energy saving trust

Local authority EV forum
Discussion summary

Local Journey to electrification

15 July 2022

Local Government Support Programme

energy saving trust

Contents

1. Introduction

The Energy Saving Trust hosts local authority (LA) electric vehicle (EV) forums, in partnership with the Office for Zero Emission Vehicles (OZEV, which is part of DfT and BEIS). The aim of the forums is to help local authority (LA) officers to find answers to their questions and share their experience with others working on public chargepoint delivery.

2021/22 quarterly meetings		2022/23 quarterly meetings	
2. 5 Oct 2021	EV chargepoint procurement and funding	1. 20 May 2022	Exploring EV Strategies
3. 3 Dec 2021	Implementing EV infrastructure plans	2. 15 July 2022	Local journey to electrification
4. 11 Feb 2022	Exploring EV Infrastructure	3. 13 Oct 2022	EV Charging Innovation
		4. 8 Dec 2022	TBC

This is our fifth LA EV forum with OZEV, who provided an update on current internal changes and the LEVI scheme pilot. Then the forum focused on the journey to electrification covering three core topics: taxi trade, council fleets, and exploring innovation/ funding. 93 LA officers attended and 73% chose their breakout session. We found most officers prefer the current format of the LA forums.

Our next forum will be face to face, jointly with Innovate UK KTN EV charging innovation event in Sheffield on 13th October 2022.

Officers are invited to join a MS Teams group to continue the discussion (to join please email lgsp@est.org.uk). Officers are also invited to sign up to our 'Authority Alert' newsletter here: https://r1.dotmailer-surveys.com/c2n2609-6b3y2e5b

Previous LA forum reports can be found here: https://energysavingtrust.org.uk/service/resources-for-local-authorities-on-electric-vehicle-chargepoints/

2. Polls and presentations

At our previous forums, feedback showed:

- In December, most councils had awarded an EV infrastructure contract and a quarter were working on a tender. The biggest challenges regarding EV infrastructure were high DNO costs, obtaining resources to develop infrastructure, and funding.
- In February, we found a third of councils had put in Traffic Regulation Orders with EV charging and over half were starting to electrify council fleets. The main challenges faced, especially with procurement, were understanding/deciding the right procurement models.
- In May, we found a third of councils have no plans to put in place an EV Strategy. Regarding fleet electrification, only a third of councils have an electrification plan for their fleet depot. Whilst we found a mixture of public/ private funding for EV chargepoints, the biggest challenge is procurement resources to progress EV infrastructure projects.

Please find below an overview of the topics and presentations delivered at this session, plus the results from polls (note polls have been reduced from four to two, to allow more time in breakout sessions):

Journey to electrifying taxis

Abby McDougall from Energy Saving Trust set the scene of the taxi trade in the UK (incl. Private Hire). Since the pandemic taxi licences have decreased to 2017 levels, Private hire taxis now make up 78% of all licenced taxi vehicles and the main fuel type used by taxi trade is diesel.

Bristol City Council introduced their taxi incentives to help transition the taxi trade to electric vehicles ahead of their upcoming Clean Air Zone(s) (CAZ) commencing November 2022. They shared support and grants available, free 'electric taxi experience' and advice, other financial incentives like credit for EV charging, subsidies for EVs, and vehicle upgrade grants and loans. In addition, Bristol City detailed their dedicated rapid chargers for the taxi trade, increased vehicle specifications for EVs (15 years), and continued engagement with the local taxi trade.

We asked officers what the current levels of engagement are with the local taxi trade, whilst 24% of councils state that they have quarterly meetings, 36% said they only have limited contact and only 1% leading by example by having regular monthly meetings.

Currently just over a quarter of officers said they have not started exploring electrification of taxi trade in their area, it was great to see that just over a third of councils are starting to engage their taxi trade on electrification.

