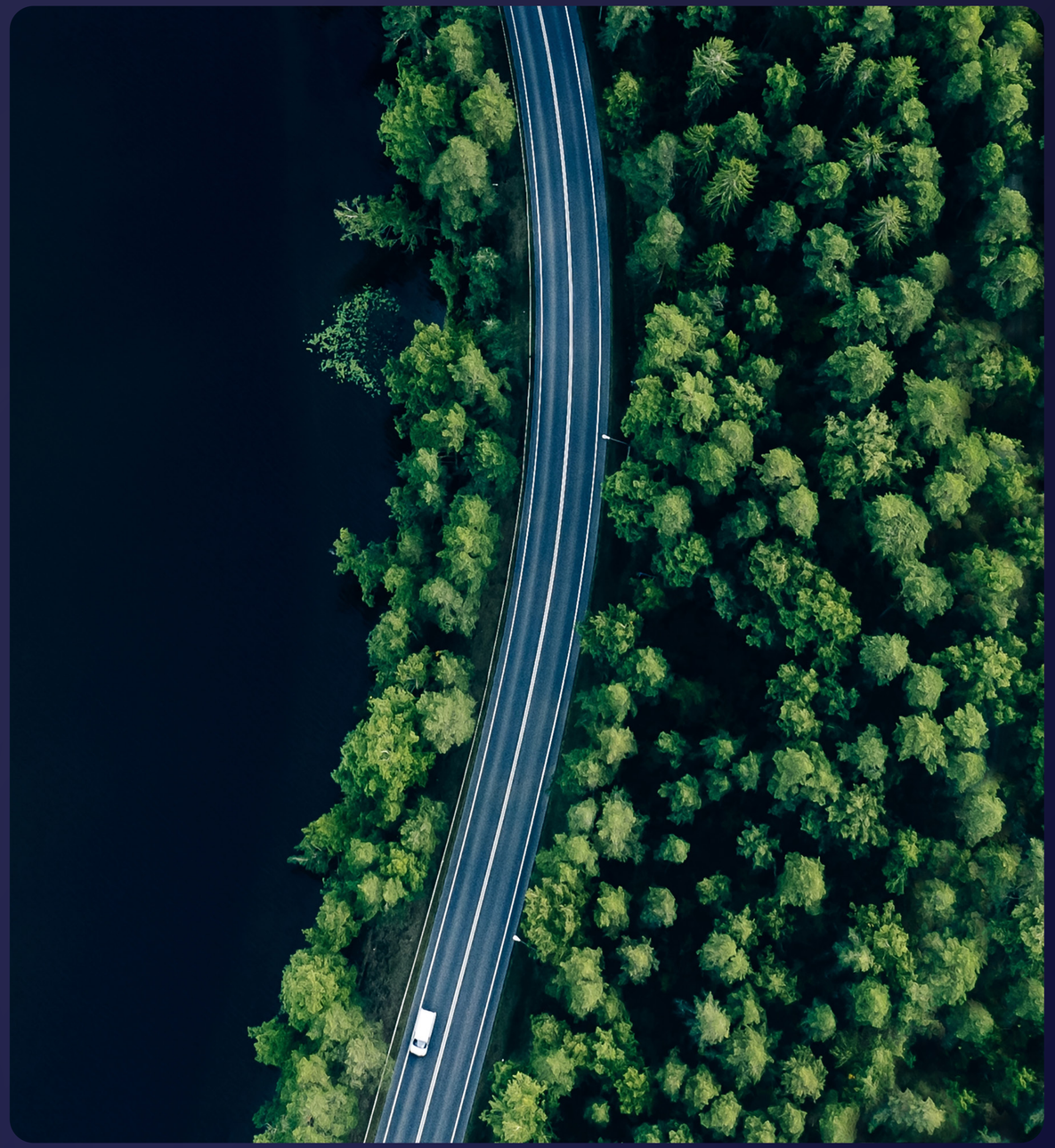
driivz

2025 State of EV Charging Network Operators

Challenges, Insights, and Projections



April 2025

Table of Contents

Introduction and Key Insights

Introduction

The electric vehicle revolution is well under way. In 2024 alone, more than 17 million new EVs[1] hit the roads globally - an unprecedented 25% increase over the previous year. While this surge marks a significant milestone, it also presents challenges for the charging infrastructure needed to support it. Across key markets like the U.S. and Europe, charger deployment remains behind schedule[2, 3] due to insufficient government investment, regulations, logistical hurdles, and limited grid capacity[4].

