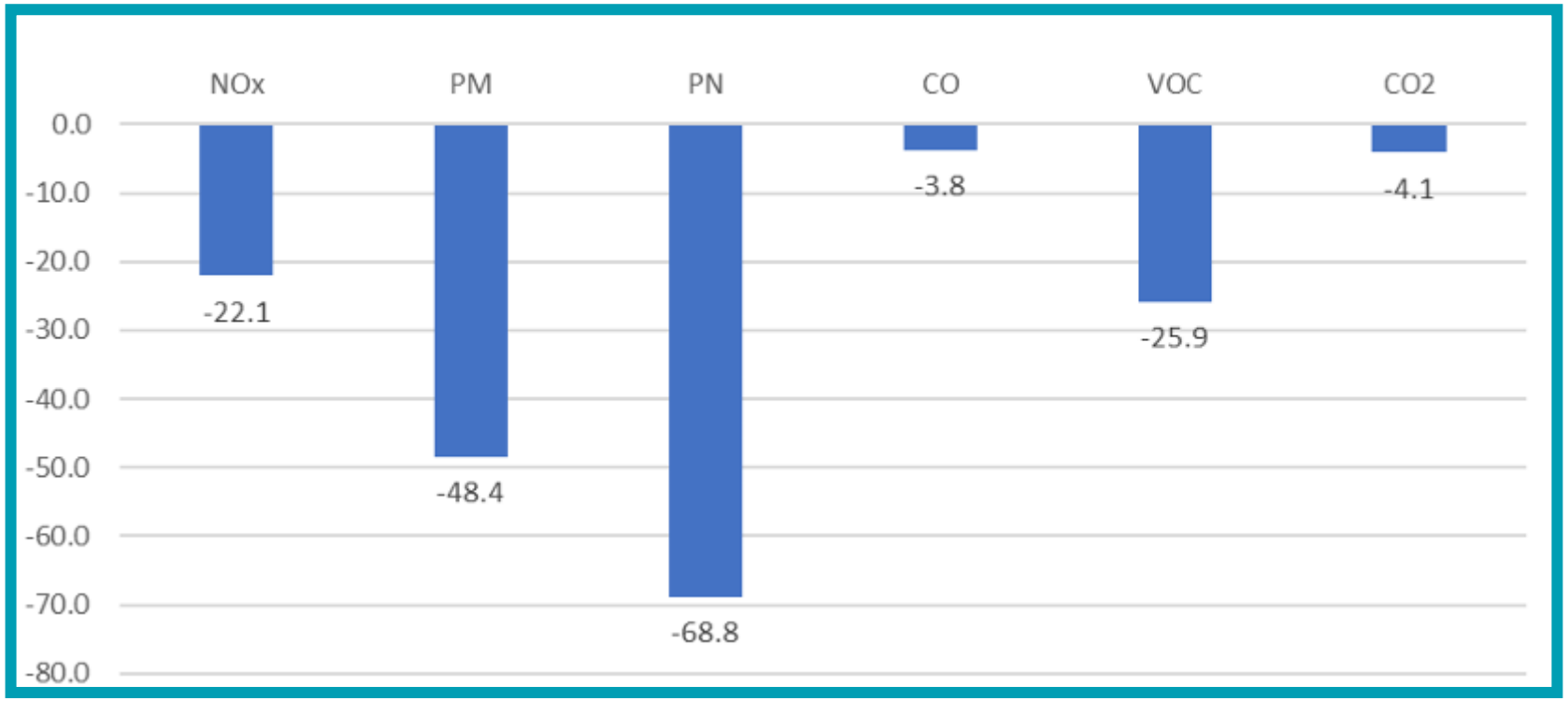
GHG Total (WTW)			
	g CO_2e/MJ	kg CO_2e/L	% (B0 =100)
Fuel Oil	96.6	3.9	116.2
Diesel (B0)	92.3	3.3	100.0
Diesel (B7)	86.9	3.1	93.6
GTL	94.3	3.2	97.1
GD45	55.1	1.9	56.7

Sources: UK Gov. GHG reporting: conversion factors 2021 and EU Directive 2015/652

CO2e' is the unit of measurement of GHG emissions – all greenhouse gases are expressed as if they were CO2 using appropriate conversion factors. This calculation is based on averages taken from the UK Government's BEIS and DEFRA Greenhouse gas reporting: Conversion Factors 2021: https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021 . Savings percentages may be lower that stated above, no guarantees provided].

Reduced Local Emissions

Average Overall % Change in Emission with Gd45 Powered by Shell GTL Fuel relative to retail diesel (B7)



Average emissions saving conducted in trials running Gd45 powered by Shell GTL Fuel

Up to 22.1%
lower NOx

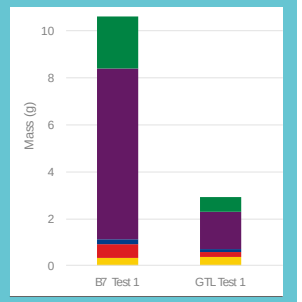
Up to 48.4%
lower PM

Lower Maintenance Cost and Operational Benefits

Modern engines achieve low emissions using specialised systems. Shell GTL can improve their performance:

1

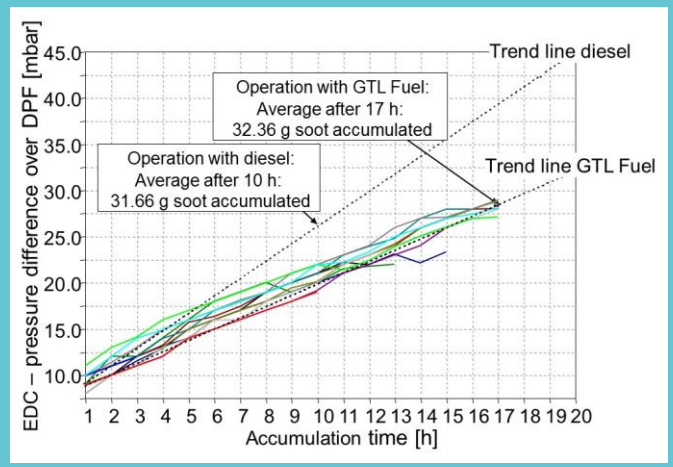
EGR valves stay cleaner with GTL, **improving engine performance**.



Experiments with an EGR system

2

DPF filters stay cleaner longer with GTL, **reducing fuel consumption.**



Experiments with a DPF system

3

GTL Fuel has the potential to **reduce AdBlue consumption**

by up to **10%**

AdBlue®

Additional Benefits

- Readily Biodegradable
- Drop in solution
- Noise Reduction up to 8db
- Excellent cold starting down to **–20°C**
- Storage Stability up to 5+ years
- Vehicle Reliability

Make an instant impact on your fleet today!

OEM Approvals

Shell GTL Fuel is approved by:

35+ OEM's

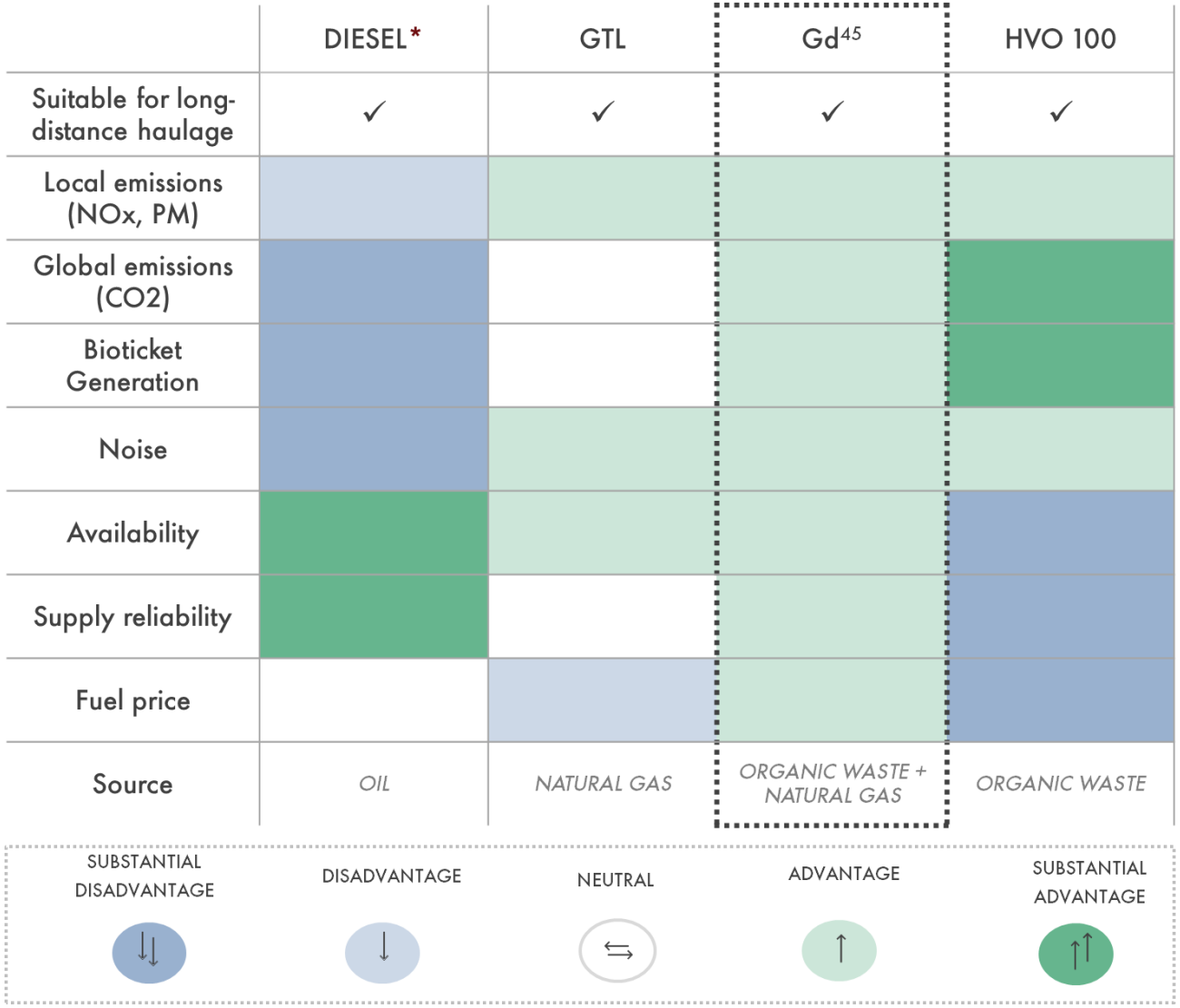
Summary

Drop in solution that is available today

Solution for both GHG and Local Air Quality

Positive impact on maintenance cost & AdBlue usage

Contact Nabeel.Uddin@shell.com for more information.



Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

PART OF TRANSPORT NETWORK

Any question?

Umut Yavas (Global GTL Fuel MD Manager, Shell)

Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

PART OF TRANSPORT NETWORK

Telematics: Analysing Vehicle & Plant Efficiency

James Atkinson (Vice President, MachineMax)

Highways Industry Objectives

Future Highways Research Group

The emissions from the maintenance and construction of our network led to emissions of around 734 thousand tonnes of CO2e during 2020.

All **construction plant and compounds zero emissions** by 2030

Net zero part of **MCHW and DMRB** by end 2022 and 2025

UK's first **near zero road scheme** starts in 2025 – opening by 2035

A 0-10% reduction by 2025 compared to 2020

A **near zero construction roadmap** in 2022

A 40-50% reduction by 2030 compared to 2020

The sustainability impact

25%+

of Global emissions
is from construction & infrastructure

81%

of plant CO2 emissions comes from:
Generators & Plant >3 tonnes

10,000,000

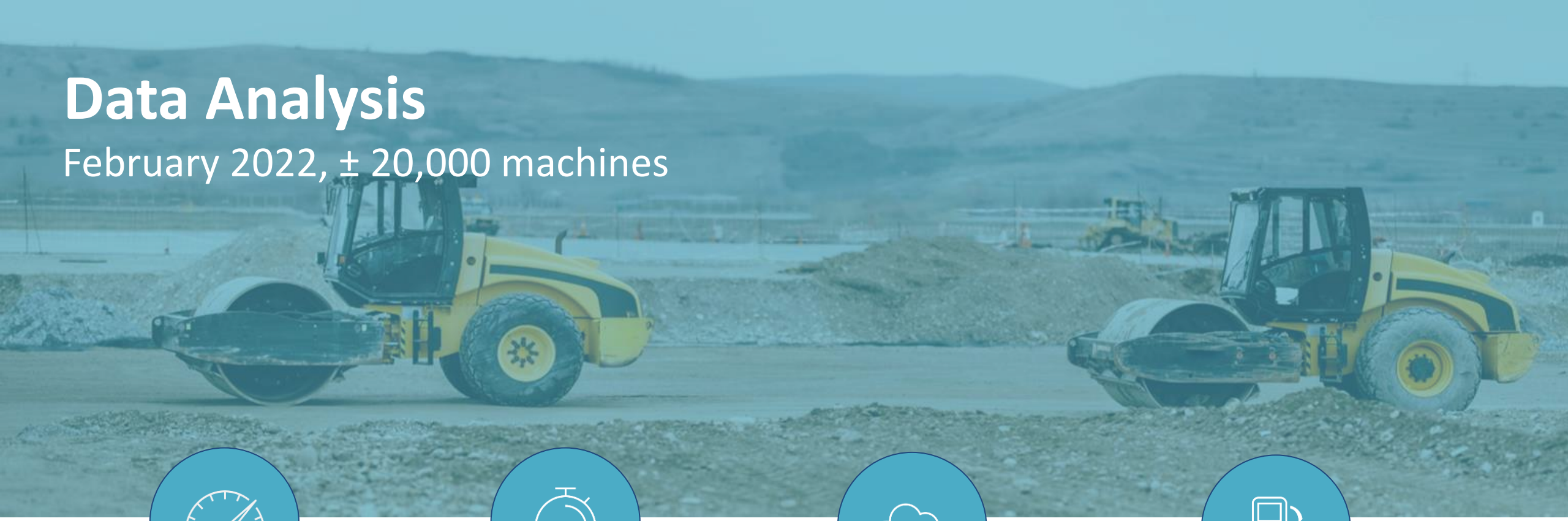
Tonnes per year in UK

2%

UK GHG emissions

Data Analysis

February 2022, ± 20,000 machines



Average utilisation

4.5 hours / day

Average idle time

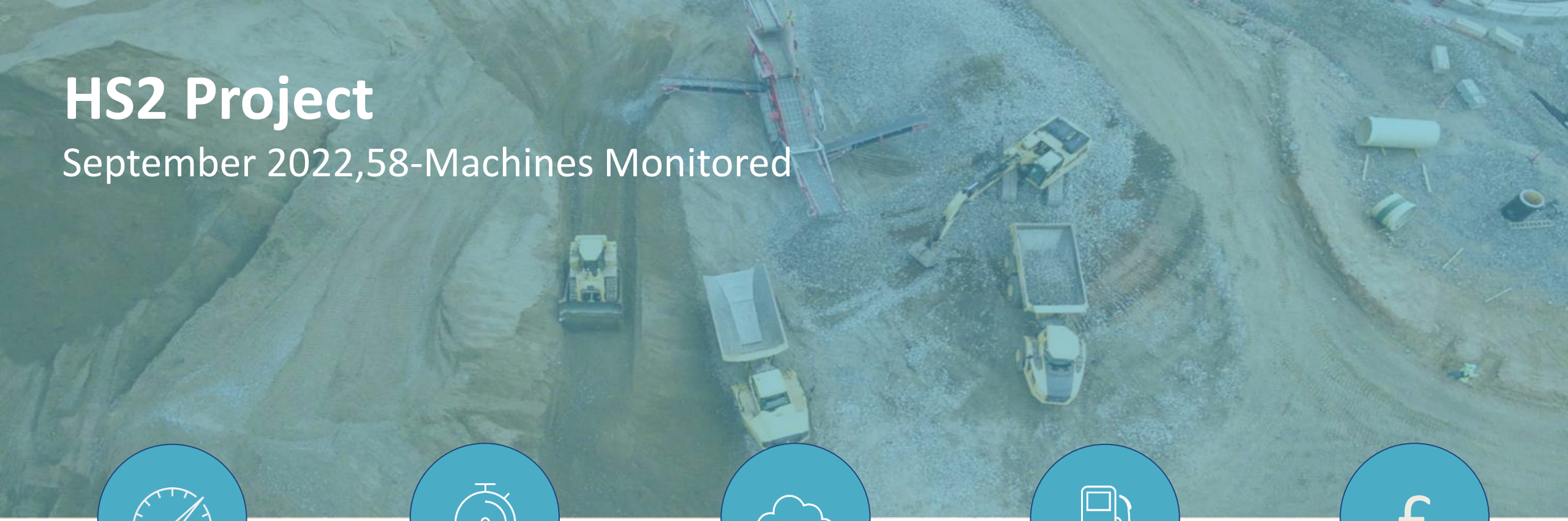
45% of operating hours

± 3,200 tonnes of CO2 emitted

± 1.23million litres of fuel burned

HS2 Project

September 2022,58-Machines Monitored



Average utilisation

4-hours / day

1,703 idling hours

in 1 month

17 tonnes of CO2 from

idling in 1 month

204 tonnes per annum

± 6,812 litres of fuel

burned idling in a month,

81,744 litres per annum

£13,624 idling fuel cost in

1 month

£163,488 per year

National Highways - UK Smart Motorway Project

September 2022,6-Machine Trial

Average machine utilisation = 20%

Average idle time ± 33% of operating hours

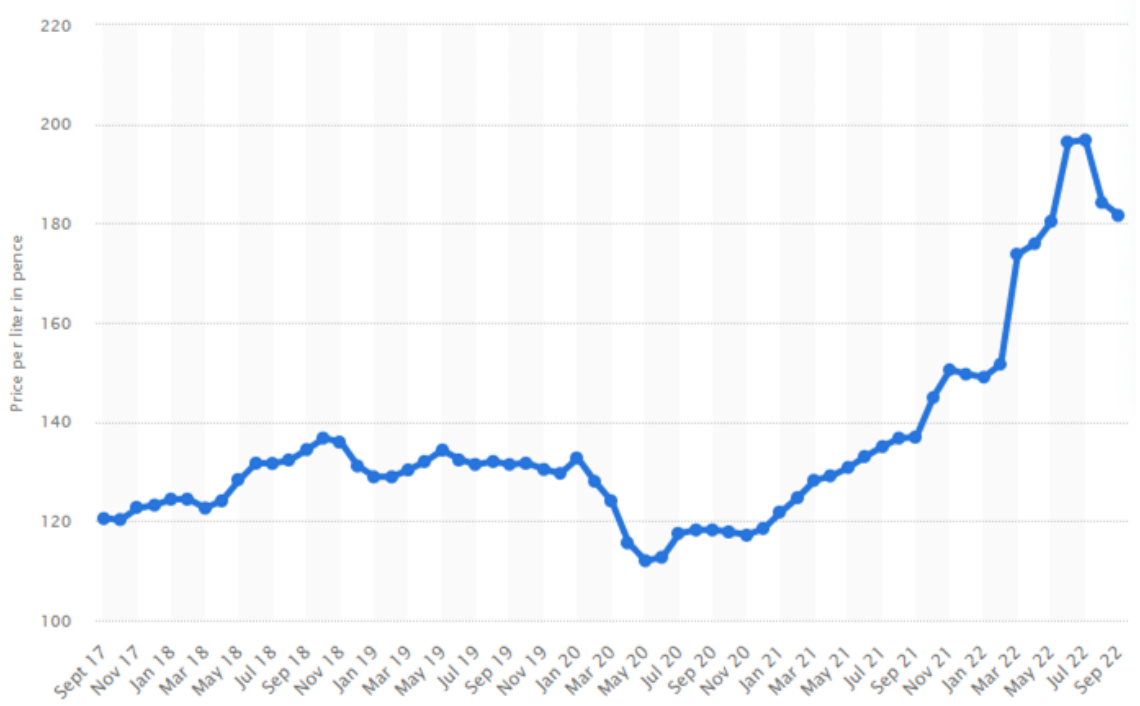
± 3.5 tonnes of CO2 emitted a month from idling 42 tonnes per annum