Energy Saving Trust have published a three-step easy guide for local authorities to help engage taxi trade to support the final step for zero emission taxi licencing:

Step by step taxi electrification guide for local authorities

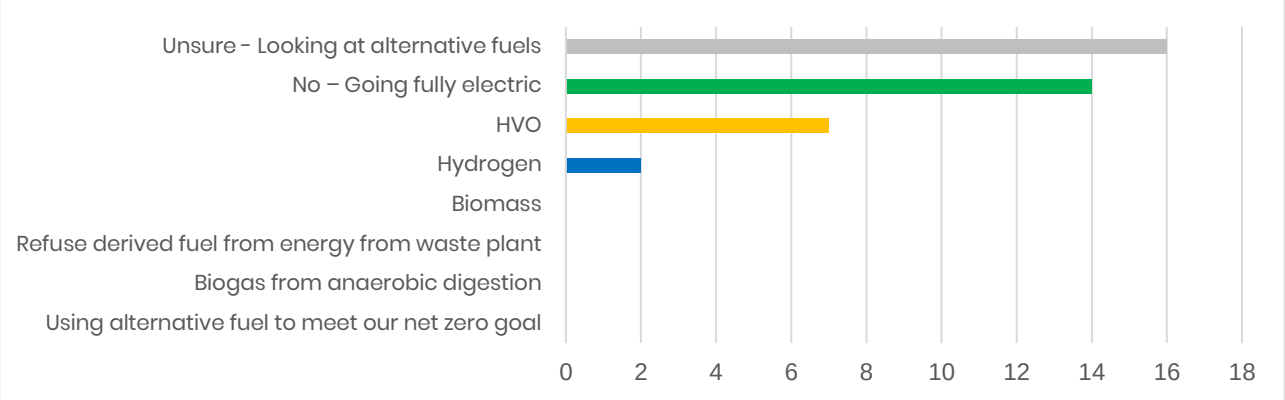
Energy Saving Trust's Local Government Support Programme (LGSP) can support councils with identification of key taxi locations, to inform EV infrastructure plans and incentives through a taxi driver support survey.

Step by step case for fleet electrification

At the request of LA officers, this is the third time this Forum has covered electrification of council fleets. Previously, Energy Saving Trust's fleet team covered depot electrification considerations (Feb 22) and Durham County Council showcased how they electrified their council fleet (May 22).

At the last forum, alternative fuels were raised in the breakout session. We asked officers if their councils were looking at moving to alternative fuels: 41% said there were exploring this, 35% were going 100% electric, 23% were already using hydrogenated vegetable oil (HVO), 5% were using hydrogen, and but none were looking at using an alternative fuel as a way to meet their net zero goal, so these options were seen only as an interim step.

Figure 1 - Q. Is your council looking at an interim step of using alternative fuels before finally moving to electric fleet? (39 responses)