In the early years, low utilization rates and high infrastructure costs made profitability elusive for EV charging network operators. But as adoption reaches critical mass, the industry is approaching a turning point. 2025 may be the year when EV charging networks shift from a cost-heavy investment into a profitable, scalable business[5].

Yet, even as opportunities expand, new challenges emerge: managing grid constraints, scaling up to meet the exponential growth in EV adoption, choosing the right revenue models, and navigating an increasingly complex operational landscape, to name a few.

We conducted this survey to understand which challenges matter most to network operators, how prepared they are to scale with growing demand for EV charging, and how they plan to deliver a seamless charging experience for drivers. The resulting report provides EV charging network operators with a view into how the industry is evolving around these issues. From independent EV charging providers to utilities, automotive OEMs, and fuel retailers, this report offers insights for every industry player looking to build and sustain a successful EV charging network in 2025 and beyond.

Methodology

To gain insights into the evolving landscape of EV charging networks, we conducted a survey of 300 full-time employees working in the EV charging industry. Participants included senior decision-makers from Charge Point Operators (CPOs) and Electric Vehicle Service Providers (EVSPs). Survey respondents were drawn from key markets in North America and Europe.

All participating CPOs operated public networks, while EVSPs managed both public networks and a subscriber base of EV drivers. Titles spanned IT, operations, product, business development, research, eMobility, and executive leadership (Manager level and above). The survey was conducted in collaboration with Global Surveyz, an independent research firm, in Q1, 2025.

Key Findings

1

Energy constraints are the biggest challenge for EV charging network operators in 2025.

Energy constraints at charging sites are the most pressing challenge, cited by 46% of respondents. **More than 90% expect grid capacity to hinder their growth over the next 12 months.** Without sufficient energy supply, scaling operations becomes difficult, potentially stalling network expansion.

In key markets like the Netherlands[6] and the U.S.[7], grid congestion and long wait times for infrastructure upgrades already present major obstacles. As EV adoption accelerates, securing adequate energy supply will be critical to sustaining growth.

2

More than 80% of network operators believe their networks are only minimally or moderately scalable.

Scalability is a growing concern, **with 80% of operators indicating their networks have only limited capacity to scale** and nearly one-third (32%) citing scaling up as a key challenge for 2025.

Further analysis reveals that scalability issues extend to EV charging platforms, with 45-61% of respondents rating various platform capabilities as only minimally or moderately scalable.

Without robust scalability across all operational factors - charger volume, transaction processing, roaming partnerships, and drivers - operators risk outgrowing their own systems, forcing them to migrate to more capable platforms.

3

Optimizing operations is the top investment priority for a better EV charging experience for drivers in 2025.

When asked where they plan to invest in 2025 to enhance the EV charging experience for drivers, **33% of operators selected optimizing operations as their top priority.** This is followed by pricing model differentiation (29%) and expanding public charging sites (29%).

Increasing the number of fast chargers at existing sites is also a focus. Notably, direct investments in driver experience - such as customer support (12%), site safety (13%), and driver app quality (18%) - rank lower. However, improving network stability and operational efficiency will indirectly enhance the overall charging experience by ensuring availability and reliability.