± 1,396 litres of fuel burned in a month, idling 16,752 litres per annum

£2,792 fuel burned idling in a month, £33,504 per annum

Fuel costs

Future Highways Research Group



	UK
Jan 2022	**£1.05**
April 2022	**+ £0.58**
July 2022	**£1.96**

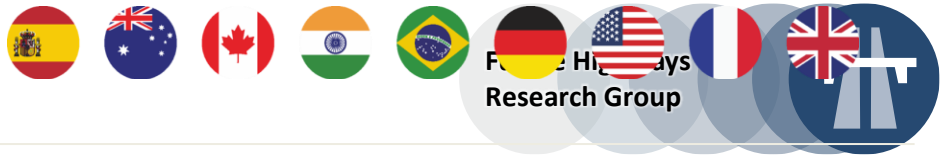
	UK
Jan 2022	**£360.00**
July 2022	**£704.00**

Hitachi ZX210 has a 400L fuel tank

The Data Challenge

- Fragmented & siloed data
- Multiple data owners & stakeholders
- Different inputs & outputs

Locations



Projects

Owners

FLANNERY PLANT HIRE · plantforce · Speedy · LLYNCH · PLANT

OEMS

Bobcat · JOHN DEERE · CAT · VOLVO · KOMATSU · JCB · HYUNDAI · MITSUBISHI MOTORS · NEW HOLLAND AGRICULTURE · thyssenkrupp · LiuGong

Models

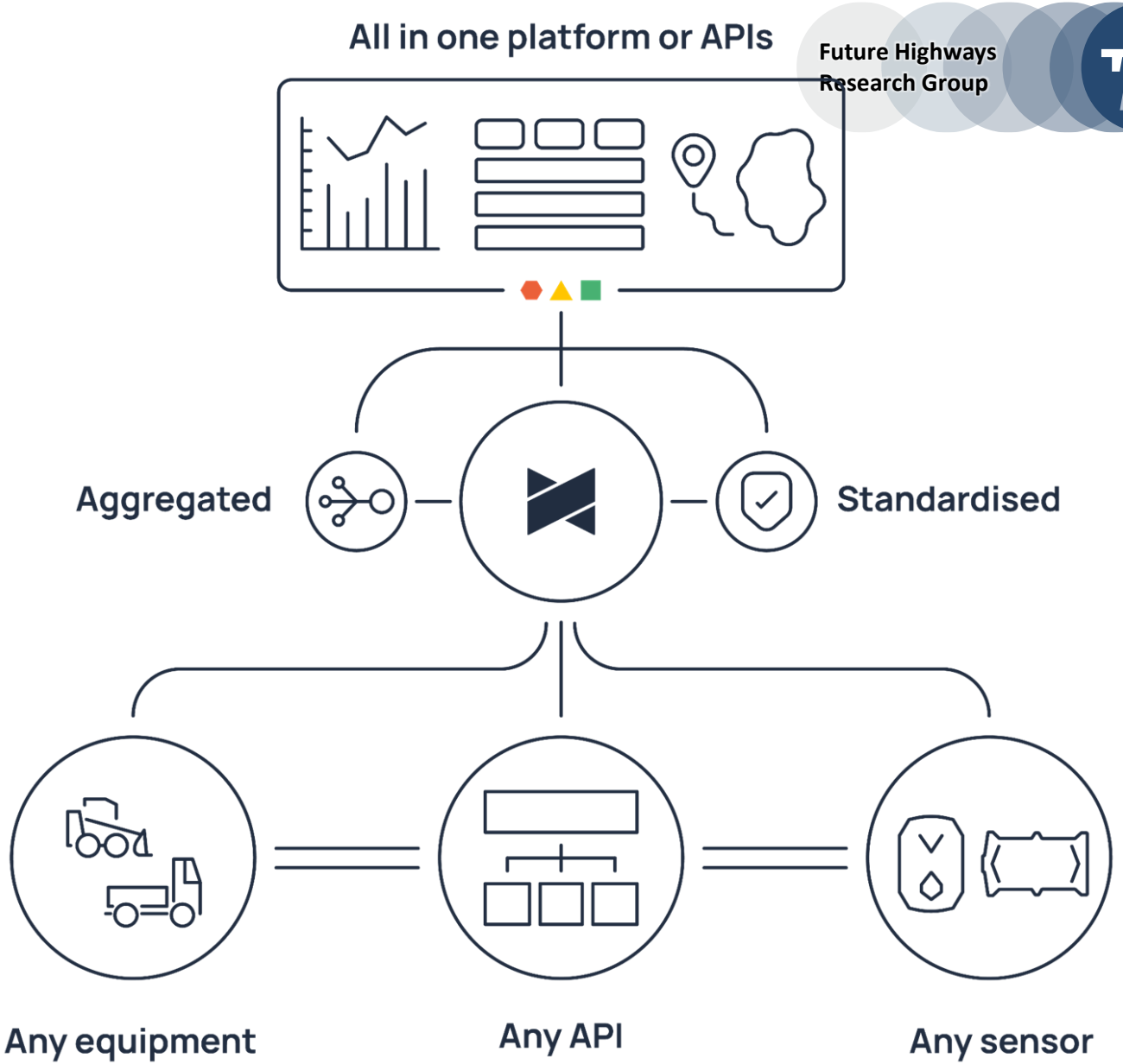
Connectivity

MACHINEMAX

The Single View

Enabling a single platform view, we bring all your data together from any source.

You'll have fast access to the right data to enable in the moment business decisions.



Future Highways Research Group

MACHINEMAX

What our customers say

Future Highways Research Group

IMERYS	"We have been able to **reduce our fuel usage by 25% and our idling by 3-10%** just from implementing changes based of the data we receive from MachineMax"
CEMEX	Cemex – "For one single machine we were able to **save over £20,000 on fuel usage and maintenance** and we were only aware of this through analysing the data from MachineMax"
MURPHY PLANT	Murphy – "On HS2 Euston we were able to **reduce our carbon emissions by 10% through MachineMax**, which is great in utilities because it is really hard to turn that engine off."
Shell	Shell Sarnia, "By taking the first five vehicles out of the fleet and reallocating around ten others the MachineMax platform **has already paid for itself, and it has only been four months.**"

Power of data

Qualifying OEM & supplier claims

Validation of alternative fuels

Connected sites & connected data sources

Identifying opportunities for EV's

MACHINEMAX

Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

PART OF TRANSPORT NETWORK

Any questions?

James Atkinson (Vice President, MachineMax)

Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

PART OF TRANSPORT NETWORK

Reused & Recycled Materials: Membership Survey

Survey Overview

- **Key questions:**
  - Does your authority have a policy regarding the reuse / recycling of materials?
  - Do you have a materials recycling centre?
  - Do you purchase recycled materials?
  - What percentage of materials do you recycle?
    - By material type.
  - What is your experience of using recycled materials?
    - Materials recovery processes and equipment.
    - Materials storage and handling processes and equipment.
    - Recycled materials performance.
  - Do you resell any recycled materials or process recyclates on behalf of another authority?
  - Will your answers change in the foreseeable future?
    - Do you have a strategy for materials reuse?
    - What are your timescales?
- **We will issue all members with an MS-Forms questionnaire after this meeting.**
- **All answers will be anonymised prior to report publishing.**

Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

PART OF TRANSPORT NETWORK

Framework Contracts: Value for Money Toolkit

Future Highways Research Group, Eurovia & MHA+

Andy Perrin (Research Leader)

Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

PART OF TRANSPORT NETWORK

Background and Purpose

Value for Money Toolkit for Framework Contracts

Background & Purpose

- **Sponsored by Eurovia as part of its tender quality submission for inclusion on the MHA MSF4 framework.**
  - However the methodology developed can be commissioned by any highways authority/supplier for any project whether part of a framework arrangement or otherwise.
- **The purpose of the VfM assessment toolkit for frameworks is:**
  - To help drive consistency, rigour and continuous improvement in the way projects are undertaken, by applying a proven VfM assessment methodology that identifies best practice and facilitates simple value for money benchmarking across projects and programmes.
  - To enable local highways authorities to measure and evaluate the VfM delivered by individual projects and, over time, benchmark different projects to identify those that delivered the best VfM, such that the successful traits of those projects can be applied to other projects going forward.
  - Because VfM assessments can be applied at any stage of a project, assessments at the feasibility stage will also identify any adjustments required to ensure the project delivers VfM before construction commences.

Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

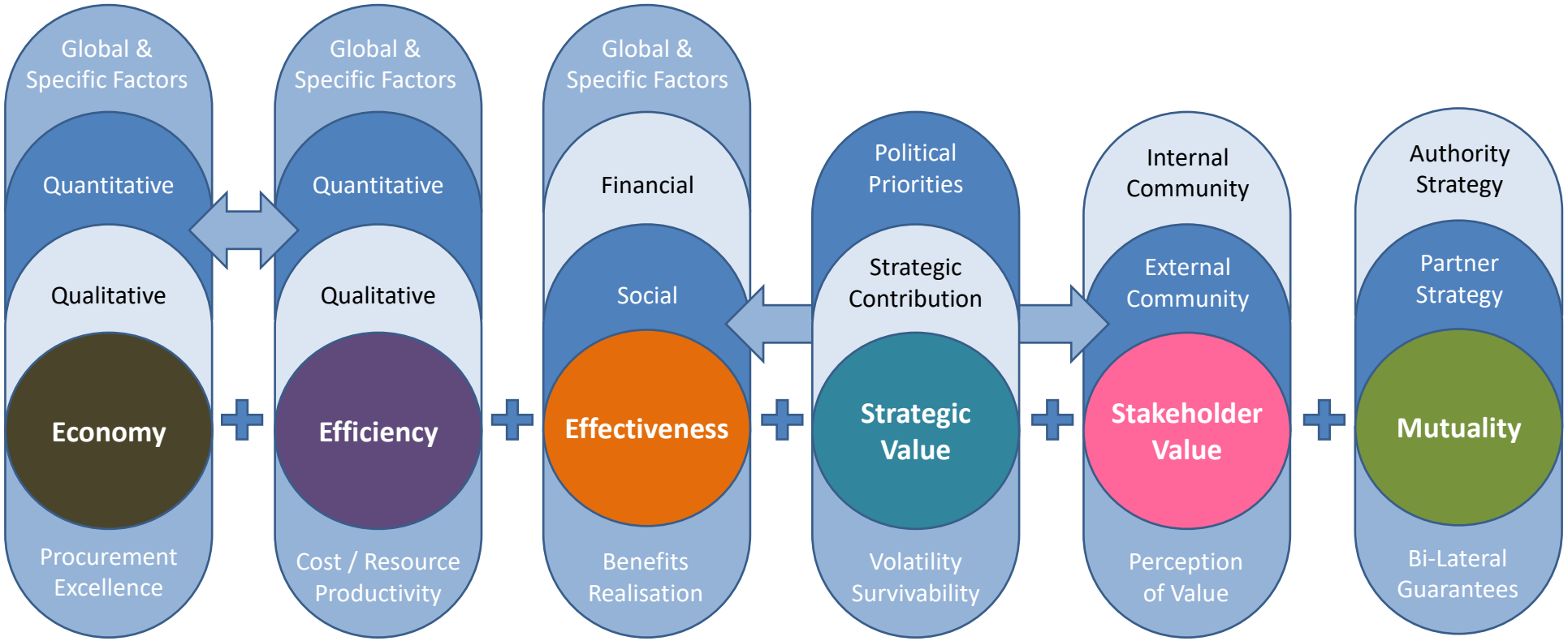
PART OF TRANSPORT NETWORK

Approach and Methodology

Value for Money Toolkit for Framework Contracts

Value for Money Analysis

The Proving Framework - identifying & Proving Best Value Services



Research Programme (CVRC, 2011) ©Proving, Farquharson, Perrin & Wilson 2020

VfM Approach for Framework Contracts

Principles for Development

- **Our VfM methodology for framework contracts must:**
  - Add value to all parties.
  - Be wieldy and proportionate.
  - Be fully aligned to and informed by the MSF4 Performance Management Toolkit.
  - Be easily transferrable for use with other projects and frameworks.

Draft Factor Set

Economy Factors

100	Economy	**Client Staff Costs**	
101	Economy	Client Management and Supervisory Team	100
102	Economy	**Designer Staff Costs**	
103	Economy	Designer Management Team	100
104	Economy	Designer Staff	100
105	Economy	**Contractor Staff Costs**	
106	Economy	Contractor Management Team	100
107	Economy	Contractor Technical Staff	100
108	Economy	Contractor Operatives	100
109	Economy	Supply Chain	100
110	Economy	**Cost of Works**	
111	Economy	Plant	100
112	Economy	Equipment	100
113	Economy	Materials	100
114	Economy	**Cost of Risk**	
115	Economy	Early Warnings (Quality/Accuracy/Timeliness)	100
116	Economy	Cost of Risk (Client)	100
117	Economy	Cost of Risk (Contractor)	100
118	Economy	Compensation Events (Quality/Accuracy/Timeliness)	100
119	Economy	**Revenue Generation and Savings**	
120	Economy	Funding Streams Identified and Secured	100
121	Economy	Savings Secured through ECI Innovation (Annex G)	100
122	Economy	Savings Secured through Value Engineering (Annex G)	100
123	Economy	**Overall Budgetary Control**	
124	Economy	Project completed within budget	100

Draft Factor Set

Efficiency Factors

200	Efficiency	**Feasibility Study**	
201	Efficiency	Feasibility Study (Accuracy and Timeliness)	100
202	Efficiency	Budget/Estimating (Accuracy and Timeliness)	100
203	Efficiency	**Early Contractor Involvement (ECI)**	
204	Efficiency	Desired Investment Level (Accuracy and Timeliness)	100
205	Efficiency	Innovation Identification Process	100
206	Efficiency	Quality of Final Design	100
207	Efficiency	Completed within Agreed Timescales	100
208	Efficiency	Quality of Stage One ECI Scope	100
209	Efficiency	Accuracy and Timeliness of Target Costing	100
210	Efficiency	Accuracy and Relevance of Stage Two Construction Scope	100
211	Efficiency	**Implementation and Construction**	
212	Efficiency	Adequate Contract Management Software	100
213	Efficiency	Quality of Review and Improvement Process	100
214	Efficiency	**Project Closure Phase**	
215	Efficiency	Timeliness of Project Closure	100
216	Efficiency	Post Project Review	100
217	Efficiency	**Right Resource Selection/Deployment**	
218	Efficiency	Client	100
219	Efficiency	Designer	100
220	Efficiency	Contractor	100
221	Efficiency	Supply Chain	100
222	Efficiency	**Project Management and Collaboration**	
223	Efficiency	Project Management (Collaboration, Efficiency and Quality)	100
224	Efficiency	Comprehensive use of MSF4 Performance Mgt Toolkit	100
225	Efficiency	Contractor Engagement with and Management of Supply Chain	100
226	Efficiency	Customer Care and Public Liaison	100
227	Efficiency	Commercial Management	100

Draft Factor Set

Effectiveness Factors

300	Effectiveness	**Quality and Timeliness**	
301	Effectiveness	Quality of Finished Product	100
302	Effectiveness	Completion within Agreed Timescales	100
303	Effectiveness	Impact of Innovation on Quality of Finished Product	100
304	Effectiveness	Traffic Management	100
305	Effectiveness	Digital Twin	100
306	Effectiveness	**Stakeholder Experience and Satisfaction**	
307	Effectiveness	Client	100
308	Effectiveness	Designer	100
309	Effectiveness	Affected Local Businesses	100
310	Effectiveness	Affected Local Communities	100
311	Effectiveness	**Safety and Social Value during Project**	
312	Effectiveness	Safety	100
313	Effectiveness	Sustainability	100
314	Effectiveness	Social Benefits	100

Draft Factor Set

Strategic Value Factors

400	Strategic Value	Ensure the safety and wellbeing of all stakeholders.	100
401	Strategic Value	Support initiatives that deliver carbon neutral services, schemes and incentives.	100
402	Strategic Value	Optimise and improve network performance for all users, supporting active travel under all conditions.	100
403	Strategic Value	Enhance the local economy through network expansion and improvement to meet the growth agenda.	100
404	Strategic Value	Sustain a financially resilient service that delivers best value with the resources available.	100
405	Strategic Value	Engage effectively to understand and meet the needs of our citizens and communities.	100
406	Strategic Value	Embrace best practice, innovations and new technologies enabling the service to continuously evolve.	100
407	Strategic Value	Develop and sustain collaborative partnerships that deliver the objectives of all partners.	100
408	Strategic Value	Attract, develop, empower and retain the best people capable of driving a dynamic and agile service.	100
409	Strategic Value	Develop a service that is understanding of social value and actively participates in the delivery of the benefits that it provides.	100

Convergent Strategic Goals of Highways Authorities

Future Highways Research Group

1. **Support initiatives that deliver carbon neutral services, schemes and incentives. (Carbon Reduction)**
2. **Optimise and improve network performance for all users under all conditions.**
3. **Enhance the local economy through network expansion and improvement to meet the growth agenda.**
4. **Sustain a financially resilient service that delivers best value with the resources available. (Best Value)**
5. **Engage effectively to understand and meet the needs of our citizens and communities.**
6. **Embrace best practice, innovations and new technologies enabling the service to continuously evolve. (Innovation)**
7. **Develop and sustain collaborative partnerships that deliver the objectives of all partners. (Collaboration)**
8. **Attract, develop, empower and retain the best people capable of driving a dynamic and agile service. (Skills Transfer and Learning)**
9. **Develop a service that is understanding of social value and actively participates in the delivery of the benefits that it provides. (Social Value)**

Draft Factor Set

Stakeholder Value Factors

500	Stakeholder Value	**MHA**	
501	Stakeholder Value	Framework Community Board	100
502	Stakeholder Value	**Client**	
503	Stakeholder Value	Portfolio Holder	100
504	Stakeholder Value	Local Elected Member	100
505	Stakeholder Value	Project Sponsor	100
506	Stakeholder Value	**Other**	
507	Stakeholder Value	Third Party Funders	100
508	Stakeholder Value	Local Communities	100
509	Stakeholder Value	Delivery Chain Partners	100
510	Stakeholder Value	Utility Organisations	100
511	Stakeholder Value	General Public	100

Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

PART OF TRANSPORT NETWORK

Next Steps and Timeline

Value for Money Toolkit for Framework Contracts

Next Steps and Timeline

- **MHA Communities Board Sub Committee to review draft factor set and scoring guide.**
  - Sub Committee membership to be established following MHA Communities Board meeting January 23.
  - Sub Committee review (including wider consultation) to be completed by 30th April 23.
- **Previous projects cross check.**
  - Three previous project closure files to be assessed against the VfM factor set and scoring guide to evaluate alignment.
  - Reviews to be completed by 28th February 23.
- **Pilot Review.**
  - VfM assessment to be undertaken for live project by 30th April 23.
  - Update factor set and scoring guide to reflect learning.
- **MHA+ Communities Board sign off by 31st July 23.**

Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

PART OF TRANSPORT NETWORK

Carbon Calculation & Accounting Standard (CCAS) & Carbon Analyser

Simon Wilson, Research Leader

Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

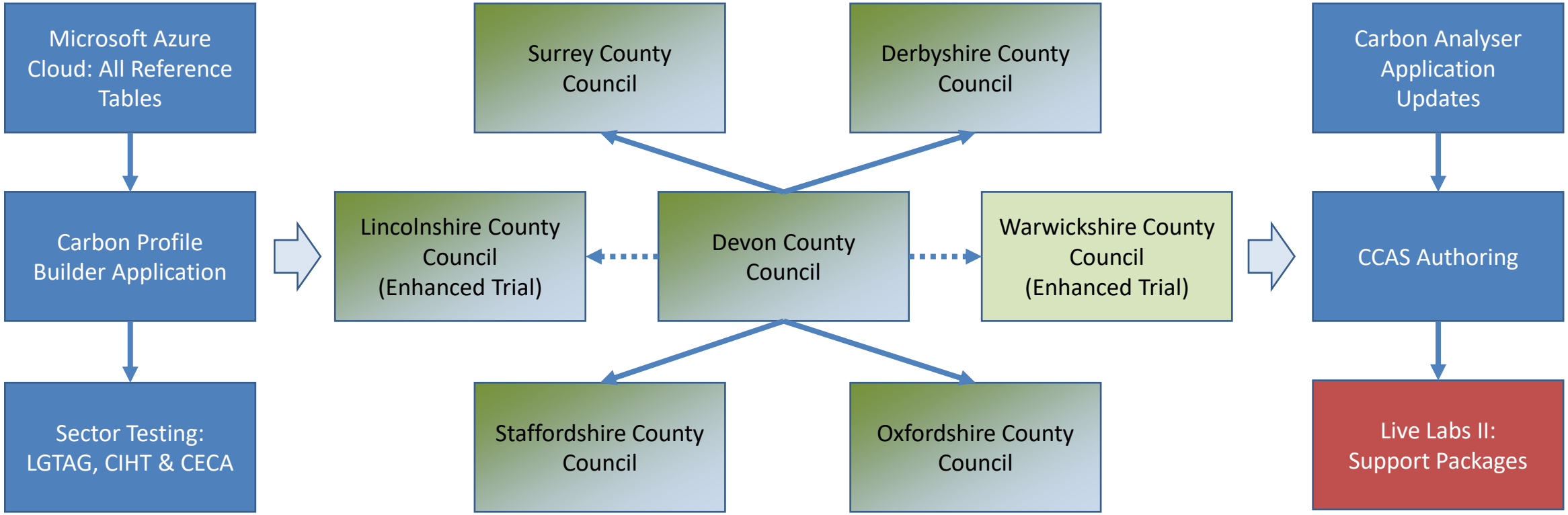
Highways

PART OF TRANSPORT NETWORK

Pioneer Programme

Learning From Sector Practitioners

Progress Update



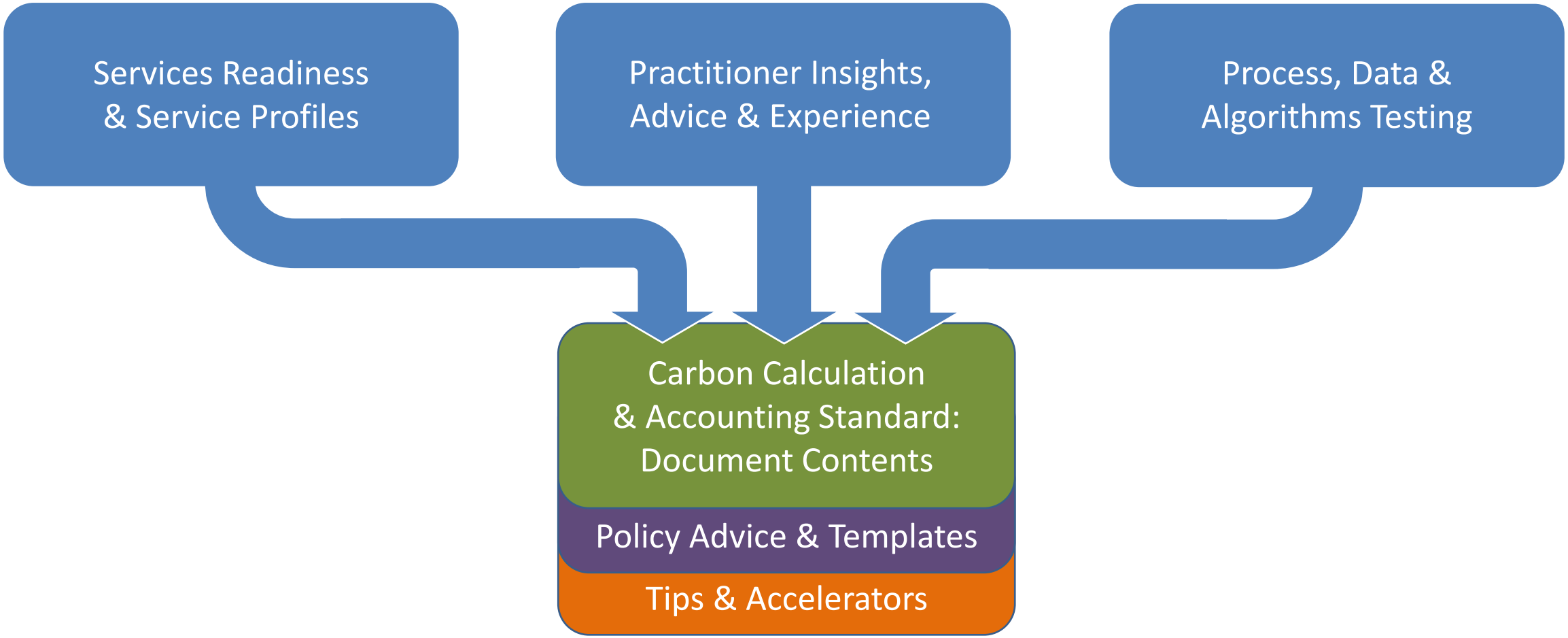
What have we learnt so far…

- **Many observed factors and considerations are shaping the CCAS and Carbon Analyser.**
  - The seven authority trial is significantly reshaping our thinking and the proposed methods.
  - The process is becoming simpler and easier to implement (driven by accuracy and pragmatism).
- **Highest carbon factors are not where we expected.**
  - Materials are less than fuels, commuting and home working.
- **Carbon measurement and management readiness is highly variable.**
  - Data readiness, culture and teams readiness, reduction initiatives management readiness.
- **Policies, initiatives and boundaries are highly inconsistent.**
  - Significantly reducing the ease of benchmarking.
- **LHA's and their supply chains are solutioneering…**
  - …ahead of understanding their carbon position: a very risky approach.
  - e.g. understanding carbon efficiency as a KPI.
- **Many solutions are greenwash.**
  - 52% of the 77 assessed options have little or no carbon benefit.
  - Blinding LHAs to better performing options (e.g. fleet SLEP + biofuels?, improved efficiency).

CCAS Guidance Development

Seven-Authority Pioneer Programme

Future Highways Research Group



Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

PART OF TRANSPORT NETWORK

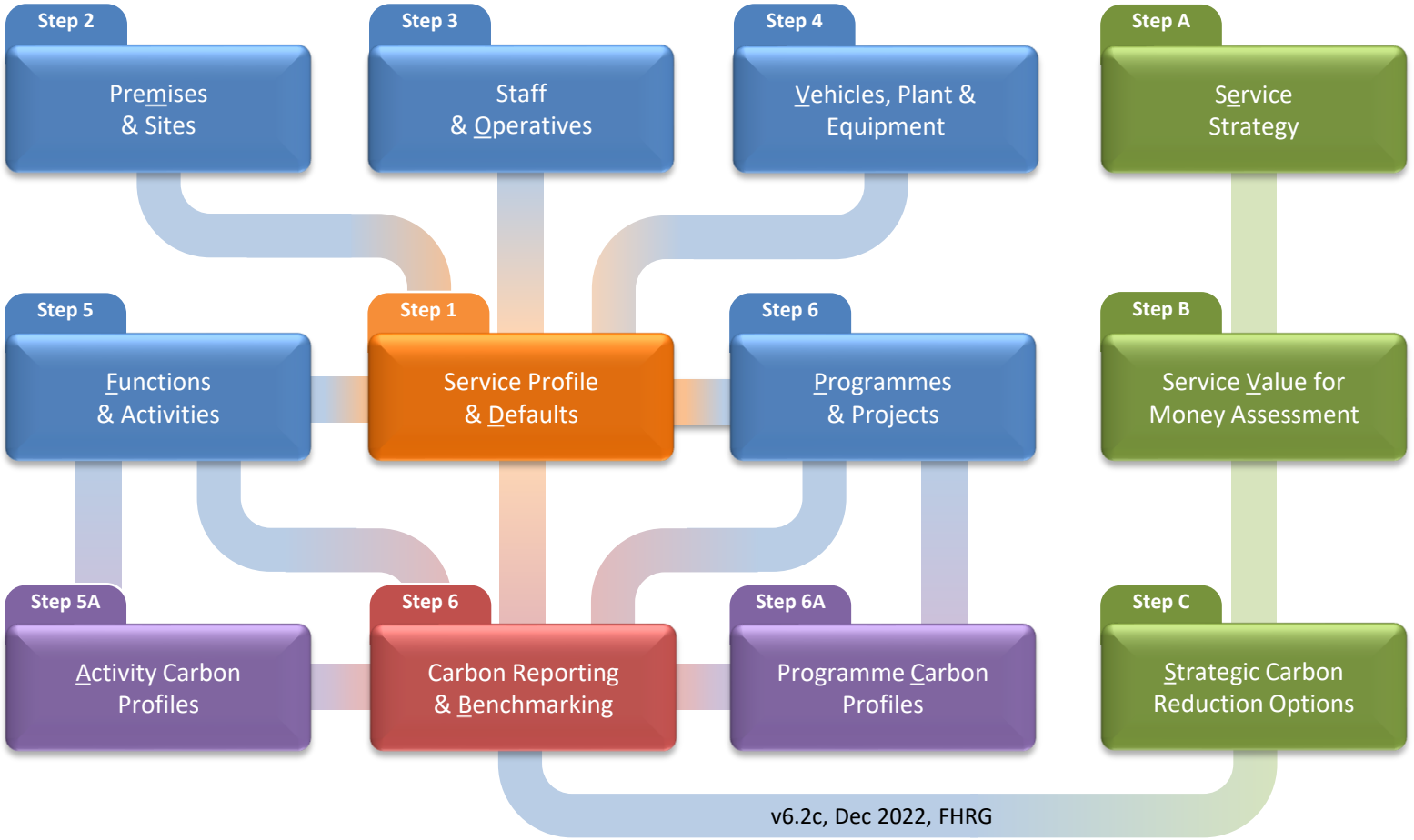
Standard Process: Comprehensive Analysis & Reporting (Recommended)

