

Zemo 20:Zero Notes from Session 1:

Freight & HGVs - achieving zero emissions by 2040

- Andy Salter, Moderator (DVV Media)
- Peter Harris (UPS)
- Kate Jennings (Logistics UK)
- David Cebon (Centre for Sustainable Road Freight)
- Gaynor Hartnell (Renewable Transport Fuels Association)

What are the big challenges as you see them?

UPS:

- Making big decisions about technologies and the policies that support them. What HGVs will look like.
- Lay policy to support infrastructure. Think beyond road to shipping and aviation.

RTFA:

- Near-term action - more emphasis on vehicles on the road now. Huge role that fuels can play too.

Logistics UK:

- Freight and logistics is privately led but infrastructure is not. Everyone also wants to share learning too, plus fuels (government doesn't recognise enough).

CSRF:

- Vehicles are heading to electric but long haul remains a question but is pointing to electric too. If logistics can be done with electric, will do so as it is cheaper.
- Big questions are around charging infrastructure (e.g. fast charging in warehouses) and how this is delivered (wait for grid connections), how will logistics do so via electric as will not be the same as diesel - need greater understanding before building infrastructure.

Concern with laser like focus by industry on net zero and zero emission - are we too focused on this? Are we trying to decarbonise or electrify?

UPS:

- Important to have vision for net zero but if overfocus we can miss the things we can do in the near term (action plan may be jockey stick).
- Aggressive short-term milestones that unlock renewable fuels etc. Important to just 'get on with it' or it'll become impossible.

RTFA:

- Problem with terminology. Net zero is not the same as zero emission tailpipe. Not always used in same context.

Chair: Zero emission has been defined by UK Government.

RTFA:

- There are other solutions. There could be a case for a 100% renewable fuel for intense long-duty trucks. Is the air quality downside for very rural areas overpowering the GHG savings we can make?

Chair: How do you encourage this? What is the incentive?

RTFA:

- A mandate on fuel suppliers, but would like to see higher blends than B7 for example. Wary of warranty issues plus they are not really being rewarded.
- GHG protocol changes for example are not clear in creating incentives, need to engage these people!

CSRF:

- A need for an interim solution. Think everything in the UK will be electrified. Globally this may not be the case due to more changes e.g. in Australian outback it will be necessary to have an ICE or range extender.
- Focus on the easy for electric. There will have to be combustion engines, the government's ban will have to be revisited.
- Engineering and efficiency measures, and logistics (e.g. improving efficiency) are all very important as these reduce energy needed.

Chair: What do Logistics UK members think about this? do you get a sense this is a high priority? And when will it become the only thing they want to talk about?

Logistics UK:

- Lot of ambition to zero carbon. Lot of people are investing in zero carbon because it's the right thing to do (customer demanding it), not because it is cheap.
- Need to spend private investment wisely. Cost of logistics cuts through the economy. Industry needs help, time costs money (ZERFD has taken over 6 months!)

Chair: should we be seeking a multiplicity of solutions? Is having different fuel types helpful?

UPS:

- Short to medium, multiplicity needed to be able to get on. Longer term - numbers point to broadly electrified, with some exceptions. Off-road may have other solutions too.
- The physics that leads to economics, point to this too.

Chair: Still sees huge investment in hydrogen, spoke to someone who said we can't get to net zero without hydrogen. Perhaps need to stop treating as a pariah?

UPS:

- Hydrogen should be used for something that makes it cost effective to do so.

CSRF:

- Agree with Peter. Electrification has a big lead and advantage. Factor of at least 2 on the vehicle, expect electric to get cheaper faster. However, much fewer fuel cells.
- Clear obvious direction, ZERFD interesting - happening from 2025-2030. Decision will be made in 2030 which is too far ahead and need to be careful about delaying decisions.
- Don't think you can have hydrogen for the 'hard to do' applications as infrastructure needed but equally can't afford to do 2 lots of infrastructure, or have a minority infrastructure.
- Use existing infrastructure e.g. biofuels. Don't think keeping tech neutral until 2030 is a good idea.