4

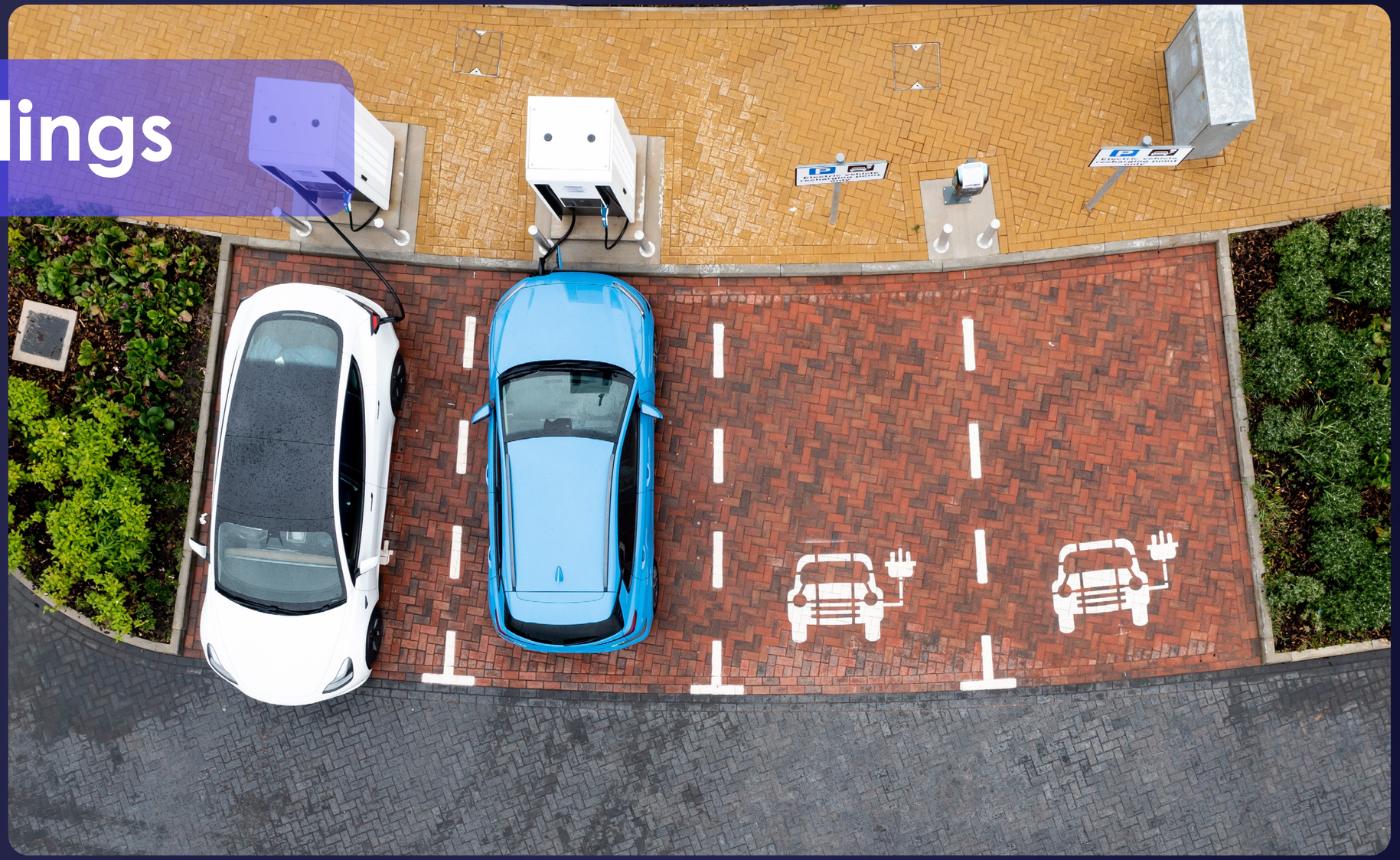
Compatibility issues remain a major obstacle to successful EV charging sessions.

Despite standards and regulations that govern the EV charging industry, compatibility issues continue to disrupt charging sessions.

Vehicle-specific compatibility problems were cited as the top reason for failed sessions (45%), while nearly 40% of respondents pointed to charger-specific OCPP compliance issues. Ensuring adherence to standards like OCPP and ISO 15118 is essential for interoperability, reducing downtime, and enabling advanced capabilities such as Plug & Charge and V2G.

When chargers fail to comply, operators face additional costs for fixes and maintenance, and drivers experience frustration that could drive them to alternative services.

Survey Findings



Challenges Faced by EV Charging Network Operators in 2025

Energy constraints at charging sites are the top challenge facing EV charging network operators, cited by 46% of respondents. With EV adoption accelerating and overall energy demand rising, utilities in key markets are struggling to keep pace. Securing new or upgraded grid connections - a prerequisite for expanding or launching charging sites - can take months or even years[8], creating a significant barrier to growth.

