Innovate UK

eFREIGHT 2030

Funded by UK Government

CATAPULT Energy Systems

Accelerating the transition

A business modelling perspective for eHGV scale-up

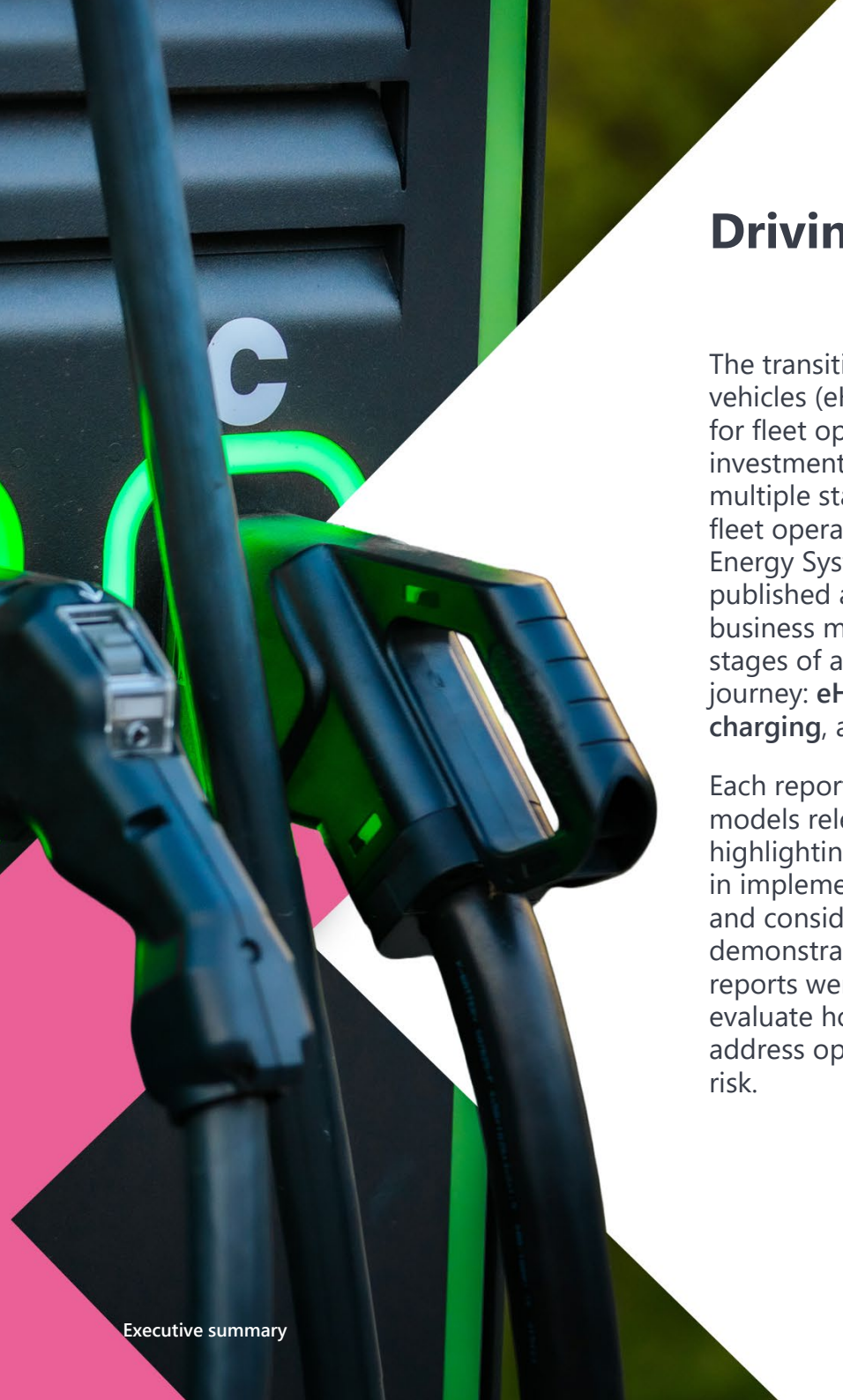
March 2026

Contents

Authors:
Matthew Toomy Conlan, Business Modelling Consultant
Reace Edwards, Senior Business Modelling Consultant

Please note that while this report is funded by the UK Government as part of the Zero Emission HGV and Infrastructure Demonstrator programme, its findings and conclusions are independent industry views and are not intended to represent government policy.

1. Executive summary



Driving the transition to eHGVs

The transition to electric heavy goods vehicles (eHGVs) is far from straight forward for fleet operators. It involves significant investment and operational decisions across multiple stages of electrification. To help fleet operators navigate these challenges, Energy Systems Catapult has previously published a series of reports exploring business model options across three key stages of a fleet operator's electrification journey: **eHGV procurement**, **depot-based charging**, and **public eHGV charging**.

Each report outlines innovative business models relevant to its focus area, highlighting the key stakeholders involved in implementation, primary benefits, risks, and considerations, alongside case studies demonstrating real-world applications. These reports were designed to help operators evaluate how different approaches could address operational pain points and mitigate risk.

This report builds on that earlier research by presenting feedback from fleet operators on those business models, gathered through multiple rounds of engagement, including an interactive session and online surveys. Our goal was to test models by capturing real-world industry perspectives, identifying which features are most attractive, which are less desirable, and the reasons behind these preferences. These insights are critical for identifying core features that future business models should prioritise to better align with the needs of the UK road freight sector. Ultimately, this report aims to accelerate the deployment of eHGVs and supporting infrastructure by offering targeted recommendations for key stakeholders, reflecting the findings from our research and designed to address fleet operator needs.

Key insights and business model design implications

Key insights from our business model testing with fleet operators are summarised across three critical stages of the electrification journey.

eHGV procurement

There is a strong preference for straightforward eHGV purchasing models that exhibit familiarity with current HGV purchasing practices among fleet operators.

Adoption of innovative purchasing models is conditional on offering shorter-term, flexible contracts, minimising contractual complexity, and clearly defining and upholding service level guarantees.

Purchasing models must be tailored to the specific needs of small and medium-sized enterprises (SMEs) to avoid exclusion and support sector-wide electrification.

Understanding the total cost of ownership (TCO) of different purchasing models is essential for enabling relative comparisons and informed decision-making.

Depot-based charging

Fleet operators value attributes of an owner-operator approach for deploying depot-based charging infrastructure, while still recognising a key role for third-party partners.

There is an openness to exploring service-based models, but their appeal depends on suitably structured agreement terms.

There is a strong appetite for investing in and deploying on-site renewable generation and storage assets to support eHGV charging.

Fleet operators are open to exploring energy optimisation and flexibility services that can maximise cost reductions and provide access to new revenue streams.

Site tenure and physical conditions are key factors influencing fleet operators' ability to deploy charging and renewable energy infrastructure.

Shared charging models are viewed as an attractive solution, though fleet operators have concerns around access, scheduling and operational disruption.

Public eHGV charging

Financial factors are seen as a significant barrier to public eHGV charging, specifically high charging costs and unpredictable pricing.

Public charging is widely recognised as an enabler for enhancing operational flexibility and resilience, but future solutions must address core operational needs to deliver on this potential.

Public charging solutions necessitating upfront investment are not entirely dismissed, but interest is highly contingent on the level of investment required, expected returns, and demonstrable operational benefits.

Together, these insights highlight critical business model design requirements for future solutions that enable the transition to eHGVs. Fleet operators need access to propositions that deliver financial transparency, operational flexibility, and clear accountability, while also promoting sector-wide accessibility.

Financial clarity is a universal priority. Fleet operators seek transparent cost breakdowns and predictable pricing to mitigate perceived risks and hidden costs, particularly in leasing, subscription, and service-based models.

Flexibility is equally essential. Fleet operators favour short-term, scalable solutions that allow adaptation to evolving market conditions and technological advancements, avoiding long-term lock-in.

Control and accountability are also key. While fleet operators value third-party expertise, they desire control over core operational decisions and need clear accountability structures, performance guarantees, and rapid issue resolution.

Inclusivity is essential for sector-wide adoption. Solutions must address the specific needs of SMEs to prevent unintentional exclusion and enable a sector-wide transition to eHGVs.

Renewable integration unlocks opportunities. Fleet operators have expressed strong interest in charging solutions that integrate renewable generation, energy storage, and optimisation to deliver cost savings, enhance resilience, and align with their wider sustainability objectives.