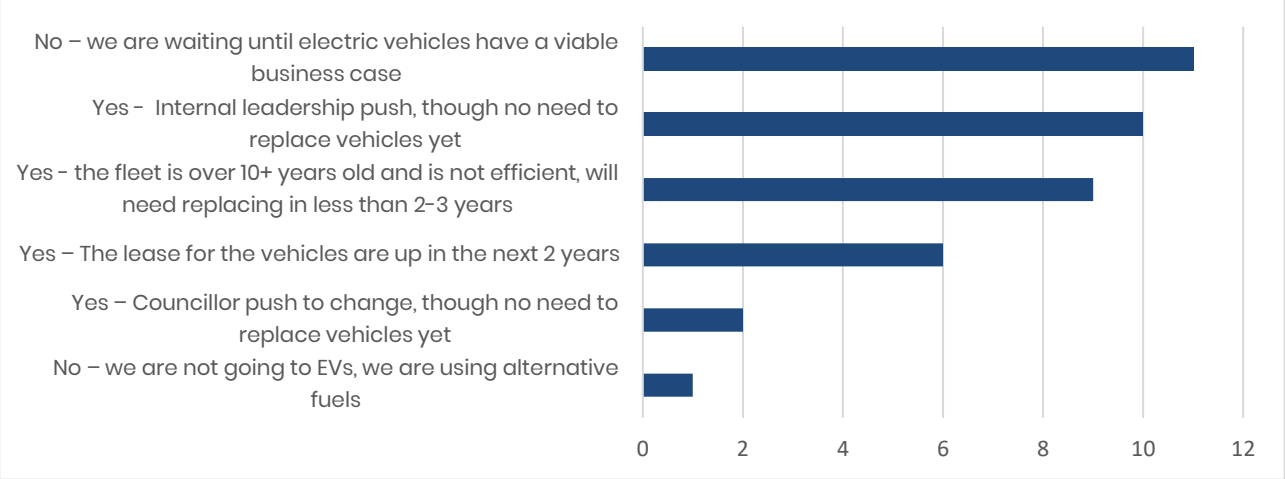
Energy Saving Trust recently published their HVO Policy setting out three concerns about HVO and Used Cooking Oil (UCO) in fleets. Energy Saving Trust are technology agnostic and note that HVO can be a viable low carbon solution in some circumstances (provided the supply chain emissions are accounted for and minimised as close to zero as possible). However, our recommendation is that HVO is too valuable a commodity to be used in sectors or for purposes where there are other viable low carbon options like battery electric vehicles (which may in fact be lower carbon when the associated emissions from HVO and UCO are properly accounted for). The focus of alternative fuels discussion was to ensure energy efficiency is at the heart of the discussion, that it is being used for the right transportation model and to be aware of unintended consequences, for example , biodiversity impact and health impacts, including emissions like, Particle Matter, Nitrous Oxide, Sulphur Dioxide etc.

Nottingham City Council presented their journey to electrifying their fleet. Currently 51% of the City's fleet is electric, and they advised that they electrified most of the fleet without having to upgrade their depots. The main reasons were having load management systems in place and using 22-44kW chargers, as most vehicles can charge overnight. While discussing their electric refuse collection trucks, they are finding EVs are coming back at the end of the day's collection round with more battery power remaining than expected, and earlier in the working day (please note this example is from their initial trial and they now have 13 more electric refuse collection trucks on order). Their business case is justified through defunding diesels, lower maintenance costs and reduction in EV prices over time (price parity with diesel vehicles is likely to be achieved between 2025-2030), plus supporting this with training and awareness of EVs with staff.

Nottingham City Council have a ULEV framework in which any council can utilise. All electric vehicles have been tested and trialled by the council with specifications in place. For more information: https://www.nottinghamevservices.co.uk/wp-content/uploads/2021/03/ULEV-Brochure-Digital-Compressed.pdf

To understand the urgency for fleet changes in councils, we asked whether councils need to change to a net zero emission fleet immediately. Whilst most can wait with no urgency, a quarter of council fleets are aging and need replacing and 15% are near the end of the lease. The main priority is how to support councils in this period of transition, as a concern raised was that if new diesel-powered refuse collection vehicles are procured it may drive use of alternative fuels and weaken the business case for investing in EV refuse collection trucks, due to the higher upfront costs and not looking at whole life savings.

Figure 2 – Q. Does your council fleet need a net zero emission change now? (39 responses)



Innovation and Funding

Further to the last forum we explored EV strategies, which is a key part of the On-street Residential Chargepoint Scheme (ORCS) for 2022/23, as councils now need to prove how EV chargepoint sites were chosen. Whilst we explored how councils were to fund the additional 40%

of costs, we found most were "unsure", we never explored how the change from 75% to 60% had impacted any council proposals of bids or delayed the process. We found out of 35 responses:

- 26% of councils have decided NOT to go ahead with ORCS applications due to the funding change
- 20% are having to find a new CPO
- two councils found that their CPO pulled out of ORCS proposals due to the new criteria
- 17% councils are having to delay or restart their procurement process
- 9% councils have found increased costs for ORCS projects, and one council had to forfeit some viable sites
- two councils had to agree to longer contract lengths
- sadly one council had to forfeit low-income sites as part of ORCS proposals
- 14% of councils stated that it impacted them in "other" ways. We asked for more detail in the forum, key items included:

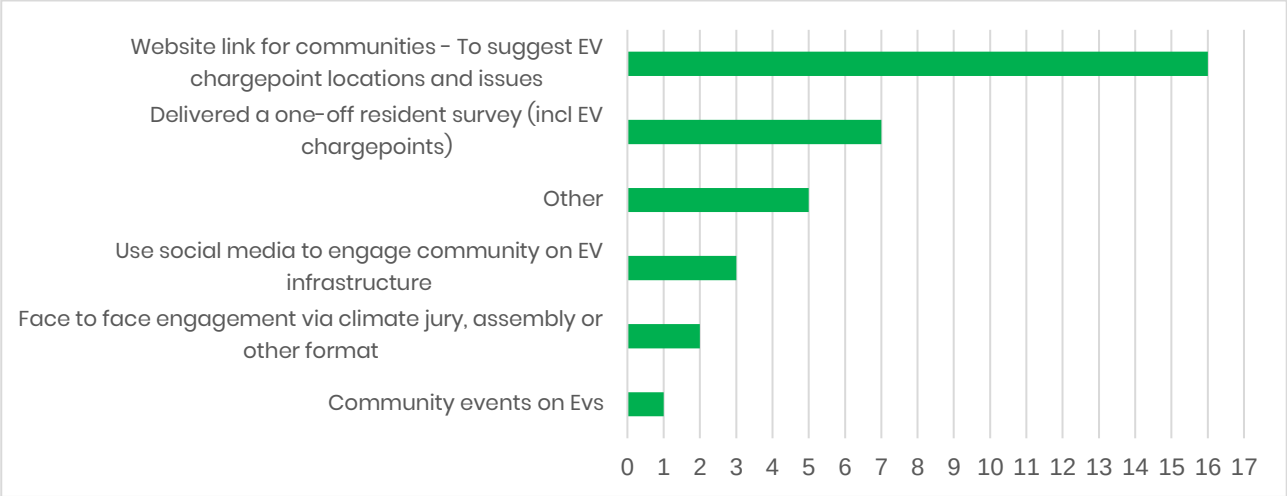
Lack of officer capacity to put in application
Lack of viable sites
Internal decision being a bigger factor in delaying ORCS application than the grant dropping to 60%
ORCS criteria too restrictive for innovative procurement and business models

Energy Saving Trust deliver community engagement workshops for LA officers with community EV survey guidance note to help you create your own survey. Please get in touch with LGSP@est.org.uk for more information

Whilst exploring funding, a key component for UK Government bids is early community engagement on electric vehicle infrastructure. We wanted to see how councils are engaging their communities. Most councils' engagement with the community was mainly website based. It was great to see surveys mentioned and face to face community EV events; however, some officers selected "other" regarding which no further details were provided.

Then we looked into how councils may be utilising peer-to-peer charging (e.g. Co-charger) with their communities. Three councils are promoting them, nine councils are referencing it in their EV Strategy, and one council is looking at them in the local area to see how they can help EV plans, however there are not enough private domestic charge points in the area to support their level of likely demand.

Figure 3 - Q. How are you currently communicating with your communities to understand their current EV Challenges? (34 responses)



Western Power Distribution (WPD) provided an overview of upcoming code changes for all District Network Operator (DNOs) from April 2023 . WPD is the DNO for the Midlands and Southwest, and they are a key part of electricity network system. DNOs distribute energy to customers through maintenance, fixing the network, connecting customers, and operating a smart system, taking energy into the network as well as distributing it out.

From 1st April 2023 there will be a significant DNO code change, which will hopefully tackle the high DNO cost challenges that a number of council officers have been raising during the previous forums. This code change will mean that instead of the current approach, in which the customer putting a new connection into the system pays a proportion of the reinforcement costs for demand and generation, the costs will from 1st April 2023 be funded by the DNO through Distribution Use of System (DUoS), which is a charge added to all electricity bills.