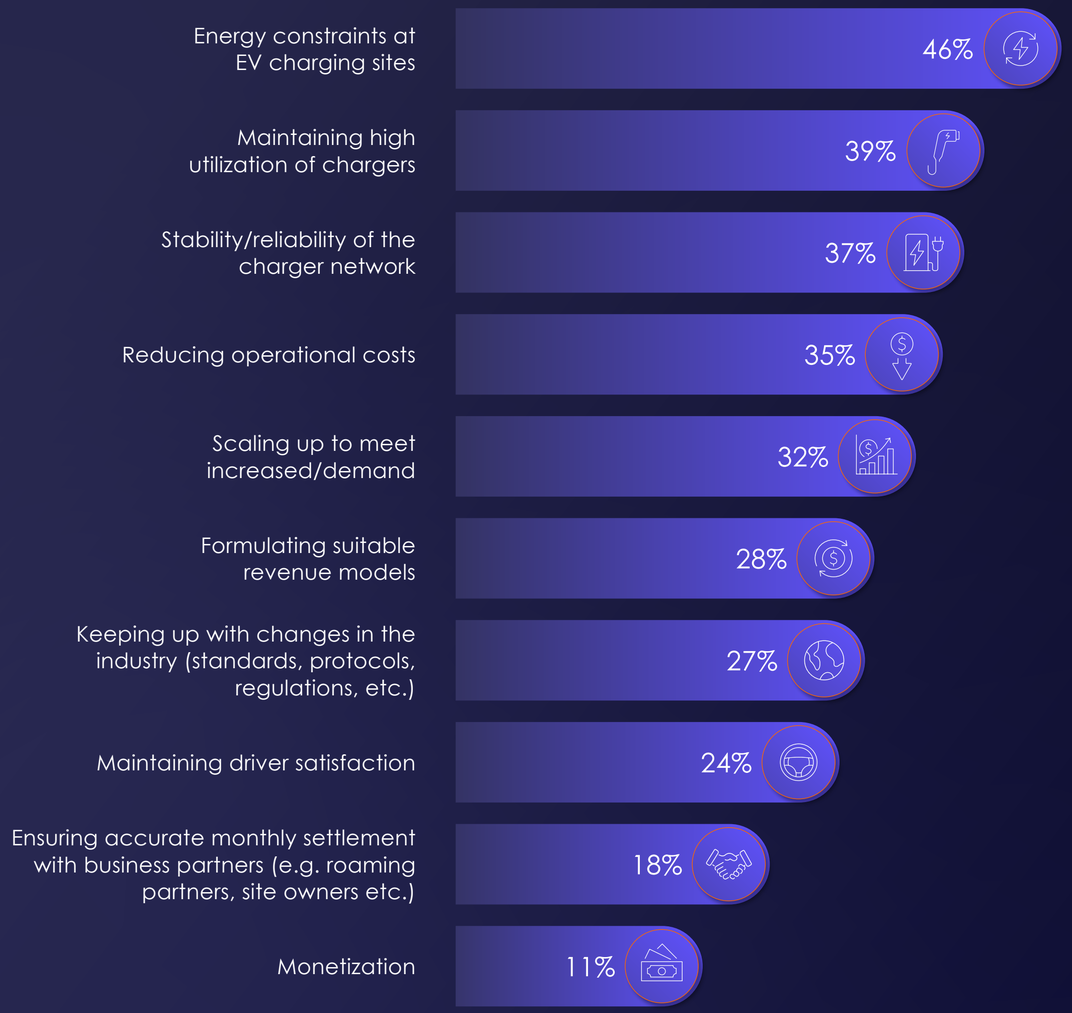
> **Tip: With smart energy management, EV charging network operators can support up to six times more EVs without upgrading their electrical infrastructure, compared to unmanaged charging. Learn more »**

Beyond energy constraints, operators face the ongoing challenge of maintaining high utilization of chargers (39%), a critical factor for profitability. Utilization is directly tied to the stability and reliability of the network (37%), which remains another major concern. Frequent downtime leads to lost revenue and higher maintenance costs, making network reliability essential for both customer satisfaction and financial viability. Reducing operational costs (35%) is closely linked to this - by ensuring a stable and well-maintained charging network, operators can minimize expensive repairs and optimize efficiency.

> **Tip: Up to 80% of charger issues can be fixed remotely and automatically. Learn more »**

*Question asked respondents to select the top 3 challenges; percentages will add up to more than 100%