Recommendations to accelerate the deployment of eHGVs and supporting infrastructure

Drawing on our research findings, we have developed a set of practical recommendations to accelerate the deployment of eHGVs and supporting infrastructure. Together, these measures can deliver a more efficient, cost-effective transition. A summary of these recommendations is provided below, with further detail and stakeholder-specific actions outlined in Section 6 of this report.

eHGV procurement

Design straightforward purchasing models that integrate optional value-added services to improve fleet operator confidence in eHGVs. Provide detailed cost breakdowns and comparison tools for different purchasing models to improve financial transparency.	OEMs
Explore opportunities to leverage public funding to enable more attractive leasing and financing packages for eHGVs.	FUNDING FINANCE

Depot-based charging

Conduct early feasibility studies and scenario planning for depot charging and renewable energy integration, including asset sizing, site layout, and grid connection requirements.	FLEET OPERATOR CISPs DNOs DEVELOPER LANDLORDs
Explore strategic partnership opportunities to integrate on-site renewable generation, storage, and optimisation services within charging solutions.	CISPs DEVELOPER ENERGY OPT AGGREGATOR RESEARCH DNOs TECH
Design, demonstrate, and promote innovative charging solutions like modular charging and alternative ownership models for constrained sites.	CISPs INDUSTRY RESEARCH

CISPs - Charging infrastructure and service providers
DfT - Department for Transport
DNOs - Distribution network operators
Energy Opt - Energy optimisation provider
Finance - OEM finance companies
Funding - Public funding bodies
Industry - Industry associations
Research - Research organisations
Tech - Technology providers
Vehicle OEMs - Vehicle original equipment manufacturers

Public eHGV charging

Collate and publish transparent pricing structures for public charging solutions.	CISPs INDUSTRY
Offer flexible subscription plans to accommodate changes in operational needs and charging requirements.	CISPs FLEET OPERATOR
Deploy infrastructure on strategic freight corridors and provide visibility through mapping tools.	CISPs DNOs FLEET OPERATOR INNOVATE UK

Cost cutting measures

Design accessible, multi-faceted funding programmes that offset transition costs for fleet operators across key cost areas.	DfT INNOVATE UK INDUSTRY FLEET OPERATOR
Develop independent cost assessment tools to provide clarity on total transition costs.	RESEARCH
Establish and regularly update service level agreements, performance standards, and warranties for eHGV-related products and services to build fleet operator confidence.	OEMs FINANCE CISPs DEVELOPER ENERGY OPT TECH AGGREGATOR

CISPs - Charging infrastructure and service providers
DfT - Department for Transport
DNOs - Distribution network operators
Energy Opt - Energy optimisation provider
Finance - OEM finance companies
Funding - Public funding bodies
Industry - Industry associations
Research - Research organisations
Tech - Technology providers
Vehicle OEMs - Vehicle original equipment manufacturers

2. Setting the scene

The UK government, in partnership with Innovate UK, has already invested over £120 million into the Zero Emission HGV and Infrastructure Demonstrator (ZEHID) programme, across four innovative projects: eFREIGHT 2030, Project Electric Freightway, Zero Emission National Freight, and HyHaul. The programme aims to roll out around 300 zero emission HGVs and deliver over 70 planned refuelling and electric charging sites, helping to provide the crucial infrastructure required for the haulage sector to decarbonise.

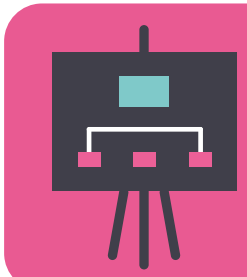
As a consortium partner, Energy Systems Catapult remit has been to ensure that the eFREIGHT 2030 demonstration can gather the evidence required to understand the challenges and opportunities of eHGVs in the real world. The Catapult has also been carrying out detailed analysis and insight to support a commercially successful and rapid decarbonisation of the freight sector.

For fleet operators, achieving a successful transition to eHGVs is far from straightforward. The significant cost of eHGVs and supporting infrastructure, coupled with the technical complexity of fleet electrification, introduces a range of operational decisions that must be carefully managed. To help navigate these challenges, we have produced a series of reports exploring business model options across three key stages of a fleet operator's electrification journey:

- **eHGV procurement;**
- **Depot-based charging;**
- **Public eHGV charging**.

These reports serve as both a knowledge base and a preliminary decision-making tool, helping fleet operators qualitatively evaluate how different models could address operational pain points and mitigate risks.

This report presents fleet operator insights on the business models explored in our previous reports. It highlights the features considered most valuable, allowing us to outline core elements that future business model design should prioritise to better meet industry needs and accelerate adoption. The report concludes with a set of targeted recommendations for key stakeholders, aimed at fostering a more favourable environment for scaling and accelerating the deployment of eHGVs and supporting infrastructure.



Access our previous reports on business model options for eHGV procurement, depot-based charging, and public charging by clicking on the images shown.

3. Our approach to testing business models

We set out to capture real-world industry perspectives on the business models outlined in our previous reports. With this, our goal was to identify which model features are most attractive, which are less desirable, and the reasons behind these preferences. These insights are essential for identifying design requirements that make future propositions more compelling, increase the likelihood of their adoption, and ultimately accelerate the uptake of eHGVs and supporting infrastructure.

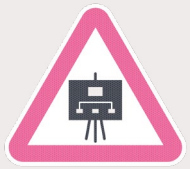
Assumption mapping and question setting

For each model, we undertook assumption mapping and question setting. This process began with identifying key business model hypotheses that required validation. Hypotheses are the beliefs and assumptions underpinning a business model, which must be tested to determine whether the model is likely to succeed. We then created targeted questions for fleet operators to test these hypotheses during subsequent engagement activities.

Our hypotheses were shaped by three core considerations:

Desirability

Does the proposition create real value for fleet operators?



Feasibility

Can the model actually work in practice?

Viability

Is the pricing structure acceptable and sustainable?

Putting hypotheses to the test

After the publication of each business model report, we engaged with project consortium members to test our hypotheses using the questions developed. Our data collection approach varied across engagement rounds. Where we had the opportunity to leverage prescheduled meetings, we used interactive presentations to capture insights. In cases where face-to-face engagement opportunities were limited or the number of questions was substantial, we relied on online surveys.

Because engagement occurred at different intervals throughout the eFREIGHT 2030 project, sample sizes differed for each round of data collection. Accordingly, to avoid confusion and potential misinterpretation, we have intentionally excluded specific response counts when summarising insights in the next section. Instead, we focus on outlining the key findings that emerged across engagements, as these provide the foundation for understanding implications for future business model design.