Carbon Calculation & Accounting Standard and Carbon Analyser

Standard Process & Toolset Route Map

High Granularity (Recommended Method)

Future Highways Research Group



Standard Process & Toolset Route Map

High Granularity (Recommended Method)

Future Highways Research Group

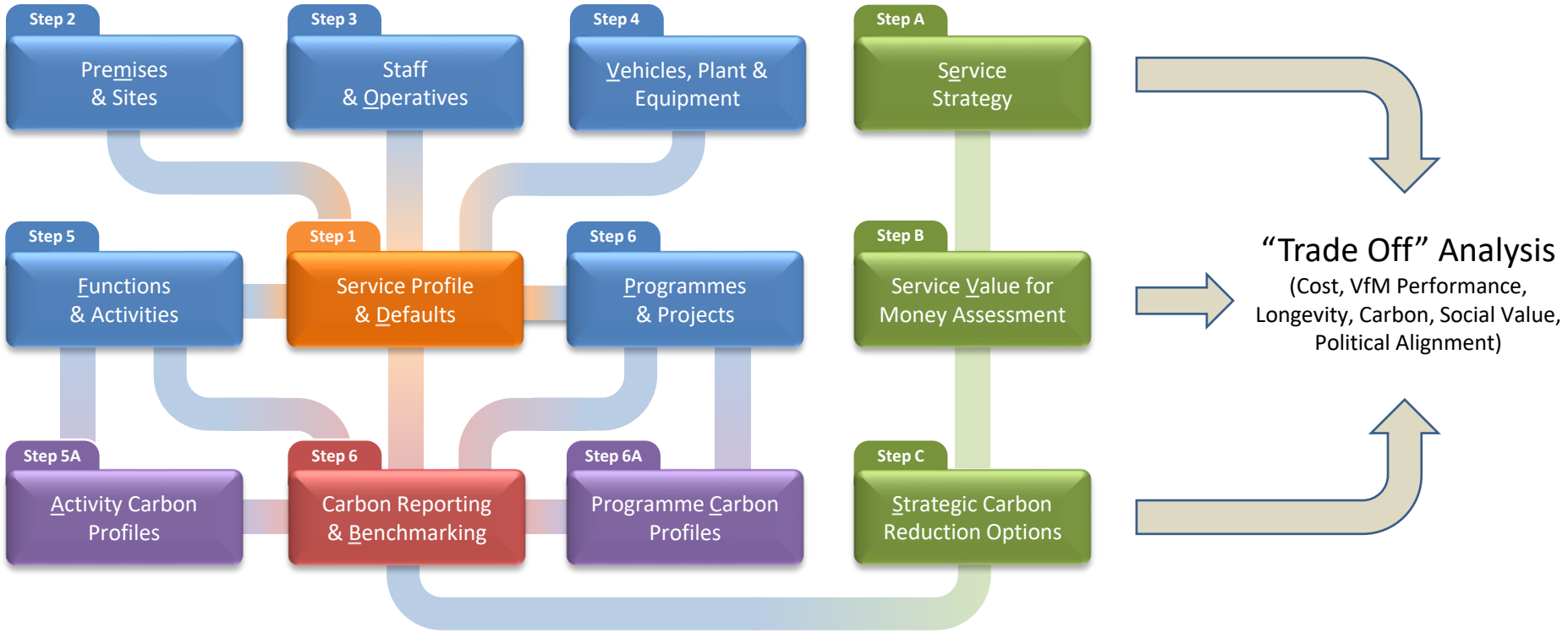
±80% accuracy and completeness (calibrated).

Comprehensive cost and carbon analysis and benchmarking.

Typical first reporting cycle of 29 days*. Anticipated subsequent cycles of 14 to 16 days†.

*Process execution, embedding and training.

*†Excludes provider days.



Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

PART OF TRANSPORT NETWORK

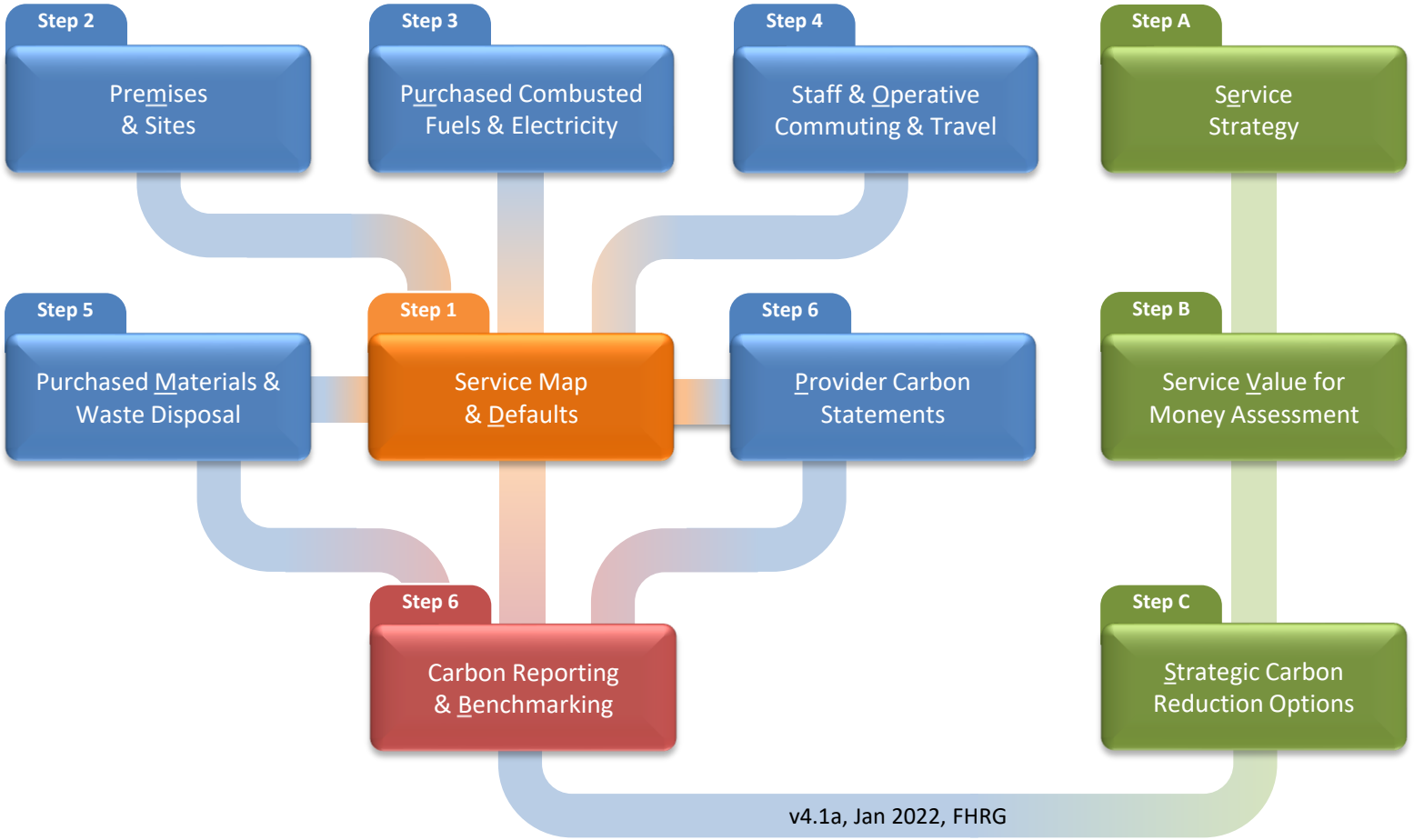
Simplified Process: GHG Compliant Analysis & Reporting (Requirement?)