Figure 1: Challenges Faced by EV Charging Network Operators in 2025

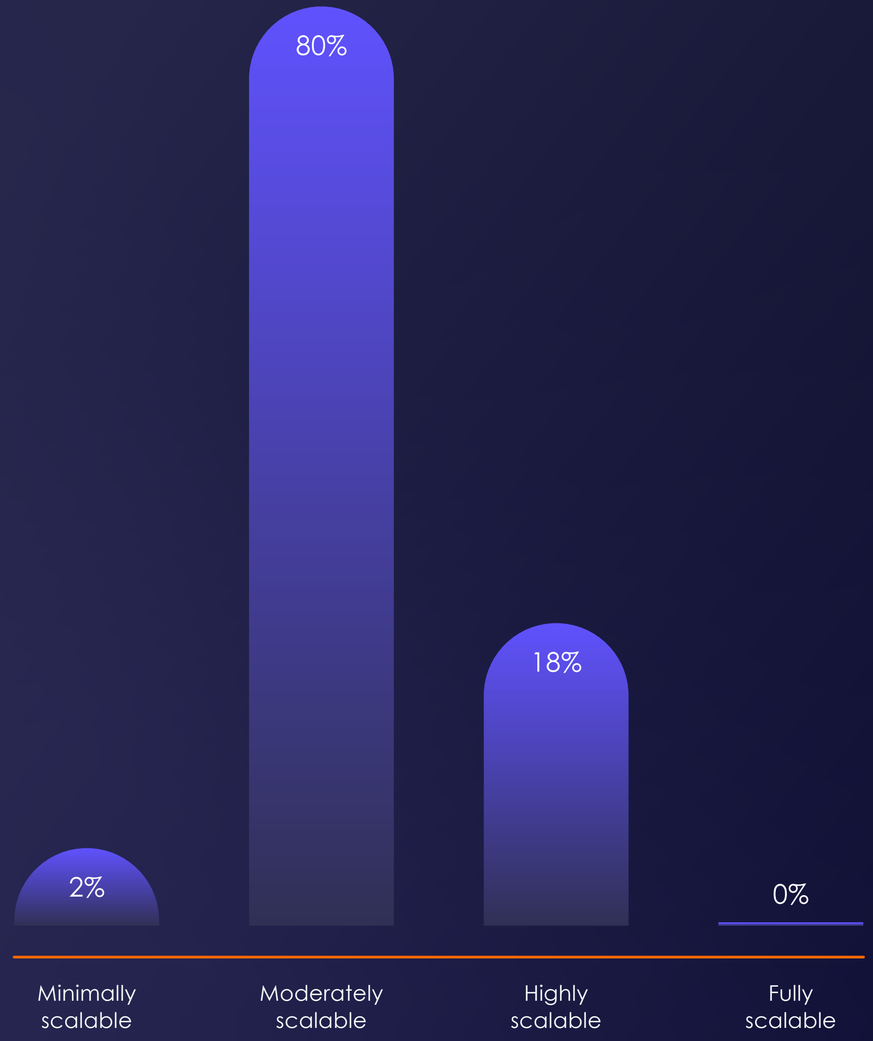


Scalability of the EV Charging Network

Scalability is essential for the business growth and long-term success of EV charging networks, yet most operators face significant limitations. **While 80% of respondents consider their networks moderately scalable, only 18% rate them as highly scalable.**

This lack of scalability means that even as operators expand, they will eventually hit a point where their infrastructure, operational systems, or some other aspect of their business can no longer keep up with demand. Whether due to software limitations or challenges with site management, this “scalability wall” could become a critical bottleneck. Without proactive planning and advanced technology that supports scale, network operators risk slowing their own growth just as EV adoption continues to rise.