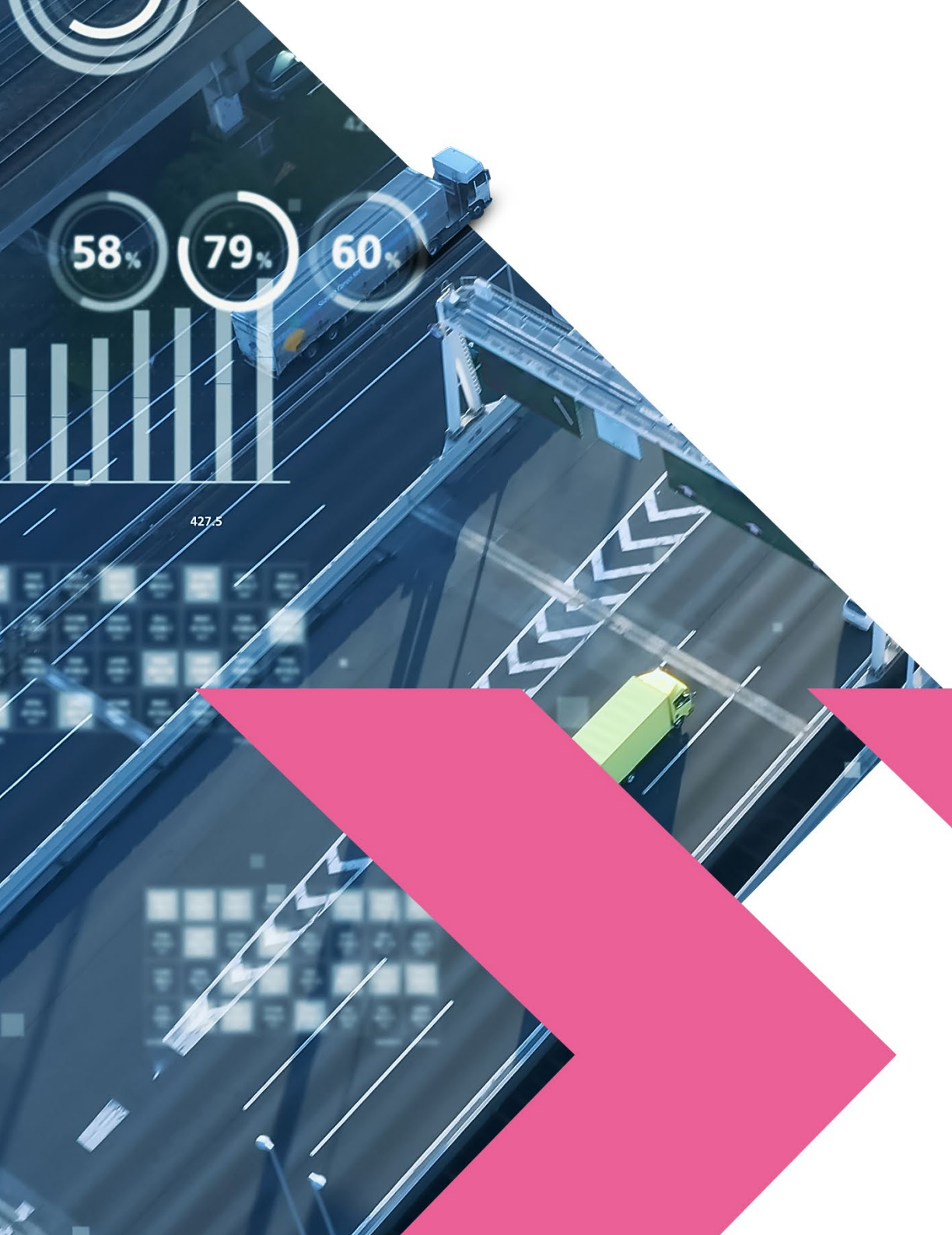
Broadening industry perspectives

The UK road freight sector is highly fragmented, comprising more than 50,000 businesses, more than 90% of which are SMEs[1]. SMEs often have different operating models, financial priorities, and decision-making considerations compared to larger organisations. Engaging with them is therefore important to ensure that business model testing and analysis reflects the diverse operational contexts across the industry.

To build on the insights already gathered, we sought to engage additional fleet operators beyond those in the consortium. Our aim was to ensure that our findings captured a wide range of industry voices, with particular emphasis on SMEs given their significant market share. Questions were designed to be accessible to all participants, regardless of their familiarity with our previous business model publications or their experience with electrification, recognising that some operators may not yet have considered transitioning to eHGVs.

Unfortunately, despite multiple outreach attempts using different mechanisms, we did not receive any expressions of interest from fleet operators to participate in this additional engagement exercise. Readers should therefore note that the findings presented throughout the remainder of this report may not be representative of the sector as a whole.

[1] Atkins Réalis. (2024). Understanding the Road Freight Market. Accessed at: https://assets.publishing.service.gov.uk/media/66fd22b130536cb927482a92/dft-understanding-the-road-freight-market.pdf



4. Insights gathered

Throughout this section, we share fleet operators' perspectives on business models across three critical aspects of the fleet electrification journey: eHGV procurement, depot-based charging, and public eHGV charging.

eHGV procurement

We tested the four innovative purchasing models presented in our report eHGV purchasing options and considerations through an interactive session involving fleet operators and other key stakeholders, including vehicle OEMs and CISPs. Please refer to the table for a summary of these models.

First, each model was explored individually, giving participants the opportunity to assess its desirability and raise any feasibility concerns. The models were then compared collectively to identify which were viewed as most appealing, which were seen as less practical, and the reasoning behind these perspectives. This subsection outlines the key insights gathered from the session, highlighting specific findings for each model, where applicable, as supporting evidence.

Purchasing model	Description
Vehicle component leasing	Fleet operators purchase main vehicle body components (e.g., chassis, cab, and motor) but lease the battery component.
eHGVs-as-a-Service	Provides fleet operators with a comprehensive electrification solution, inclusive of eHGVs and charging infrastructure, with payments made through regular instalments to a service provider.
Aggregated purchasing	Fleet operators participate in joint procurement exercises to reduce the purchasing cost of eHGVs.
Concessional finance	Fleet operators purchase vehicles using loans with concessional terms (e.g., lower interest rate or longer repayment schedules).

There is a strong preference for straightforward models that align with current HGV purchasing practices.

When session participants were asked to rank the four purchasing models in order of appeal, concessional finance emerged as the most attractive option, receiving the most first place votes. When asked why they ranked this model highest, participants repeatedly described concessional finance as being straight forward, "easy to get on board with", and bearing closest familiarity with existing HGV purchasing practices.

The preference for simple and familiar purchasing models was reinforced when discussing perceived challenges of other models, namely aggregated purchasing. While some fleet operators saw value in collaboration to reduce unit costs, some felt the model would be difficult to implement in practice. The level of co-ordination required between organisations was seen as a potential barrier, making it feel too far removed from current ways of working.

These insights suggest that simplicity and alignment with existing approaches are key drivers of appeal. Models that require significant operational change or coordination may face resistance unless they offer clear and compelling benefits.

Adoption of innovative purchasing models is conditional on offering shorter-term, flexible contracts, minimising contractual complexity, and clearly defining and upholding service level guarantees.

Although concessional finance ranked highest overall in terms of appeal, vehicle component leasing also attracted some interest, particularly as a second-choice option. The appeal of this model lies in its potential to reduce upfront capital costs and thereby lower entry barriers for fleet electrification. However, fleet operators raised concerns about the potential for unclear accountability in the event of underperformance or other issues, as well as the added complexity of managing multiple providers.

Participants signalled the importance of having clear service guarantees and a well-defined support structure. Bundling battery maintenance and replacement within the broader battery lease agreement was viewed as another way to reduce risk and administrative burden. Without these safeguards, the perceived complexity and risk of this model could outweigh the benefits of reduced upfront investment.

This pattern of conditional interest was even more pronounced for the eHGVs-as-a-Service model, which received the highest number of last-place rankings. The primary concern for this model, as raised by most fleet operators, was the long-term contractual commitment required. Additional reservations included potential loss of control over core delivery functions and apprehension about bundling multiple services into a single offering, which operators feared could increase reputational and operational risks. Fleet operators expressed a strong preference for shorter, flexible agreements that could accommodate the dynamic nature of logistics operations and customer requirements.

For both models, operators consistently stressed the importance of robust service level guarantees and contractual flexibility, especially given the rapidly evolving technological and commercial landscape. These requirements reflect a broader desire for control, predictability, and risk mitigation in the transition to eHGVs.

Purchasing models should be tailored to SME needs to avoid exclusion and support sector-wide electrification.

When discussing different purchasing models, participants frequently underscored the specific needs and requirements of SME fleet operators[2]. They emphasised that the effectiveness and accessibility of the concessional finance model for SMEs hinges on careful design. A key design requirement identified was simplicity in accessing finance, suggesting the process should involve minimal administrative burden and data requirements that SMEs can realistically meet. One participant cautioned that overly restrictive eligibility criteria, such as strict credit requirements, detailed data requests, or extensive emissions reporting, could disadvantage SMEs compared with larger operators. Concerns were also raised about potential reporting obligations, with another noting that SMEs are likely to be wary of models that impose heavy administrative demands.

The aggregated purchasing and eHGVs-as-a-Service models were also discussed through an SME lens. Aggregated purchasing was viewed as a way for SMEs to secure better pricing and lower costs by leveraging collective buying power. However, one participant suggested that SMEs might favour a variation of this model where a third-party coordinates tendering for the group, allowing them to benefit without having to make large individual vehicle commitments. Similarly, the long-term contractual obligations of the eHGVs-as-a-Service model were perceived as a significant barrier for SMEs.

These insights reinforce the need to tailor purchasing models to the operational realities of SMEs. Solutions must prioritise simplicity and accessibility to ensure SMEs are not unintentionally excluded from models that could deliver real value, thereby supporting a sector-wide transition to eHGVs.

[2] Please note that these insights reflect participants' perceptions of SME needs and requirements, rather than direct feedback from SMEs themselves.

Understanding the TCO of different purchasing models is essential for enabling relative comparisons and informed decision-making.

Although most participants ranked concessional finance as the most attractive purchasing model due to its simplicity and familiarity with existing purchasing practices, some also commented on its financial advantages. One participant perceived it as the lowest-cost option among the four models while another described it as a "credible mechanism" to achieving TCO parity with diesel HGVs. When asked what types of concessional terms would influence their likelihood to adopt eHGVs, fleet operators consistently identified lower interest rates and guaranteed residual values as key drivers.

Other models, such as vehicle component leasing and eHGVs-as-a-Service, were valued for their ability to reduce upfront capital costs. However, concerns were raised about their long-term financial impact. For example, for the vehicle component leasing model, fleet operators expressed caution about hidden costs, inflated lease charges, and unclear pricing structures that could undermine the initial capital savings.

The eHGVs-as-a-Service model attracted most criticism from a financial perspective. Fleet operators cited concerns about high monthly costs and a lack of pricing transparency. For some, the potential for high service fees under long-term contractual obligations made the model seem unviable, particularly in the highly competitive UK road freight sector, where profit margins are already narrow.