Carbon Calculation & Accounting Standard and Carbon Analyser

Simplified Process & Toolset Route Map

Medium Granularity (Reporting Compliance Only)

Future Highways Research Group



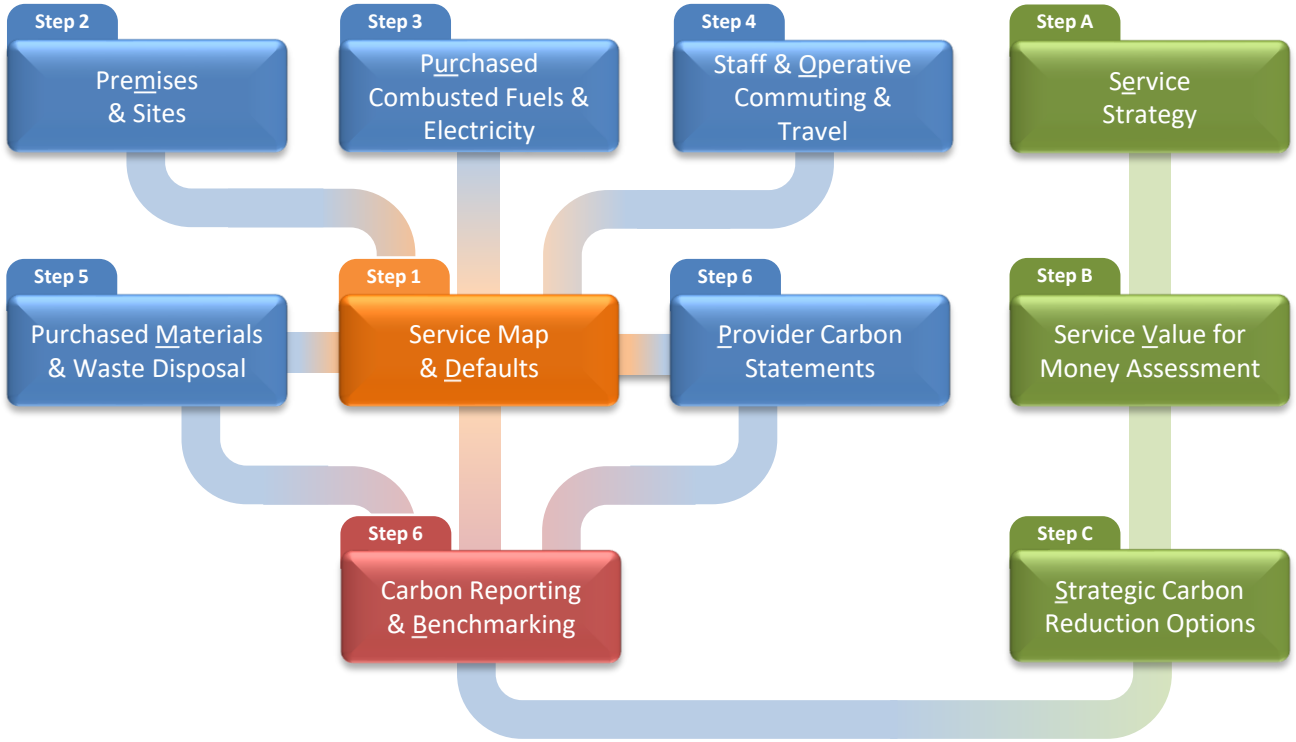
Simplified Process & Toolset Route Map

Medium Granularity (Reporting Compliance Only)

Future Highways Research Group

±70% accuracy and completeness (awaiting calibration).

High level carbon analysis and benchmarking only.



Easy access programme for lower readiness authorities.

Typical first reporting cycle of 23 days.* Anticipated subsequent cycles of 11 to 14 days†.

*Process execution, embedding and training.

†*Excludes provider days.

Simple transition to standard CCAS process.

Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

PART OF TRANSPORT NETWORK

Benchmarking: Tiers & Decision Mapping

Carbon Calculation & Accounting Standard and Carbon Analyser

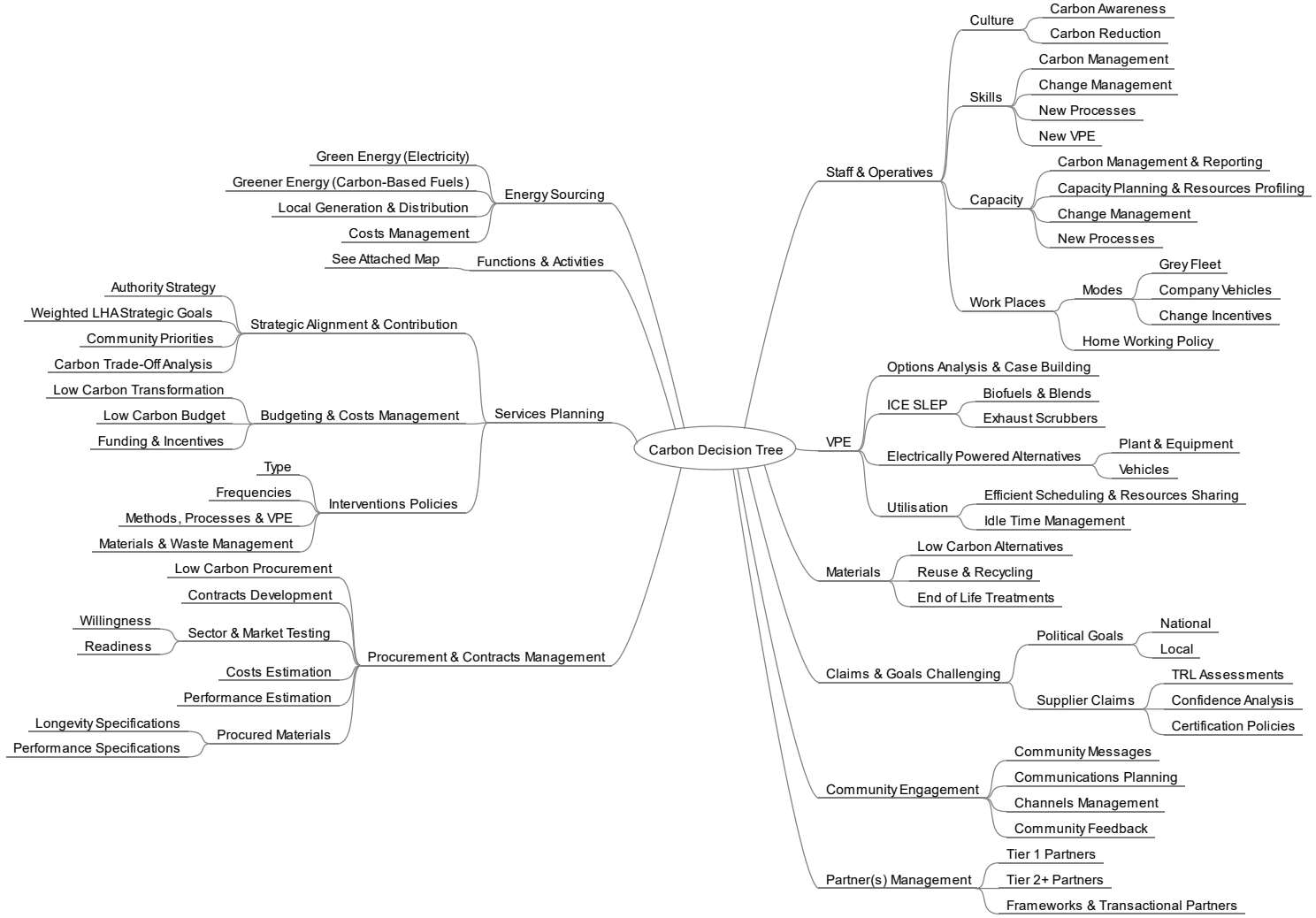
Benchmarking Tiers (Azure® Carbon Dataverse)

- **Service.**
- **Site.**
- **Vehicles, plant and equipment (VPE).**
  - By vehicle type.
- **Function.**
  - E.g. Winter Maintenance.
- **Profile component.**
  - E.g. Materials.
- **Innovation.**
  - Strategic options.

- **Links to internal and value chain decision trees.**

Decision Tree Mapping

Mapping carbon information to key decisions within local authorities.



Decision Impact Assessment

By Function & Activity

Future Highways Research Group

Assessing the impact of carbon "trade space" data on decisions by function and activity.

Function	Activity	Scale of Change	Scale of Impact	Implementation Timescales
Countryside	Reactive Team (Public Rights of Way)			
Drainage & Flood Risk Management	Flood Risk Authority (Planning & Management)			
Fleet, Plant & Equipment	Fleet Management & Fleet Maintenance (External)			
	Plant & Equipment Management & Maintenance (External)			
Highways Development Management	Highways Development Control & Road Adoptions			
Laboratory Services	Condition Assessments			
	Consultancy Services			
	Fleet Management & Fleet Maintenance (Lab)			
	Materials & Methods Testing & Standards Setting			
	Site Investigations & Surveys			
Lincolnshire Road Safety Partnership	Road Safety Advisory Services			
	School Crossing Patrols			
Local Highways Management	Reactive Maintenance Teams			
	Safety & Risk Inspections (Carriageways & PRoW)			
Programmes	Design			
	Major Schemes Construction, Supervision & Quality Assurance			
Materials Handling & Storage	Materials (Reactive & Preventative)			
	Waste & Recycled Materials Management			
Network Management	Civil Parking Enforcement			
	Network Regulation			
	Permitting, Enforcement, Streetworks Coordination & Reinstatements			
Network Resilience	Emergency Response Services & Management			
	Fleet Management & Fleet Maintenance (Winter Maintenance)			
	Winter Maintenance Operations & Management			
	Winter Treatments (Salt Haulage & Materials Management)			
Operational Asset Management	Carriagway Micro			
	Client Design & Works Ordering			
	Drainage Cleansing			
	Drainage Repairs			

Future Highways Research Group

Decision Equipped.
proving
ADEPT
Association of Directors of Environment, Economy, Planning & Transport
Highways
PART OF TRANSPORT NETWORK

Carbon Analyser: FHRG Access Programme

(FHRG Members Only)