Figure 2: Scalability of the EV Charging Network

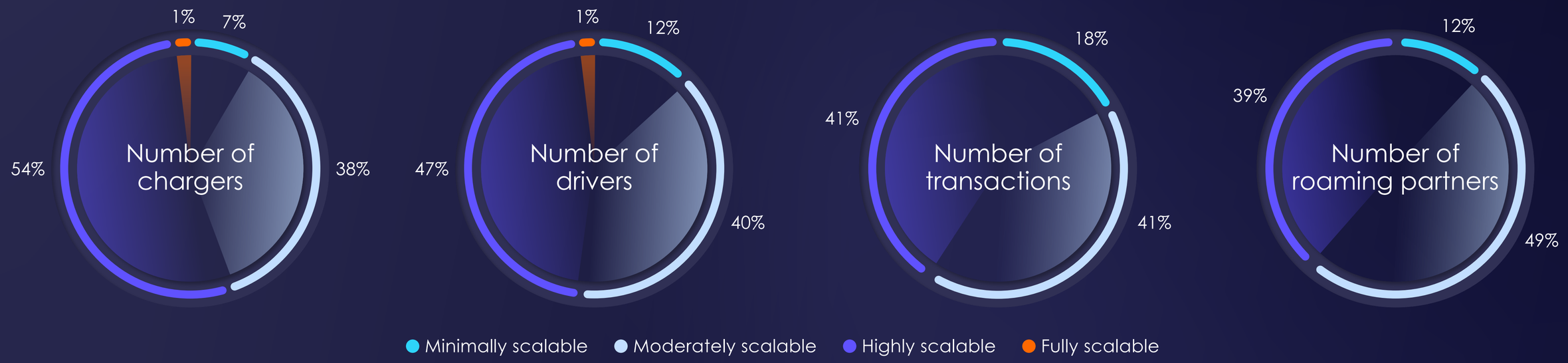


Scalability of EV Charging Management Platforms to Support Exponential Growth

For EV charging networks to scale successfully, their management platforms must be able to handle growth across multiple dimensions - but many fall short. **Nearly half of respondents (45%) consider their platforms only minimally or moderately scalable for managing chargers.** That concern grows when it comes to other aspects of operations: 52% say the same about scaling to support more drivers, 59% for handling increased transaction volumes, and 61% for managing roaming partnerships.

These gaps signal a looming challenge for network operators. A platform that scales well in one area but not others, will eventually become a bottleneck, limiting the operator's ability to expand. In reality, successfully growing the business requires a high degree of scalability across all operational aspects - not just charger count, but also user management, transaction processing, and roaming integrations. Without this, operators will inevitably face the need to migrate to a more scalable platform, disrupting operations at a time when demand for EV charging is growing exponentially.

Figure 3: Scalability of EV Charging Management Platforms to Support Exponential Growth



Issues Preventing Successful EV Charging Sessions for Drivers

Failed charging sessions remain a significant challenge for EV charging network operators. **The most common issue, cited by 45% of respondents, is vehicle-specific compatibility problems.** While this can stem from a simple mismatch in the socket type a driver was expecting, it may also indicate incomplete compliance with industry-specific protocols.

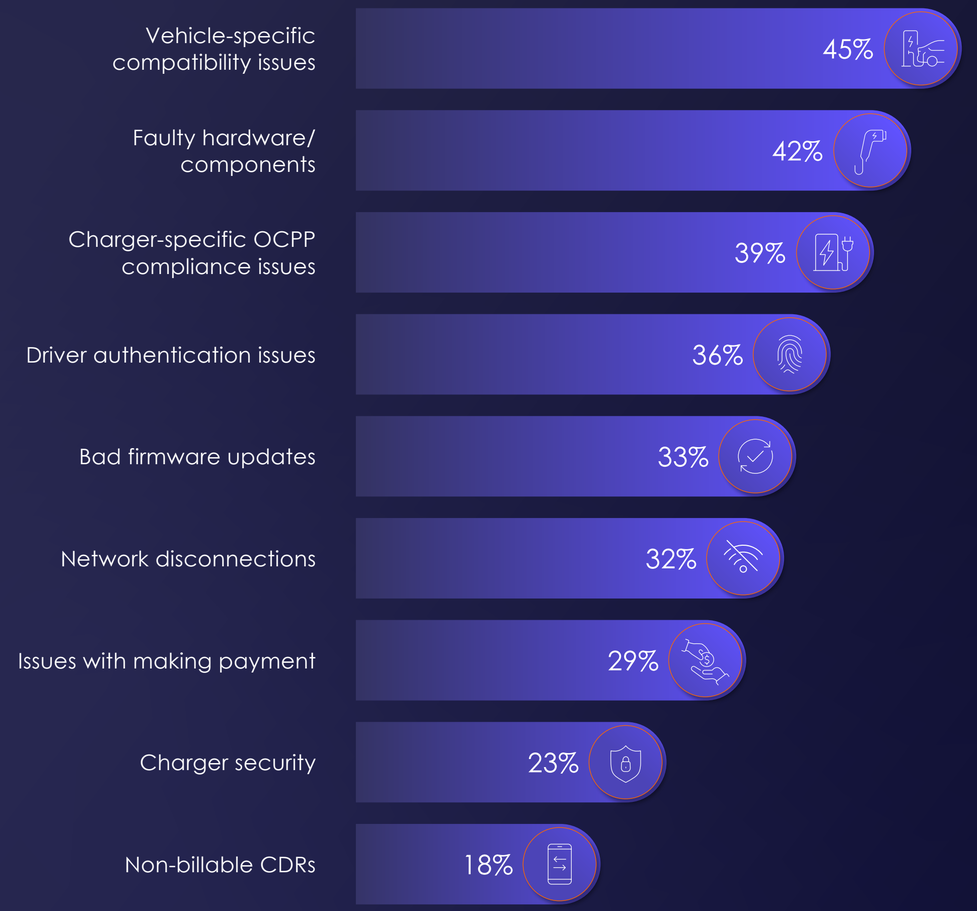
Faulty hardware and component failures (42%) rank as the second-largest cause of unsuccessful sessions. While some issues can be resolved remotely through firmware updates or resetting a charger, others may require costly on-site maintenance - directly impacting operators' efforts to control operational expenses.