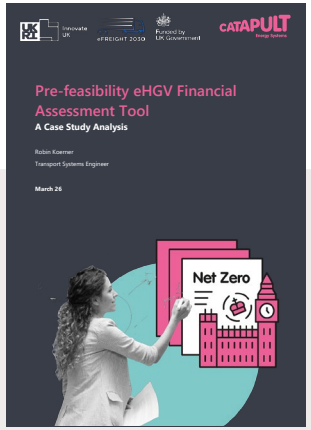
These findings underscore the importance of providing fleet operators with clear and comprehensive TCO analyses that consider different purchasing models. The ability to compare models on a like-for-like basis is essential to ensure that decisions are not solely driven by upfront cost reductions but by an understanding of long-term value.

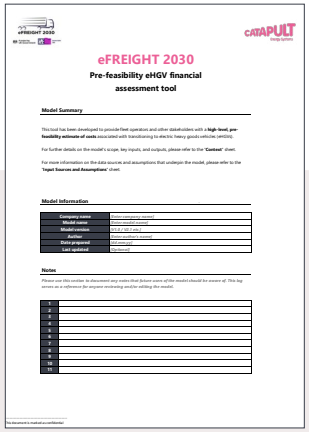
Pre-feasibility eHGV financial assessment tool

As part of the eFREIGHT 2030 project, the Catapult has developed an eHGV financial assessment tool to provide fleet operators and other stakeholders with a high-level, pre-feasibility estimate of costs associated with transitioning to eHGVs.

This tool helps users gain insight into the key activities and their associated costs when transitioning to eHGVs, including vehicle procurement, charging infrastructure, on-site renewable generation, and energy storage systems.

Please click on the images shown to access the tool as well as its accompanying case study analysis.





Depot-based eHGV charging

We undertook an online survey with fleet operators to capture their views on the business models outlined in our report, Business Model Options and Considerations for Depot-Based Charging, as summarised in the table.

The survey explored desire for ownership and control of on-site infrastructure, investment priorities and considerations, and factors influencing the feasibility of infrastructure deployment. This subsection summarises the key insights drawn from the responses.

Business model	Description
Owner-Operator	Allows fleet operators to directly own and manage their depot-based charging infrastructure, providing control over infrastructure and energy procurement and operational scheduling.
Charging-as-a Service	Service provider offers a comprehensive eHGV charging solution for fleet operators, covering financing, installation, operation, and maintenance of charging infrastructure, for a regular service payment.
Energy-as-a-Service	Service provider offers a comprehensive eHGV charging solution for fleet operators covering financing, installation, operation, and maintenance of charging infrastructure, along with site-wide energy management and optimisation, for a regular service fee.
Energy Management and Optimisation	Third-party provider implements energy management and optimisation solutions at eHGV charging depots, resulting in lower energy costs for fleet operators.
Renewable (and Storage) Integration	Fleet operator installs on-site renewable generation assets, using the energy produced to help meet charging demands.
Power Purchasing Agreement	Fleet operator enters into a commercial agreement to buy renewable energy from a nearby generator (asset owner) at rates lower than the retail electricity price.
Shared Charging Facilities	Enables a 'lead' fleet operator to maximise charging infrastructure utilisation and generate revenue by allowing other fleet operators to use their depot for eHGV charging when spare capacity is available.
Vehicle to Grid	Enables fleet operators to generate revenue from grid services by using eHGVs as energy assets.

Fleet operators value attributes of an owner-operator model, such as full asset control, for deploying depot-based charging infrastructure, while still recognising a supporting role for third-party partners.

Most fleet operators rated full ownership and control of eHGV charging infrastructure as 'moderately important', 'very important' or 'essential'. They highlighted benefits such as greater flexibility to adapt infrastructure to operational needs, improved data protection, and the ability to maximise the value of charging assets. However, some operators also expressed an openness to partnerships or shared ownership where appropriate. For example, one respondent noted that shared ownership could help manage the substantial investment required to cover their entire network of depots. Similarly, most fleet operators indicated that they would be 'likely' or 'very likely' to invest in eHGV charging infrastructure across their operational depots, reinforcing alignment with characteristics of the owner-operator model.

Despite their preference for asset ownership and control, fleet operators exhibited a strong desire to outsource the design, installation, and maintenance of charging infrastructure. One respondent noted that outsourcing key activities would be particularly valuable during the early stages of their eHGV transition, while another outlined plans to gradually develop in-house capabilities, supplemented by external expertise for compliance and best practice. This highlights a significant opportunity for third-party partners to support infrastructure deployment. Furthermore, most fleet operators reported feeling 'moderately confident' in negotiating and managing commercial agreements with third-party providers for eHGV charging and energy solutions, underscoring their openness to partnerships.

Overall, these findings indicate that while fleet operators value key aspects of an owner-operator approach, they remain open to partnerships, especially where investment scale or specialist expertise makes this both practical and advantageous.

There is an openness to exploring service-based models for deploying charging infrastructure, but their appeal and likelihood of adoption depend on suitably structured terms.

While most fleet operators value attributes of the owner-operator model, this does not imply a lack of interest in service-based delivery models. In fact, most fleet operators indicated they would consider a service-based model for deploying depot-based eHGV charging infrastructure, with only one ruling this out due to a preference for retaining ownership and control of assets. However, it is worth noting that fleet operators are currently exploring different ownership and delivery models.

One respondent highlighted the potential benefits of reducing complexity and capital expenditure through service-based models but stressed the need for clear service level agreements, cost structures, and data transparency to meet their operational requirements. They also expressed willingness to pay a modest premium to reduce administrative burden and accelerate eHGV deployment, provided the model delivered clear benefits in terms of timing, reliability, and savings elsewhere. This perspective was shared by two other fleet operators who also indicated a willingness to pay a premium. However, this view was not universal; some operators stated that willingness would depend on the specific offer or partnership, while one respondent explained they would not pay a premium for a service-based model.

Some fleet operators specified preferred contract lengths for service-based agreements, while others explained this would depend on the specific terms. Among those who provided a preference, most desired contracts under 3–5 years, with one preferring less than 3 years. One respondent noted that a 3–5-year term strikes the balance between stability for the service provider and flexibility for the fleet operator to adapt to technology and market changes, whereas longer-term agreements risk contractual lock-in to outdated solutions.

Overall, these findings suggest that fleet operators are open to service-based models, particularly where they reduce transition complexity and accelerate the deployment of infrastructure. However, adoption depends on agreements meeting specific conditions, most notably preferred contract lengths and the ability to deliver clear operational benefits.

There is a strong appetite for investing in and deploying on-site renewable generation and storage assets to support eHGV charging across operational depots.

All fleet operators rated the use of renewable energy sources to support eHGV charging as either 'very important' or 'essential', demonstrating a strong commitment to integrating renewables into their operations. Benefits cited included alignment with sustainability goals, reductions in carbon emissions, and enhanced brand reputation.

Most fleet operators indicated they were 'likely' or 'very likely' to invest in renewable infrastructure, with many having already explored or installed renewable energy assets at one or more sites. One respondent explained that this interest was driven by a desire to hedge against rising energy prices and demonstrate sustainability leadership. Energy cost savings were also highly valued by other fleet operators; when asked about the benefits of on-site renewable technologies, the majority rated energy cost savings as 'very valuable' or 'extremely valuable'.

Beyond renewable generation, all fleet operators expressed willingness to invest in energy storage assets to maximise the consumption of on-site renewable energy, even if it meant higher upfront costs or longer payback periods. One fleet operator suggested that storage could enhance renewable energy consumption, reduce grid dependency and provide a backup energy source during periods of peak demand, viewing it as a long-term investment that supports sustainability and operational resilience.

These findings highlight a strong appetite among fleet operators for renewable energy and storage investments, driven by alignment with sustainability goals, energy cost savings, and enhanced energy resilience. For further information on the additional electricity network benefits of co-locating renewable generation and storage with charging infrastructure, please refer to our report Connecting HGVs and Electricity: Enabling systems and sites for eHGV charger integration.

Fleet operators are open to exploring products and services that can maximise energy cost reductions and provide access to additional revenue generation streams.

Beyond investing in renewable generation and storage assets, most fleet operators expressed an openness to procuring third-party providers to optimise on-site energy use. Figure 1 illustrates the perceived value of different energy-related services and solutions.

Smart charging refers to controlling when vehicles are charged so that they use cheaper or lower-carbon electricity and avoid placing unnecessary strain on the electricity grid. Fleet operators consistently rated smart charging and reducing peak energy demand as 'valuable', 'very valuable', or 'extremely valuable'. This reinforces a strong desire for enhanced energy resilience and managing peak demand effectively, as previously outlined.