Chair: A lot of use cases that are based on data, we can see 40% of cases being electrified tomorrow - what about the remaining 60%?

Logistics UK:

- Has to be green hydrogen, need to store energy (use for hydrogen), hydrogen out there for buses. We can't let the perfect stop the good.
- Ideally there would be a hydrogen strategy.

RTFA:

- Government made a decision with the ICE ban. There is a much better way to put policy together to focus on an increasing efficiency requirement from vehicles; to point where impossible to not do without BEV, plus carbon intensity of the fuels.

- Let the OEMS innovate and come to conclusions.

Q – in defence of hydrogen, HFC is in an electric vehicle. In addition, can't get a payload to move goods. Carrying batteries around and not goods. Cost of space for infrastructure too.

CSRF:

- Hydrogen fuel cell is an electric vehicle. The other stuff on it is very expensive (hydrogen is high tech, expensive and with a steeper learning curve) and electric infrastructure brings significant issues around grid connection - ways around this e.g. catenary.
- Agree this is where the challenges are. Total Cost of Ownership (TCO) and cost of providing infrastructure means electric is cheaper.

Comment - back up is green hydrogen (low carbon hydrogen). Sometimes tech debate is misunderstood and used as a proxy for policy. This isn't how it works, however and the debate is entirely legitimate and needs to be had. This will highlight problems, most policy is made by a no come option policy (once options predicated, you'll have multiple solutions) aware and insightful of how policy is developed.

Comment - can get green hydrogen, can get on Zemo's Renewable Fuels Assurance Scheme (RFAS). Agree with pane, electrification is the option where it works. Sometimes it isn't the right answer. Can't see for the next 1/2/3 cycles of vehicles. Can see on continent how many stations, vehicles in Europe want to come over.

Comment - future requires combo of solutions, need to deliver on scale, and have economics work on scale. Putting high powered network on motorway. Means don't need a massive battery which improves

Comment - tackling the abatement curve and demand reduction - is this part of the problem? How do you get a sustainable system when it's based on growth?

**Chair: Need to reduce demand in surface transport. How do you square this circle?
E.g. Working from home at odds with reduction in demand due to home delivery.
How do you reduce demand?**

UPS:

- Separate growth in goods movement from growth in transport miles. Transport efficiency needed, modal shift (e.g. last mile cycle logistics).
- Reduced travel and reduced demand - need to be careful about reduction in growth of economy, which impacts social sustainability. Huge amount can be done to optimise.



RTFA: Consume fewer poor quality goods that don't last very long.

Logistics UK:

- Need to optimise freight system. Look at logistics first and design the country to be as efficient as possible for logistics and freight.
- Huge potential to reduce carbon and have cleaner air as less miles. All depend on logistics.

Zemo 20:Zero Notes – Session 2: ‘Scaling up electric buses’

- Tim Deakin, Moderator (routeone)
- Lucy Parkin (KleanBus)
- Becki Kite (Confederation of Passenger Transport)
- Tom Cunningham (Transport for London)
- Peter Robinson (Go-Ahead Group)

Panel Discussion Session

How ready is industry to adopt electric buses?

CPT:

- Bus operators recognise need for decarbonisation – some companies have already set their own internal targets supported by government funding to purchase ZEBs.
- Continued support needed going forward to maintain adoption.
- Rural operators will need a lot of support.
- Important to note that bus travel as it is today (using diesel buses) is already greener way of travelling compared to using the car.

Kleanbus:

- Passion and enthusiasm there for decarbonisation from operators and Local Authorities.
- End of sales date for diesel buses needs to be set by government.
- Environmental and economic benefits of electric buses are clearly recognised now.
- Decarbonisation not only of vehicles, but travel as a whole is key (encourage modal shift).
- Repowering diesel buses to zero emission now being recognised as a solution particularly for SMEs.