OCPP compliance issues (39%) further highlight the need for rigorous charger testing before deployment, as non-compliant chargers can lead to inconsistent performance across networks.

> **Tip: A CPMS should support as many OCPP-compliant charger models as possible. Some charger compliance issues may be overcome with customizations to the back-end platform.**

*Question asked respondents to select the top 3 issues; percentages will add up to more than 100%

Figure 4: Issues Preventing Successful EV Charging Sessions for Drivers



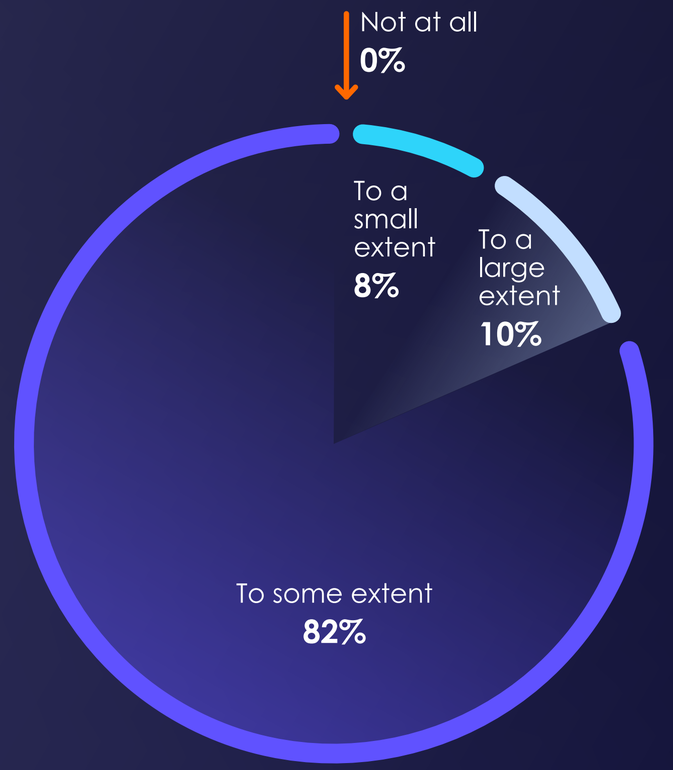
Grid Capacity as a Barrier to Network Expansion in the Next 12 Months

Grid capacity is a universal concern for EV charging network operators, with 100% of respondents indicating it will impact their expansion efforts over the next year. **While most (82%) expect grid constraints to be a barrier "to some extent," 10% anticipate a significant impact.**

This finding reinforces the industry's top challenge - energy constraints at EV charging sites (Figure 1). As EV adoption accelerates, utilities in both North America[7] and Europe[8] are struggling to expand grid capacity fast enough to meet demand. Without sufficient power availability, operators face delays in deploying new charging sites or expanding existing infrastructure.

The widespread concern over grid limitations highlights the urgent need for collaborative solutions between network operators, technology providers, policymakers, and utilities. Without proactive planning and investment in grid upgrades, EV charging expansion efforts could stall, limiting the industry's ability to support growing EV adoption.