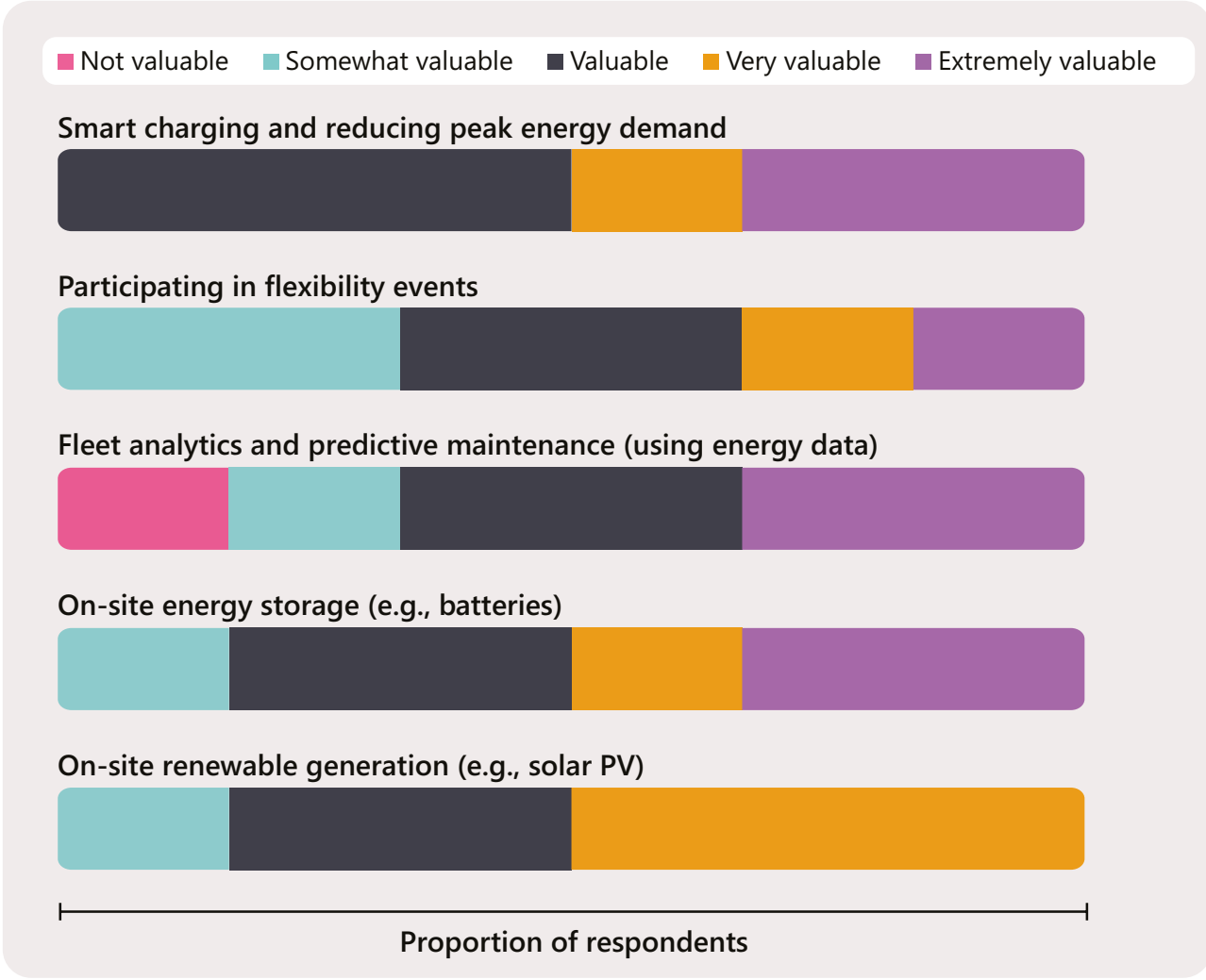


Figure 1: Perceived value of different energy-related services and solutions.

Fleet operators also saw value in taking part in flexibility events. These involve adjusting energy use in response to signals from the electricity grid. This view is consistent with responses to another survey question, where most operators rated the chance to generate revenue from eHGVs and on-site energy infrastructure as 'very appealing'. Examples include selling stored energy from eHGV batteries back to the grid through Vehicle-to-Grid (V2G) technology, as well as providing other flexibility services.

Fleet analytics and predictive maintenance showed the greatest variation in perceived value, suggesting their importance is closely tied to specific operational requirements.

One fleet operator explained that the energy-related services and solutions outlined in Figure 1 could enhance operational efficiency, sustainability, and provide valuable data for decision-making. Another noted that installing renewable energy assets alone would have limited impact, as grid upgrades would still be necessary to meet the significant energy demands of charging eHGVs. Accordingly, they stressed the importance of understanding how and when to use assets to manage demand effectively, further reinforcing the perceived importance of smart charging and reducing peak demand as an energy service.

Overall, these findings indicate strong interest in third-party led energy services, particularly smart charging and peak demand reduction. Other services, while generally seen as valuable, vary in perceived value across operators, highlighting the need for tailored solutions.

Site tenure and physical conditions are key factors influencing fleet operators' ability to deploy charging and renewable energy infrastructure across depots, creating potential opportunities for third-party support in addressing these challenges.

Fleet operators emphasised the strong influence that site tenure and physical conditions have in shaping their ability to invest in charging and renewable energy infrastructure. For example, short lease terms emerged as a key barrier, with half of the respondents stating this would significantly impact their willingness to invest. One fleet operator explained that short lease terms make it harder to justify major capital investments, prompting them to explore portable charging solutions and lease extensions for flexibility.

Most fleet operators reported occasional challenges in securing landlord approval for infrastructure upgrades. Though, one respondent noted that this typically results in project delays as opposed to outright refusals. Despite this, most operators expressed moderate to high confidence that their current lease agreements permit the installation of charging infrastructure, suggesting that landlord approval is less of a barrier compared to short lease terms.

Physical site constraints also strongly influence the ability to deploy infrastructure across HGV depots. While all fleet operators reported that some sites have adequate space for charging infrastructure, none believed this was true across their entire estate. One respondent noted that very few depots have large yards, and even those that do are already optimised for space, leaving limited room for installing charging infrastructure. Similar findings were observed concerning the installation of other assets, such as solar panels.

Site power capacity is another critical factor. Most fleet operators anticipate that the majority of their sites will require grid connection upgrades, with one describing the power demand from eHGVs as "enormous compared to even the most automised warehouse operation". Most operators have engaged with their Distribution Network Operator (DNO) to discuss grid connection capacity for eHGV charging, though these interactions are largely at an early stage[3].

Although site tenure and physical constraints can act as blockers to investment in charging and renewable energy infrastructure, they also present opportunities for third-party partners to support fleet operators in addressing these challenges. For instance, specialist organisations could assist in designing and optimising site layouts for eHGV charging, integrating renewable energy and storage assets to minimise grid connection upgrade requirements, and provide alternative portable solutions to mitigate risks linked to short lease terms.

[3] For more information on how fleet operators and DNOs can explore depot connection options together, please refer to our report Connecting HGVs and Electricity: Enabling systems and sites for eHGV charger integration.

Shared charging models are viewed as an attractive solution, though fleet operators have concerns around access, scheduling and operational disruption.

The shared charging facilities model offers a potential solution to deployment barriers such as site tenure and physical constraints by enabling fleet operators to access charging infrastructure at another operator's depot. When asked about the appeal of this approach, most fleets rated it as 'moderately' or 'very' attractive. The primary benefit cited by all fleet operators was the ability to access charging infrastructure at strategic locations. Most fleet operators also valued the opportunity to reduce the upfront investment costs of installing charging facilities at their own depots. However, concerns related to access restrictions, scheduling issues, and service reliability were highlighted by all fleet operators.

Alternatively, fleet operators could assume a charging provider role within this model by investing in charging infrastructure and offering access to third-party fleets where spare capacity is available. This unlocks access to a new revenue stream for fleet operators. This variation was also considered attractive, with all respondents indicating that they would be interested in letting other fleet operators use their depot-based charging infrastructure under such conditions. All but one respondent found the opportunity to generate revenue from their charging infrastructure at least 'moderately' attractive. Key concerns raised for this role included security and access control and potential operational disruptions.

Overall, the shared charging model is viewed as an attractive solution, with fleet operators showing a clear interest in both user and provider roles. However, concerns around access, scheduling, and operational disruption underscore the need for robust management strategies to ensure successful implementation and adoption.

Public eHGV charging

We undertook an online survey with fleet operators to capture their views on business models for public eHGV charging. The survey explored general perspectives on public charging, such as key motivations and requirements, while also testing the appeal of the models outlined in our report, Business Model Options and Considerations for Public eHGV Charging. Please refer to the table for a summary of these models. This subsection presents the key insights from the responses received.

Business model	Description
Pay-as-you-go charging	Fleet operators charge vehicles at open-access stations across a public charging network, with payment based on energy consumed or time spent charging.
Subscription-based membership	Fleet operators subscribe to a dedicated network of exclusive charging sites, benefiting from features such as priority access, bay reservation capabilities, and discounted charging rates.
Co-ownership	Fleet operators co-invest with chargepoint operators (CPOs) in strategically located public charging sites, securing reliable access, operational influence, and shared revenue.
Battery swapping	An innovative model where fleet operators swap depleted eHGV batteries for fully charged ones at swap stations, reducing vehicle downtime.
Overhead catenary lines	An innovative model where fleet operators equip eHGVs with pantographs to connect to overhead wires on frequently used routes, enabling continuous charging while driving.