The code review sets out different connection charging depths for demand and generation connections, which are subject to the application of high-cost thresholds; to find out more, you can contact your local DNO. The key priority for DNOs is to have early discussions with councils about any projects being developed; projects already at design stage may be too late to secure grid capacity. Any applications before 1st April 2023 will be subject to the current code, therefore, for any infrastructure reinforcement and large extension assets, the customer will be liable for 100% of the costs.

3. Breakout sessions

We held three breakout rooms, in which each session focused on a topic introduced by the presentations.

3.1. Journey for taxi electrification

Incentives to Electrify

Transport for Greater Manchester asked Bristol, regarding the incentives detailed in their presentation, which had been the most enticing to the taxi trade. Bristol felt that it was too early to say which incentives are most effective for taxi electrification. That said, they have had 250 applications for Clean Air Zone (CAZ) funding from the taxi trade, however with the funding covering ULEV (Ultra Low Emission Vehicle) criteria, their biggest concern is that taxi drivers will do a like for like swap such as Euro 5 to Euro 6, then straight to an EV.

Conversations with taxi drivers have revealed that the cost of EVs/EV infrastructure and myths about EVs are two of the key barriers to switching to an EV. To help tackle these barriers, Bristol are trying to get EVs into the hands of key taxi trade drivers, particularly those representing big taxi groups, so they can try them out.

Some councils who are considering CAZs have decided that they would not be able to offer both CAZ and ULEZ grants; however Bristol City's legal team have reviewed this and are offering both grants.

Taxi Experience Project

Questions were asked about how Bristol City are offering a taxi experience to businesses. Bristol City have invested in and are managing the 50 electric vehicles in-house (mainly vans, but they have a number of electric taxis). There has been a huge level of interest and uptake, as 300 businesses signed up for this experience, so for now they have had to stop advertising the scheme. The biggest challenge they noted, is receiving the vehicles back on time from businesses, which impacts handovers and resources.

Wheelchair Accessible Fleets

Cheshire West and Chester currently have a 100% wheelchair accessible hackney fleet but are concerned that the lack of electric wheelchair accessible vehicles and their cost will make it difficult for the hackney fleet to remain 100% Wheel chair accessible taxis.

There is growing pressure to move to a mixed fleet (removing 100% wheel chair accessible taxi requirement, an issue that Plymouth are concerned about because in other parts of Devon, where there is a mixed fleet, there is now very limited provision of wheelchair accessible taxis.

Bristol City's fleet is 100% wheelchair accessible, so they were happy to provide contact details for their licensing team. They cautioned other councils to be aware that the incentives must be right in order to stop taxi drivers moving to private hire and to keep an accessible taxi fleet and taxi drivers in the area.

Funding

Bristol City discussed the different streams of funding available:

- OZEV grants from the government which go via the manufacturers

- ULEZ grant
- Centre of Excellence was funded through Highways England as Bristol City are an Air Quality Management Area and have a motorway that cuts into the heart of the city
- DEFRA Air Quality Grant
- Early Measures Fund Grant

A question was asked around why ULEV is only for cars and not for larger vehicles. Bristol City advised that ULEV funding is available for all types of vehicles, for example if a business wishes to replace an HGV they can get up to £16k of funding. However, different levels of funding are available for different types of vehicles.

3.2. Step by step case for depot electrification

Electric Vehicle market development

A question was asked to Nottingham City Council (NCC) about their business case for minibuses. NCC has half a dozen nine-seat minibuses, two of which are only used for high dependency school runs. They are very unlikely to pay back the capital invested, as their use is very limited; but the service they provide is vital.

They also purchased several 17-seat minibuses as part of the Electric Van Experience project. For 17-seat minibuses, government funding schemes have kept prices high which has impacted the business case for LA use, as most EV models were bought out by rural bus operators.

Lead times for minibuses is approximately one year depending on the supplier. Longer lead time allows time and confidence to install infrastructure at depots. Now that NCC has infrastructure in place, and a proven business case, they are now engaging with suppliers to discuss what they have in stock where capability is similar to ICE vehicles.