Future Highways Research Group

Benefits of Carbon Analyser

Future Highways Research Group

- **A research-led process and toolset.**
  - Shaped and tested with seven local highways authorities.
- **A simple in-house, transparent and repeatable process for carbon reporting.**
  - Simple five-step process.
  - Minimum operational overhead for reporting.
  - Reducing dependencies on expensive external consultants and carbon specialists.
- **GHG compliant reporting.**
  - Boundary, cycle, assumptions, carbon statements, carbon reduction plan.
- **Multi-year carbon footprint reporting.**
  - Uses your selected baseline year as the start year.
  - Carry forward previous years' carbon profiles and data (to reflect only operational changes).
- **Highways specific.**
  - Includes all key highways considerations for activity-based carbon reporting.
- **Compatible with data exports for Brightly Software's Confirm.**

Benefits of Carbon Analyser
Continued…

- **Integrates all key carbon data sources.**
  - Including ICE, BEIS, NH, AADT and TAG.
  - This will be further updated to the *National Infrastructure Carbon Schedule* (NICS) in Q4, 2023.
- **Preloaded with highways sector carbon profile templates.**
  - 36 standard carbon profiles (aligning with common expenditures (i.e. resurfacing)).
- **Preloaded with options for carbon reduction.**
  - 54 carbon reduction options (subject to further “greenwash” qualification).
- **Links to your strategic drivers and VfM assessment.**
  - Transfer from your VfM data from your last assessment.
- **Fully benchmarkable: at service, fleet, activity, and component levels.**
  - For costs, carbon, longevity, TRL, process complexity, and operational performance.
  - Subject to enabling the “Data Sharing” option.
  - Using the Microsoft Azure® Carbon Dataverse.
- **Three years of updates and support.**
  - All software and data sources will be updated annually, based on the latest published tables.

Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

PART OF TRANSPORT NETWORK

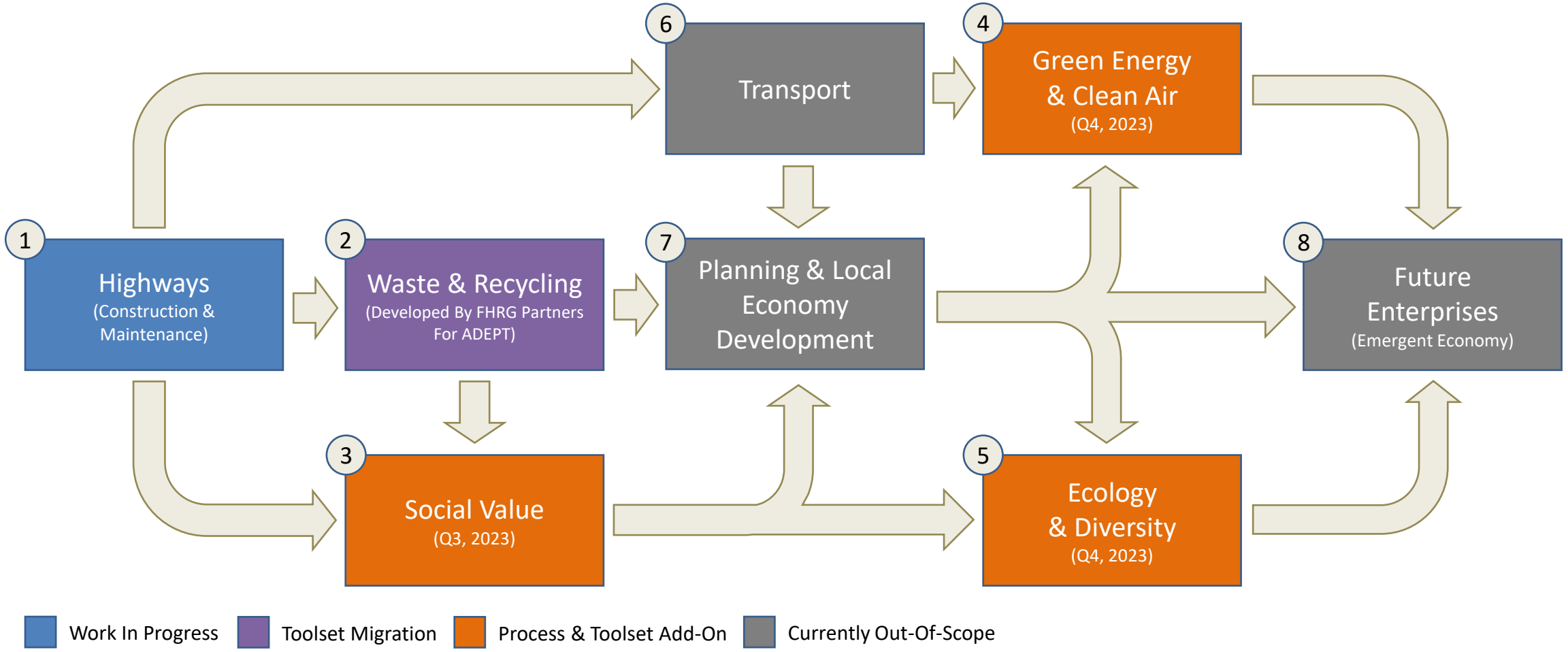
Carbon Accounting: Beyond Highways

Future Highways Research Group

Beyond Highways Services

In Funding Order

Future Highways Research Group



Future Highways Research Group

Decision Equipped.
proving

ADEPT
Association of Directors of Environment, Economy, Planning & Transport

Highways
PART OF TRANSPORT NETWORK

Carbon Analyser: FHRG Member Access

Future Highways Research Group

Carbon Analyser Costs

- **Monthly fees for Carbon Analyser (SaaS).**
  - Package includes:
    - Software and access support (working hours only).
    - Users management.
    - Microsoft Azure Carbon Dataverse / SQL Server Client licenses.
    - Microsoft Client Access Licenses (RDS).
    - Annual carbon factor updates (all sources).
    - Carbon Analyser updates (instantly available).
  - Monthly price per organisation (maximum 3 non-concurrent users): £ 119.00.
  - Monthly price per additional user (concurrent): £ 38.00.
  - Monthly price per additional service (i.e. waste and recycling): £ 93.00.
    - Additional services will not include carbon templates or carbon reduction options.
  - Only available to FHRG members.
    - Pricing for ADEPT users will be announced in Q3, 2023.

Carbon Analyser Costs
Continued…

- **“Quick Start” programme.**
  - Package includes:
    - On-site planning and goals setting workshop.
    - Facilitated on-site workshops to complete baseline year data collection, analysis and reporting.
    - Process and toolset embedding planning.
    - Review of carbon reduction options.
    - Review of strategic and operational implications (requires a recent VfM assessment).
  - Programme fee: £ 15,650.
- **Carbon Analyser and CCAS training.**
  - On-site training.
  - CCAS and Carbon Analyser course curriculum.
    - Including principles and best practice.
  - Standard course fee: £ 850.00.
  - Service-specific training fee (requires “Quick Start” programme): £ 1,100.

Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

PART OF TRANSPORT NETWORK

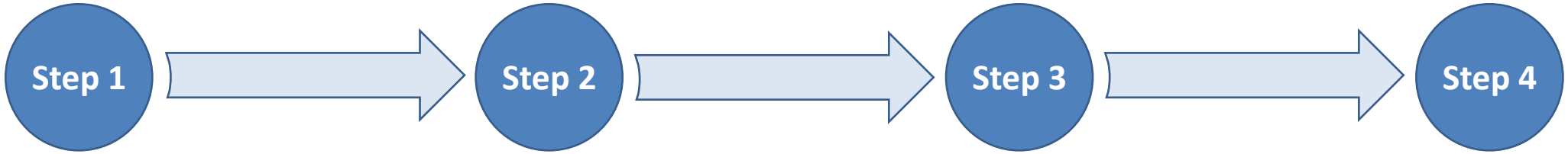
Carbon Analyser: Registration Process

Future Highways Research Group

Steps for FHRG Members

Web Version Only

Future Highways Research Group



Register your interest and review the tools for suitability. Current capacity constraints allow us to add a maximum of four users per month from 1st April 2023.

Complete the new user access form and return it to Your Office Anywhere (YOA), our SaaS partners for *Carbon Analyser*. You will be issued with usernames and passwords.

Complete the issued proforma workbook, providing schedules of premises, staff, and vehicles, plant and equipment. Your data will be uploaded to Carbon Analyser.

Schedule your carbon assessment and training workshops. These are hosted on your premises and can include any staff who wish to be involved.

Contact the FHRG for further details.

Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

PART OF TRANSPORT NETWORK

Your Office Anywhere: Brief Overview of Service

Future Highways Research Group

Your Office Anywhere overview

Future Highways Research Group

- **Introduction**
  - Delivering Remote Desktop Services solutions for 25+ years.
  - Consulting and Managing RDS projects for household names such as Heinz, Aviva, Northumbrian Water, Essex and Suffolk Water.
  - Started hosting arm in 2005, providing RDS solutions for thousands of users.
- **YOA's role in the Carbon Analyser Early Access Programme.**
  - Provide a secure, fully managed, platform to host the Carbon Analyser application
  - Act as first line support for all users to help with platform or application issues
- **Providing Secure Access**
  - Introduce ISO 27001 compliant process to ensure access is secured to the right people.
  - Self service password reset page for users based on the registered business email address.
- **Supporting users**
  - Helpdesk available 8.30am – 5.00pm – Monday – Friday for general support. 24/7 for critical issues
  - Triage issues to allocate to either Proving Services for application issues, or YOA for platform ones
  - Offering workarounds or advice for known application issues

Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

PART OF TRANSPORT NETWORK

Next Meeting: Agree Date & Location

Future Highway Research Group

Future Highways Research Group

Decision Equipped.

proving

ADEPT

Association of Directors of Environment, Economy, Planning & Transport

Highways

PART OF TRANSPORT NETWORK

End of Document

Future Highway Research Group