Financial factors are seen as a significant barrier to public eHGV charging, specifically high charging costs and unpredictable pricing.

When asked about their concerns of using public charging infrastructure, fleet operators cited financial factors most frequently. All fleet operators identified high charging costs as a concern. Interest in reducing these costs was observed when operators were asked whether they would consider a subscription-based agreement offering reduced rates in exchange for committing to a defined amount of charging. All respondents indicated they would be open to explore this option, depending on the terms, flexibility, and potential savings offered.

Most fleet operators also highlighted unpredictable pricing as a concern. The significance of cost predictability was reinforced when participants were asked to rank potential features of public charging solutions by importance (see Figure 2). 'Transparent and predictable pricing' was the only factor unanimously rated as 'very important' or 'essential', indicating that this is not just desirable, but a fundamental requirement for any future public charging solution.

These findings suggest that solutions providing greater cost predictability and pricing transparency are likely to be most attractive to fleet operators, as these features help address their financial concerns related to public charging.

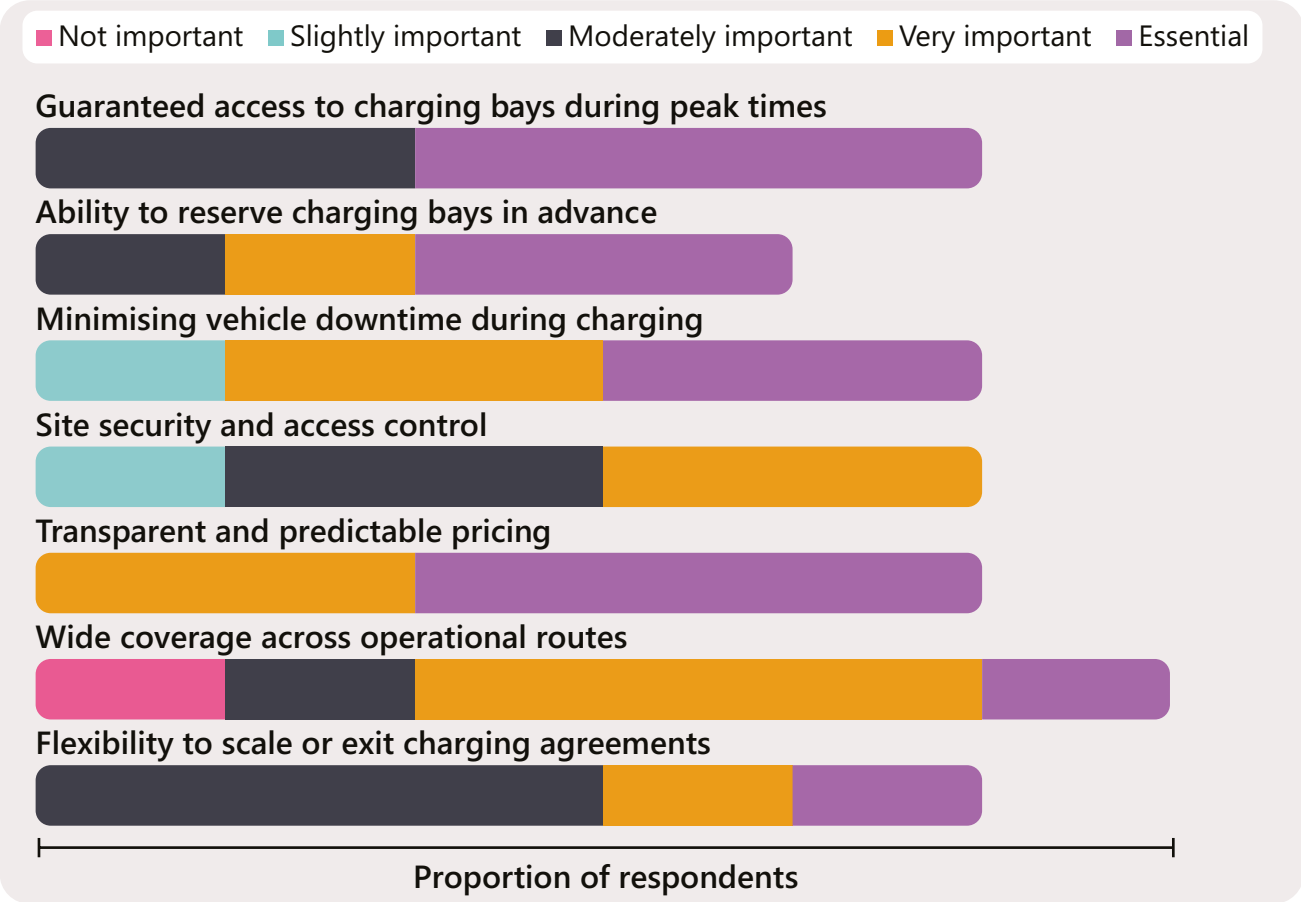


Figure 2: Perceived importance of different features of public eHGV charging

Public charging is widely recognised as an enabler for improving operational flexibility and resilience, but future models must address core operational requirements to deliver on this potential.

When asked about their motivations for using public eHGV charging infrastructure, all fleet operators cited its role in extending operational range beyond depot-based charging. Most also viewed public charging as a way to improve route flexibility and respond to unexpected changes in logistics schedules. Additionally, some respondents highlighted the strategic value of accessing charging infrastructure at major transport hubs, ports, and freight corridors. Together, these factors underpin the importance of public charging in strengthening operational flexibility and resilience.

Alongside these motivations, fleet operators also raised several operational requirements for public charging solutions. As illustrated in Figure 2, they placed particular importance on broad network coverage along operational routes, guaranteed access to charging bays during peak demand periods, and flexibility to scale or exit charging agreements. These requirements reflect the dynamic nature of the UK road freight sector, where routes, schedules, and demand can change at short notice.

These findings indicate that the appeal and likelihood of adoption of public charging models will depend on their ability to deliver broad network coverage while remaining adaptable to variable demands within the freight sector.

Public charging solutions necessitating upfront investment are not entirely dismissed, but interest is highly contingent on the level of investment required, expected returns and demonstrable operational benefits.

When asked about their willingness to co-invest in public charging infrastructure under a co-ownership model, most fleets indicated limited interest. While not all fleet operators ruled out the possibility, those open to exploring co-investment emphasised that their decision would depend on factors such as the level of investment required, expected returns, and associated risk profile.

Similarly, when testing appetite for innovative charging models such as battery swapping and overhead catenary lines, which could deliver operational benefits like increased payload capacity, most respondents acknowledged potential value for certain routes or types of goods. However, they also indicated that any willingness to incur higher costs or vehicle retrofit expenses would be contingent on operational benefits clearly outweighing the additional financial burden.

These findings suggest that while fleet operators are not categorically opposed to public charging models that require capital contributions, their adoption will require strong business cases that demonstrate clear operational advantages and/or strong financial returns.

5. Business model design implications

Drawing on the insights gathered through our engagement, this section explores broader business model design implications for future solutions that support the transition to eHGVs. We outline key features that propositions should look to incorporate to meet fleet operator needs and requirements.

Solutions should prioritise financial transparency by providing clear cost breakdowns and predictable pricing to build trust and reduce perceived risk.

Fleet operators will face significant costs during the electrification journey, including the higher upfront cost of eHGVs compared to diesel vehicles, the cost of installing charging infrastructure, and the potential expenses for associated electrical works. It is therefore unsurprising that financial clarity emerged as a universal requirement across all business model focus areas. Concerns about hidden costs and unclear pricing structures were particularly pronounced when discussing leasing and service-based models, where operators feared these could erode initial capital savings. In the context of public charging, predictable and transparent pricing was rated as 'very important' or 'essential' by all operators, underscoring that cost predictability is a fundamental prerequisite for the adoption of solutions. Business models that eliminate hidden costs by providing transparent cost breakdowns and predictable rates or fees are likely to be more attractive to fleet operators.

Solutions should offer short-term, flexible, and scalable solutions that allow fleet operators to respond to market and/or technological changes without long-term lock-in.

Fleet operators work in dynamic environments shaped by seasonal fluctuations and changing customer demands. At the same time, the transition to eHGVs is taking place within an evolving technological landscape. As a result, operators are cautious about long-term, rigid contractual commitments that could lock them into products and services that may need to change in line with operational requirements or risk becoming outdated.