Depot infrastructure

NCC have installed 40kW dual units which can supply one vehicle at 40kW or two at 20 kW. The units will balance power requirements as needed and they have found that these units can charge the 300kWh battery of the RCVs in 16 hours (typical downtime).

Vehicles are returning to depot with 40% battery charge remaining as manufacturers' figures do not account for the impact of regenerative braking, which can be significant when doing pickups going downhill.

The load of each Electric Vehicle Charging Point (EVCP) is balanced against the depot building power usage, when the building infrastructure is in use. The initial quote for grid reinforcement that NCC received suggested significantly more power and chargers would be required to serve

all their needs, but load balancing brought costs down significantly. In NCC's experience, building a team of experts is key.

NCC explained how they are currently putting in forty Vehicle to Grid (V2G) chargers and looking at adding V2G capacity to RCVs. In general, for charging provision, they advised other LAs to get what is needed, but be aware that some chargers may need to be removed/replaced in 5-6 years with new or better solutions.

When looking at purchasing electric vans, build evidence for what is needed from existing fleet, and use telematics data such as mileage of vehicles, time on the road etc, to back up what types of trips the vehicle is actually doing and what charging power is needed. NCC have found it useful to engage with union reps to build support (particularly around health benefits to drivers from less noise and smooth driving). This is very effective if the representatives are also drivers.

For wireless chargers, NCC currently have a trial taking place at the depot. Currently the power output is 10.7kW from the charger, with 10.3kW going into vehicle. Main discussions are concerning wireless cost vs standard charger costs. Also, NCC are installing five wireless EVCPs for a taxi rank in 2022.

Current wireless charging units are not commercial technology and are intended for garage use because current hardware models are fragile. Receiver units are fitted to the underside of vehicles so drivers need to drive carefully and slowly when going over bumps to avoid breakage.

Fleets Taken Home

NCC spoke about how smaller vehicles are also using the 40kW chargers, and the council does not have a rapid unit to charge smaller vehicles. For fleet vehicles based at officers' homes, they have been instructed to use the chargers when they are in the office for meetings or other purposes.

Business case

While the upfront cost of an electric RCV is higher than an ICE RCV, savings are significant over the lifetime of the vehicle – fuel and maintenance costs are much lower for EVs. This is compounded over the longer lifespan of an EV, because 8-year battery warranties give confidence to keep operating.

There are also productivity gains from using EVs. NCC has seen crews returning to depots 40-45 minutes earlier, probably due to better acceleration and torque. Drivers also report EVs are more maneuverable and can get around smaller streets more easily. There is also no time impact from refueling during rounds.

Note that these findings are from the first 2 vehicles only – it may be different if running more – NCC will have more information at the end of the year.

3.3. Innovation and Funding

DNO Code Change

This code change will impact both public EVCP and depot electrification costs. It covers any connection to the DNO's network where, historically, if there had been an element of reinforcement, the majority of the costs would have been charged to the connecting customer. From 1st of April 2023, up to the high cost cap, reinforcement will not be charged to the connecting customer. The reinforcement costs will be socialised and incorporated into utility bills via Distribution Use of System (DUoS).

If the new substation is required as part of the connections asset, as part of the extensions asset to connect that customer, then 100% of the cost will be charged to the customer. If the new substation is required, as part of the reinforcement element then those costs won't be charged to the connecting customer. So the nature of the connection depends on the costs that councils will receive with electric vehicle infrastructure projects.

WPD are looking at introducing a managed capacity element. For example, if you want to introduce 10MW over 10 years and you wanted to increase your supply by 1MW each year, then WPD would install the 10MW cabling from the start and then each year we would increase by 1MW and issue a new connection agreement. We may need to do reinforcements to the network down the line and we would manage that as part of our DNO strategy. This is why DNOs prefer early engagement with councils to plan these types of projects, to future proof the system.

Obtaining Costs from DNOs

Talk to DNOs as early as possible to get a quote to ascertain what the costs are to connect to the network. This is very important if you have a number of potential sites and specific locations where cables run down specific roads. However you will not receive new code costs in quotes, as this is only applicable for any applications after 1st April 2023 .