TfL:

- In a good position on decarbonisation journey thanks to work over last 10 years.
- Being an early adopter has helped drive OEM technology development.
- Now approaching 1000 ZEBs in London (10% of fleet), and no longer buying diesel vehicles.

- Trying to strike balance of buying new ZEBs and scrapping mid-life vehicles.
- Current target of having a 100% zero emission fleet by 2034. Ambition of bringing forward that date to 2030 – securing funding is the key to meeting ambition of 2030 however, 2034 is currently funded.

How do operators plan long term without long term funding guarantee?

Go-Ahead :

- Outside London, often commercial and operational case doesn't add up therefore continued public support is vital.
- Improving patronage is the biggest solution for decarbonisation ultimately – currently still considering buying diesel buses to boost service levels on routes where patronage is high.
- Clarity on end of sales date for diesel vehicles is vital for operators to be able to plan longer term.

Main hurdles to decarbonisation today?

Go-Ahead:

- Commercial barrier in general but particularly installing grid connections – cooperation between DNOs and operators key to overcome this.
- Cost of capital for investing in decarbonisation agenda is falling, raising capital for buying diesel buses is harder now – one barrier at least that is easing.

Infrastructure – how big a hurdle has it been in London?

TfL:

- It is a challenge, sites done first which were identified as 'low hanging fruit' came with fewer challenges. 'Harder to do sites' are more difficult to electrify for a range of reasons, including issues with lease agreements. Regulations for buying power, digging up roads etc aren't fit for purpose and hinder electrification.
- Confidence in wider UK bus market is required – without long-term support for bus networks across the country, investment in decarbonisation will be hard to achieve (because investors don't have confidence in future returns).

Government and local authority (LA) readiness for decarbonisation?

CPT:

- Varies across the country - most LAs are engaged with decarbonisation and improving services as seen in 'Bus Back Better' enhanced partnerships development, things are moving in the right direction.
- Despite changes in ministerial positions, support for bus is still there in government. Key is delivering on long-term funding support.

Greater closer working between partners required?

Go-Ahead:

- End-to-end package for operators is required - developing partnerships between operators and suppliers is important.

Scope for finance partners to be involved?

Go-Ahead:

- Absolutely, operational savings associated with ZEBs provide confidence to finance providers to enable upfront capital to be invested.

Internal changes required to bus sector ahead of decarbonisation?

TfL:

- Culture change across all areas of industry will be so important (e.g. operations, safety, passenger experience).
- Opportunity to attract new bus users, particularly younger people who typically use car - generational change is required to make bus the first choice for long-term sustainability.

Devolved approach (England, Scotland, Wales) of bus decarbonisation policy unhelpful?

CPT:

- Teams across the UK to relay benefits of each nation to be replicated across the UK (e.g. funding for coaches in Scotland but not UK) so it isn't too much of an issue.

TfL:

- Areas and operating groups pulling together in terms of sustainable vehicle order pipeline will benefit UK manufacturing in the long term.

Better vehicle and better services (high spec vehicles) has it worked?

TfL:

- Value added passenger benefits are being realised and changing image of what bus can offer passengers – learning from operators outside London has been key to implementing.

Question and Answer Session

Q – What has the effect of Ofgem Significant Code Review been?

- GAG – Too soon to realise potential cost benefit.
- TfL – It will take time for benefit to filter through.

Q – What happens to smaller operators when ZEB funding dries up?

- CPT – Rural Zero Emission Bus Taskforce being formulated to work on this issue.

Q – Hydrogen vs BEV?

- TfL – Have been looking at and investing in hydrogen for 20 years – Total Cost of Ownership challenge remains in London urban market – other use cases may be better suited. The strategic decision on best hydrogen use case should be formulated at a higher level (e.g. freight and coaches).
- Go-Ahead – About to launch 24 hour service. Key to question is about understanding best use case.