The need for flexible, shorter-term agreements was evidenced across all three business model focus areas. For example, the long-term contractual commitment associated with the eHGVs-as-a-Service model was the main reason why it was voted as the least appealing purchasing model. For depot-based charging, some fleet operators indicated a preference for service-based contracts of 3–5 years (or less). Similarly, in the context of public eHGV charging solutions, fleet operators placed strong emphasis on flexibility to scale or exit charging agreements. Business models that incorporate flexibility, through short-term, adaptable, and scalable solutions, will therefore be better positioned to satisfy the needs and requirements of the road freight sector.

Solutions should allow fleet operators to retain control over key operational decisions while offering transparent accountability structures and reliable performance guarantees.

Our findings indicate that fleet operators value control of assets, especially those that are essential to core delivery functions. They place strong emphasis on retaining the ability to manage and use vehicles and infrastructure on their own terms. At the same time, they recognise the benefits that third-party service providers can offer, such as access to specialist expertise and a smoother, simpler transition to eHGVs. However, fleet operators also have concerns about accountability and performance reliability, particularly where multiple services are bundled into a singular commercial arrangement. To drive adoption, service-based solutions should offer clear accountability, robust performance guarantees, and rapid issue-resolution mechanisms, while ensuring operators retain control over key operational decisions.

Solutions must cater to the specific needs of SMEs to prevent unintended exclusion and support a sector-wide transition.

SME inclusion in the transition to eHGVs is essential given their significant role in the freight sector. Our findings indicate that SMEs face distinct challenges compared to larger organisations, such as tighter capital constraints and limited administrative capacity. For instance, several participants cautioned that concessional finance could unintentionally disadvantage SMEs if eligibility criteria were too restrictive or reporting requirements too onerous. Similarly, while some participants felt that the eHGVs-as-a-Service model could enable SME access to electrification, its associated long-term contracts were viewed as a major barrier, reinforcing the need for more accessible options. Solutions should therefore be designed to reflect SME needs and capacities to avoid unintended exclusion and support a sector-wide transitions to eHGVs.

Charging solutions should look to integrate renewable energy technologies and energy optimisation capabilities to unlock cost savings and enhance operational resilience for fleet operators.

Fleet operators view renewable energy as integral to their electrification strategies, recognising its potential to lower energy costs, improve resilience and support broader sustainability objectives. Beyond showing strong interest in investing in renewable generation and storage technologies, most operators also indicated a willingness to engage third-party providers to optimise on-site energy use, valuing capabilities such as smart charging and peak demand management. Together, these insights highlight a clear opportunity for future charging solutions to embed renewable generation, storage, and optimisation services as core offerings.

6. Recommendations to accelerate the deployment of eHGVs and supporting infrastructure

As fleet operators transition to eHGVs, they face distinct decisions at each stage of the electrification journey. Throughout this section, we summarise these stages, highlight key operator needs based on the insights shared earlier in this report, and provide targeted recommendations for stakeholders best positioned to address them. These recommendations are intended to realise the previously identified business model design implications. Together, they provide a practical set of actions for accelerating the deployment of eHGVs and supporting infrastructure. By acting on these, stakeholders can enable a more efficient, cost-effective transition and help the sector deliver on its decarbonisation goals.

	Fleet operator needs	Stakeholder recommendations	Impact
 **eHGV procurement** Fleet operators are focused on defining how they will acquire eHGVs, with procurement decisions driven by balancing upfront investment, long-term cost savings, and alignment with operational requirements.	**Straightforward purchasing models for eHGVs that exhibit familiarity with existing practices.**	**Vehicle original equipment manufacturers (OEMs):** Design eHGV purchasing models that retain the simplicity and familiarity of traditional approaches while offering optional value-added services that address performance concerns, such as maintenance packages, battery health monitoring, and analytics. Test and refine these solutions through structured engagement activities like roadshows, pilot programs, and industry forums.	Combining additional support and proactive engagement improves fleet operator confidence in eHGVs.
	Visibility of the financial impact of different eHGV purchasing models.	**Vehicle OEMs:** Provide detailed and transparent cost breakdowns for available eHGV purchasing models. Consider developing comparison tools that allow fleet operators to assess the financial trade-offs between different purchasing structures, with particular emphasis on balancing upfront capital investments against total long-term expenditure. These tools should clearly outline any financial support options available to fleet operators for eHGV procurement.	Improves financial transparency and helps fleet operators make informed, value-driven procurement decisions.
	Access to models that help offset the higher costs of eHGVs compared to diesel HGVs.	**Public funding bodies and OEM captive finance companies:** Collaborate to explore the potential for leveraging public funding to enable the integration of concessional terms (e.g., lower interest rates) and risk mitigation measures (e.g., residual value guarantees) within leasing and financing options offered to fleet operators.	Helps reduce financial barriers to eHGV adoption and mitigates investment risk.

	Fleet operator needs	Stakeholder recommendations	Impact
 **Depot-based charging** Fleet operators are focused on planning, deploying, and managing charging infrastructure that aligns with operational schedules and site conditions. Alongside meeting core charging needs, operators are exploring the potential for on-site renewable energy systems and optimisation services.	**Understand the feasibility of deploying charging (and renewable energy) infrastructure across operational HGV depots.**	**Fleet operators:** Begin assessing depot feasibility for charging and renewable energy installations as early as possible. Collect key data (e.g., site energy consumption, number of operational vehicles, and depot usage frequency) and engage stakeholders on tenancy permissions and existing connection agreements. **CISPs and renewable developers:** Support planning by providing technical advisory services on feasibility, including charger capacity requirements, renewable generation and storage potential, site layout, and necessary electrical works. These studies should account for varying scales of infrastructure deployment and outline the design implications associated with each scenario. **DNOs:** Support feasibility planning by offering indicative guidance on costs and timelines for grid connection upgrades as well as explaining the different types of connection agreements available, along with their associated financial impacts. **Landlords:** Explore the potential to modify tenancy agreements to support the installation of charging and energy assets, particularly for sites with short lease terms. Consider provisions for reinstatement, cost-sharing, compliance with safety standards, and asset ownership transfer.	Enables fleet operators to identify and prioritise sites that are most suitable for early deployment, while highlighting locations where alternative solutions may be required for more complex sites.
	Charging solutions that integrate renewable energy, reduce energy costs, and provide access to new revenue streams.	**CISPs, renewable developers, energy optimisation providers, and aggregators:** Explore strategic partnership opportunities that enable the integration of on-site renewable generation, energy storage solutions, and optimisation services into depot-based charging solutions. **Research organisations, technology providers, DNOs, and aggregators:** Continue to demonstrate the potential scale, value, and viability of energy flexibility from HGV depots and eHGVs themselves (e.g., smart charging and V2G).	Strengthens the financial case for eHGV adoption for fleet operators while also enabling them to demonstrate progress towards broader sustainability objectives.
	Understand what alternative delivery models and solutions exist for constrained sites or where there is limited appetite for investment.	**CISPs:** Continue to design and demonstrate innovative solutions, such as portable or modular charging systems, to address challenges at constrained sites or for operators with short-term leases. **Industry associations and research organisations:** Share case studies and best practices from fleet operators who have adopted alternative ownership models (e.g., Charging-as-a-Service, shared charging facilities) to raise awareness of available options beyond an owner-operator approach.	Enables electrification even in challenging site or investment conditions.

	Fleet operator needs	Stakeholder recommendations	Impact
 **Public eHGV charging** Fleet operators are focused on integrating public eHGV charging into their operational strategy to ensure route flexibility and resilience. Key considerations include pricing transparency, managing seasonal or fluctuating demand and ensuring coverage across key operational routes.	**Transparent and predictable pricing for public eHGV charging facilities.**	**CISPs:** Publish clear and comprehensive tariffs, including per-kWh rates, bay reservation fees (and financial penalties in the case of no-show), and any applicable surcharges, ensuring pricing structures are easy to understand and consistently applied. **Industry associations:** Consider developing and maintaining a centralised portal that aggregates pricing data from multiple providers, giving fleet operators a single source for comparison and improving market transparency.	Enables fleet operators to plan costs effectively and develop informed public charging strategies.
	Flexible subscription plans that accommodate seasonal fluctuations and changing demand, with clear terms for adjustments and termination.	**CISPs:** Design subscription plans that enable fleets to adjust their public charging volumes as operational needs change and evolve. Ensure terms are transparent and include clear provisions for early termination and volume adjustments. **Fleet operators:** Collaborate with CISPs to shape practical commercial arrangements, such as volume commitments, by providing feedback on what is operationally feasible.	Enhances operational flexibility by allowing fleets to adapt charging access to seasonal or fluctuating demand.
	Reliable public charging network coverage at strategic locations.	**CISPs:** Ensure public charging infrastructure is deployed at strategic locations such as ports, motorway service areas, and major freight routes to ensure network reliability. **Fleet operators:** Where feasible, share relevant operational data, such as route profiles and vehicle usage patterns, with CISPs to inform strategic infrastructure planning. **DNOs:** Continue to develop tools such as interactive grid capacity maps that help CISPs assess connection feasibility at prospective strategic sites. **Innovate UK:** Consider mapping planned eHGV charging infrastructure beyond sites in the ZEHID programme to give fleet operators greater visibility and support public charging strategy development.	Ensures infrastructure availability aligns with freight corridors, improving network coverage and supporting operational flexibility and resilience for fleet operators.