Reinforcement Timescales

Ofgem says if WPD cannot give the full reinforcement, then they have to offer a curtailed offer, plus an end date when the network will be reinforced.

WPD's Plan *REO ED2 2023-2028* will set out how they plan to expedite the reinforcements required.

Normally, WPD were not able to reinforce ahead of actual need, but the 2023 Code Review means they can start to schedule early reinforcements, so this should now be possible. Noting that from April 2023, lower costs this may lead to more applications and could impact current delivery timescales, as more work would be received.

LEVI Scheme & Consortium Bids

Swale council noted some difficulties within two-tier areas, where areas may be missed out due to demand being higher in other county areas. A number of councils also agreed with similar

issues, so they will watch closely to see how the pilot scheme turns out. The pilot winners are expected to be announced some time in August 2022; however, the current national political changes happening at the moment may delay this timescale.

Energy Saving Trust noted that LEVI bids must be led by an LA, but other partners, including the private sector, are allowed to be a part of the consortium.

The responsibility will be on LAs to expand the EVCP network. The LEVI scheme has allocated £50m to support upskilling officers and building up staffing and this will be available to all LAs in England; it is unclear how councils will access this funding source.

4. Feedback on forums

At the end of the forum, we asked for feedback from officers. 92% of officers said they would recommend the LA Forum to another authority officer.

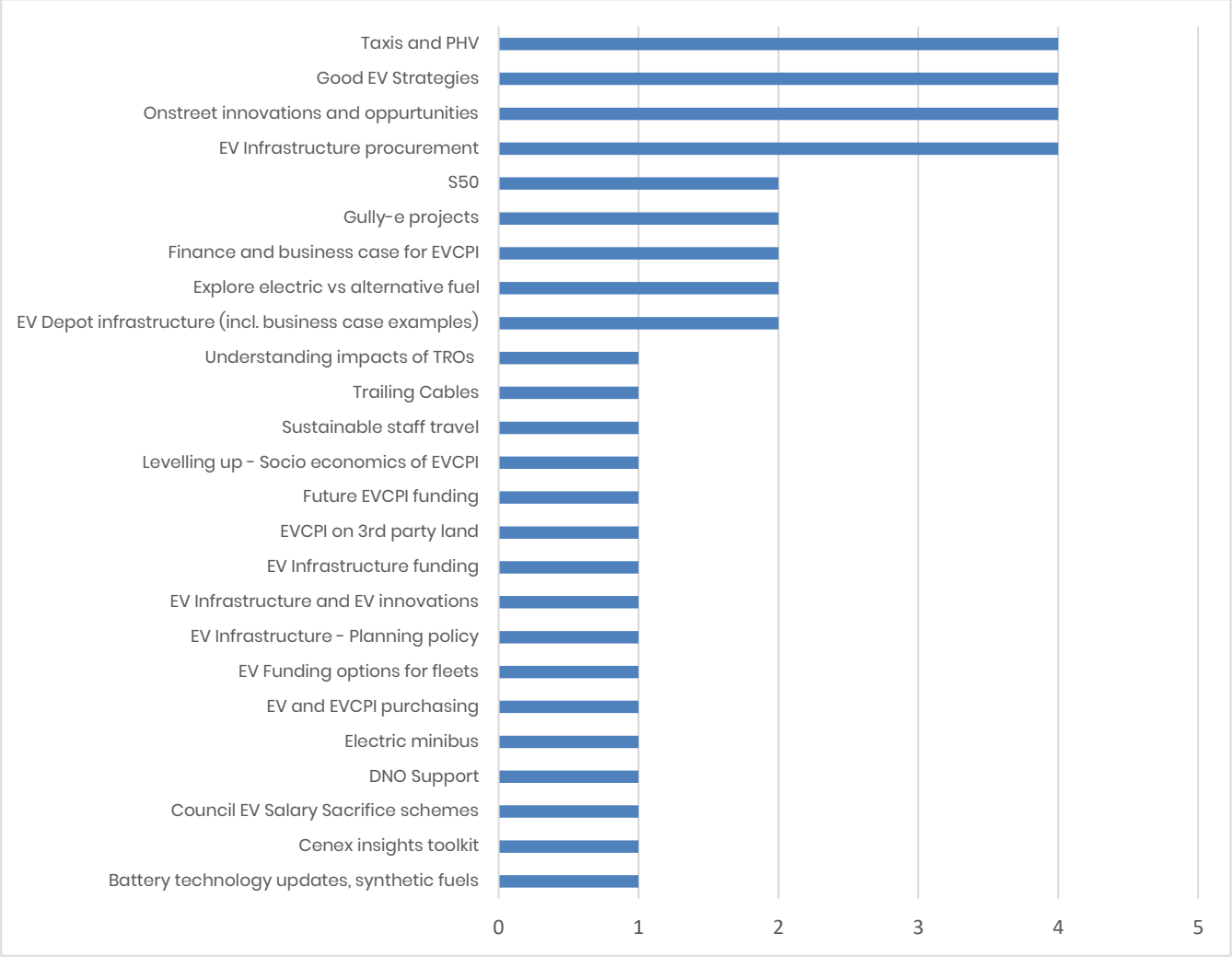
Interestingly, two responses said they were unsure if they would recommend the forum. 6% of officers said they would prefer the sessions to cover more topics but in less detail; whereas 44% of officers like the new breakout sessions covering one topic in more detail. We are now exploring with Sub National Transport Bodies (STBs) that are creating local EV Forums regarding how they could explore one topic in more detail and be more tailored to the local challenge, plus deliver action to support those officers who would like more detail in the forum.