	Fleet operator needs	Stakeholder recommendations	Impact
 **Crosscutting** Across all aspects of the electrification journey, fleet operators are focused on securing access to funding to offset significant investment costs, having clear visibility of costs, and gaining confidence in eHGV-related products and services.	**Accessible funding support, especially for SMEs, to offset high upfront costs and ensure fair access in the transition to eHGVs.**	**Department for Transport and Innovate UK:** Consider designing a multi-faceted and phased funding programme for fleet operators to address key electrification cost areas such as eHGV procurement, depot charging infrastructure, and grid connection upgrades. The programme should be co-developed with industry to ensure eligibility criteria and reporting requirements are practical, enabling fair access and strong participation from SMEs. **Industry associations:** Promote funding consultations and encourage submissions from members to ensure sector-wide representation. **Fleet operators:** Actively participate in consultations to help shape funding programmes so they reflect operational realities and sector needs.	Provides accessible funding support to offset high transition costs, particularly for SMEs, supporting a more rapid, sector-wide transition.
	Independent assessment tools that provide clear visibility of total costs for different eHGV-related products and services.	**Research organisations and independent consultancies:** Develop impartial financial assessment tools that allow fleet operators to assess different solutions across eHGV procurement, depot charging, and public charging. These tools should assess options collectively rather than in isolation, providing a clear view of the total transition costs and the financial impact of different combinations (e.g., determining the optimal balance between investment in depot charging versus reliance on public charging). Tools should also account for infrastructure scaling scenarios (e.g., comparing the financial implications of deploying all assets upfront versus adopting a phased approach).	Improves decision-making, builds investment confidence, and reduces uncertainty around long-term costs.
	Confidence that eHGV-related products and services will meet expectations and minimise operational disruption.	**Product and service providers across the value chain:** Establish baseline service level agreements (SLAs), performance standards, and warranties informed by best practices, while acknowledging early-stage uncertainty. Look to establish structured feedback mechanisms with early adopters to capture real world performance data. Commit to using these insights to regularly update SLAs, standards, and warranty terms as technology and solutions mature and deployment scales.	Enhances fleet operator confidence in eHGV solutions and reduces perceived risk.

7. Summary

This report explores the transition to eHGVs from a business modelling perspective. We engaged fleet operators to test business models outlined in our previous research, gathering insights through an interactive workshop and online surveys. Our aim was to identify design requirements that make future propositions more compelling, increase the likelihood of their adoption, and ultimately accelerate the uptake of eHGVs and supporting infrastructure.

Several overarching requirements emerged, reflecting features that future propositions should incorporate to satisfy fleet operator needs. Solutions should look to prioritise financial transparency through detailed cost breakdowns and predictable pricing, offer short-term and scalable agreements to avoid long-term lock-in, and ensure clear accountability while enabling fleet operators to maintain control over key operational decisions. Fleet operators also expressed strong interest in renewable energy integration and energy optimisation, creating opportunities for solutions that reduce energy costs, enhance energy resilience, and deliver sustainability benefits alongside charging infrastructure. Inclusivity for SMEs is essential across all solutions to enable a sector-wide transition to eHGVs. Collectively, these priorities should guide future business model design to ensure models are both attractive and practical for fleet operators navigating the electrification journey.

To address these design requirements, we outline targeted recommendations for stakeholders across the eHGV value chain. These include designing straightforward and transparent purchasing models for eHGVs, integrating renewable energy and optimisation services into depot-based charging solutions, ensuring public charging offers predictable pricing and flexible subscription options, and implementing cross-cutting measures such as accessible funding programmes, independent cost assessment tools, and robust SLAs, performance standards, and warranties.

These recommendations demonstrate that achieving a successful, sector-wide transition to eHGVs requires more than just technology. It requires innovative business models, supportive policy frameworks, and strong industry collaboration. Acting on the recommendations outlined in this report can help unlock these conditions and accelerate the deployment of eHGVs and supporting infrastructure.

Abbreviations

CISP	Charging infrastructure service provider
CPO	Chargepoint operator
DNO	Distribution network operator
eHGV	Electric heavy goods vehicle
HGV	Heavy goods vehicle
OEM	Original equipment manufacturer
SLA	Service level agreement
SME	Small and medium-sized enterprise
TCO	Total cost of ownership
V2G	Vehicle-to-grid
ZEHID	Zero Emission HGV and Infrastructure Demonstrator

Licence and disclaimer

Energy Systems Catapult (ESC) Limited Licence for Accelerating the Transition: A business modelling perspective for eHGV scale-up

ESC is making this report available under the following conditions. This is intended to make the Information contained in this report available on a similar basis as under the Open Government Licence, but it is not Crown Copyright: it is owned by ESC. Under such licence, ESC is able to make the Information available under the terms of this licence. You are encouraged to Use and re-Use the Information that is available under this ESC licence freely and flexibly, with only a few conditions.

Using information under this ESC licence
Use by You of the Information indicates your acceptance of the terms and conditions below. ESC grants You a licence to Use the Information subject to the conditions below.

You are free to:

- copy, publish, distribute and transmit the Information
- adapt the Information
- exploit the Information commercially and non-commercially, for example, by combining it with other information, or by including it in your own product or application.

You must, where You do any of the above:

- acknowledge the source of the Information by including the following acknowledgement:
- "Information taken from Accelerating the Transition: A business modelling perspective for eHGV scale-up, by Energy Systems Catapult"
- provide a copy of or a link to this licence
- state that the Information contains copyright information licensed under this ESC Licence.
- acquire and maintain all necessary licences from any third party needed to Use the Information.

These are important conditions of this licence and if You fail to comply with them the rights granted to You under this licence, or any similar licence granted by ESC, will end automatically.

Exemptions

This licence only covers the Information and does not cover:

- personal data in the Information
- trademarks of ESC; and
- any other intellectual property rights, including patents, trademarks, and design rights.

Non-endorsement

This licence does not grant You any right to Use the Information in a way that suggests any official status or that ESC endorses You or your Use of the Information.

Non-warranty and liability

The Information is made available for Use without charge. In downloading the Information, You accept the basis on which ESC makes it available. The Information is licensed 'as is' and ESC excludes all

representations, warranties, obligations and liabilities in relation to the Information to the maximum extent permitted by law.

ESC is not liable for any errors or omissions in the Information and shall not be liable for any loss, injury or damage of any kind caused by its Use. This exclusion of liability includes, but is not limited to, any direct, indirect, special, incidental, consequential, punitive, or exemplary damages in each case such as loss of revenue, data, anticipated profits, and lost business. ESC does not guarantee the continued supply of the Information.

Governing law

This licence and any dispute or claim arising out of or in connection with it (including any noncontractual claims or disputes) shall be governed by and construed in accordance with the laws of England and Wales and the parties irrevocably submit to the non-exclusive jurisdiction of the English courts.

Definitions

In this licence, the terms below have the following meanings: 'Information' means information protected by copyright or by database right (for example, literary and artistic works, content, data and source code) offered for Use under the terms of this licence. 'ESC' means Energy Systems Catapult Limited, a company incorporated and registered in England and Wales with company number 8705784 whose registered office is at Multistory, 7th Floor, The Priory Queensway, Birmingham, B4 6BS. 'Use' means doing any act which is restricted by copyright or database right, whether in the original medium or in any other medium, and includes without limitation distributing, copying, adapting, modifying as may be technically necessary to use it in a different mode or format. 'You' means the natural or legal person, or body of persons corporate or incorporate, acquiring rights under this licence.

Innovate UK

eFREIGHT 2030

Funded by UK Government

CATAPULT Energy Systems

Energy Systems Catapult is an independent research and technology organisation. Our mission is to accelerate Net Zero energy innovation.

Launched in 2015 by Innovate UK, the Catapult has built a team of more than 250 people, with a range of technical, engineering, consumer, commercial, incubation, digital, and policy expertise. They draw on sector-leading test facilities, modelling tools, and data collected from our back catalogue of more than 500 research projects.

We use that 'whole energy' system capability to support innovative companies -- small and large – to test, trial and scale their new products and services. Our impact comes when those innovators attract new customers, new investment, and new grants so they can thrive in the future energy system.

Based in Birmingham, Energy Systems Catapult is part of a network of nine world-leading technology and innovation centres, established by Innovate UK. The Catapult Network fosters collaboration between industry, government, research organisations, academia, and many others to transform great ideas into valuable products and services.

Energy Systems Catapult
7th Floor
Multistory
The Priory Queensway
Birmingham B4 6BS

es.catapult.org.uk