At the forum we detailed how we could link our forums with the Scotland teams, plus provide support for Wales and Northern Ireland, to ensure our topics are relevant for all. We also identified the need to link with others that provide forum support so that councils can avoid any duplication. We also noted that the top challenge for councils is shortage of internal resources.

We asked what main areas could be suitable for discussion at our next forums:

Figure 5 - What topics or questions would you like the next two forums to cover? (43 responses)

Figure 4


Taxis and PHV
Good EV Strategies
Onstreet innovations and oppurtunities
EV Infrastructure procurement
S50
Gully-e projects
Finance and business case for EVCPI
Explore electric vs alternative fuel
EV Depot infrastructure (incl. business case examples)
Understanding impacts of TROs
Trailing Cables
Sustainable staff travel
Levelling up - Socio economics of EVCPI
Future EVCPI funding
EVCPI on 3rd party land
EV Infrastructure funding
EV Infrastructure and EV innovations
EV Infrastructure - Planning policy
EV Funding options for fleets
EV and EVCPI purchasing
Electric minibus
DNO Support
Council EV Salary Sacrifice schemes
Cenex insights toolkit
Battery technology updates, synthetic fuels
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2
3
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5

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Questions and Advice

Some queries could not be answered during the forum, please find responses below.

Table 1 - **Questions asked at the Forum that were not answered – 15.07.22**

Area	Question	Advice/ Comments
Taxi Electrification	E-taxi only ranks are encountering the problem that apparently this cannot currently be enforced within the legislative framework (e-taxi charging can be enforced, but not the ranks). Has anyone found a way through this?	Nottingham City Council are trialling a wireless charging e-taxi rank which will allow for ease of enforcement (please find more here). The legislation for ranks (stands) can be found on this link. 2020 Statutory taxi and private hire standards can be found on this link. We will explore this further at future forums.
Electrification of water vehicles	Are there any plans for grants to be made available for conversion of watercraft? Some boating companies in my area may be interested but the cost of EV boat conversion can be prohibitive.	In 2021, DfT and Innovate UK set out a £23 million Clean Maritime Demonstration Competition (CMDC) to develop green innovations for green shipping for the future including zero-emission vessels and clean port infrastructure. Phase 1 ended in 2022 and a further £12 million is available for phase 2 this year. Find out more in DfT Clean Maritime Plan – link here