Figure 5: Impact of Grid Capacity on Network Growth Over the Next 12 Months



Deployment of Local Battery Storage

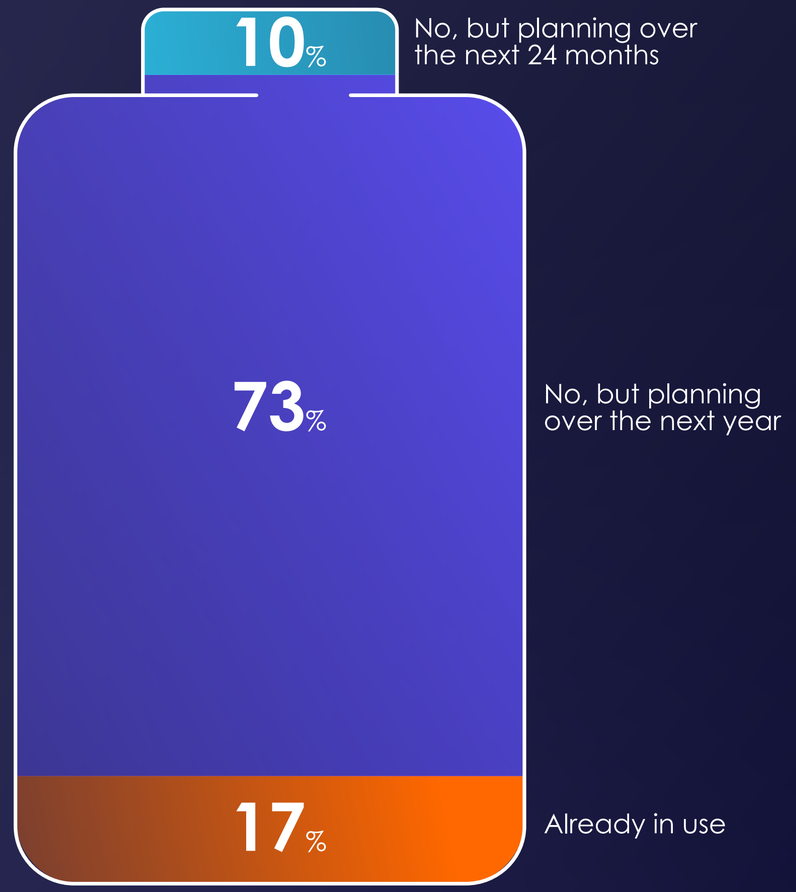
With grid capacity posing a major challenge to network expansion, EV charging operators are turning to local battery storage as a solution. According to the survey, **17% of respondents already have local battery storage in place, while the rest plan to implement it - most (73%) within the next 12 months.**

This widespread adoption underscores the growing recognition of battery storage as a critical tool for supplementing grid power. By storing excess energy and deploying it when demand spikes, operators can mitigate grid constraints, enhance charging site reliability, and reduce dependence on costly peak-hour electricity.

> **Tip: Smart energy management optimizes the use of all available energy sources, including renewables and local battery storage, to efficiently power EV charging networks.**

Learn more »

Figure 6: Deployment of Local Battery Storage



EV Charging Revenue Models: Current Usage and Update Frequency

Revenue models in the EV charging industry are relatively stable, with most operators using a limited set of models and making infrequent updates. **The majority of respondents (84%) report using between 4 and 10 revenue models,** with an average of 8. Adjustments to these models are infrequent. Over half (53%) of respondents update or add new revenue models just once a year, while 41% do so every few months.

This pattern may reflect limitations in the flexibility of respondents' current EV charging management platforms. As the industry evolves and new business opportunities emerge, operators will need scalable platforms that provide the flexibility for agile adaptation to revenue models to remain competitive.

> **Tip: An EV charging platform with a flexible billing engine allows network operators to create a wide range of competitive tariffs, plans, products, and promotions tailored to attract diverse driver segments.**

Learn more »

Figure 7: EV Charging Revenue Models in Use

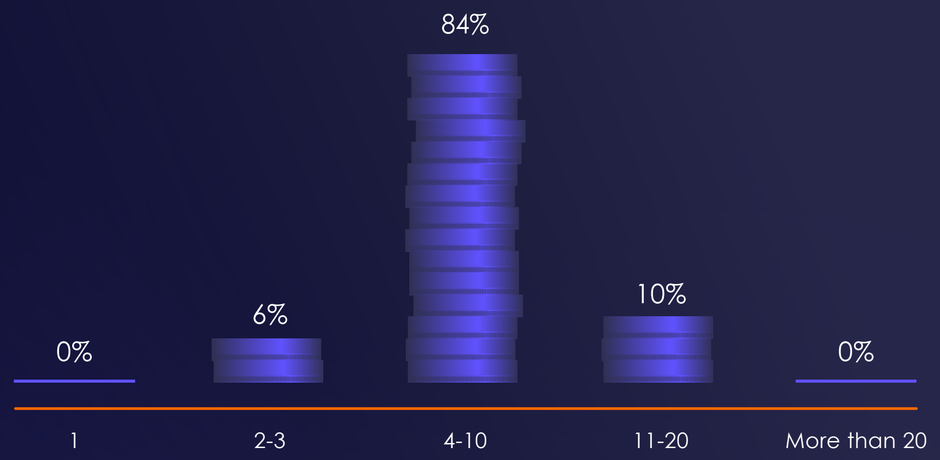
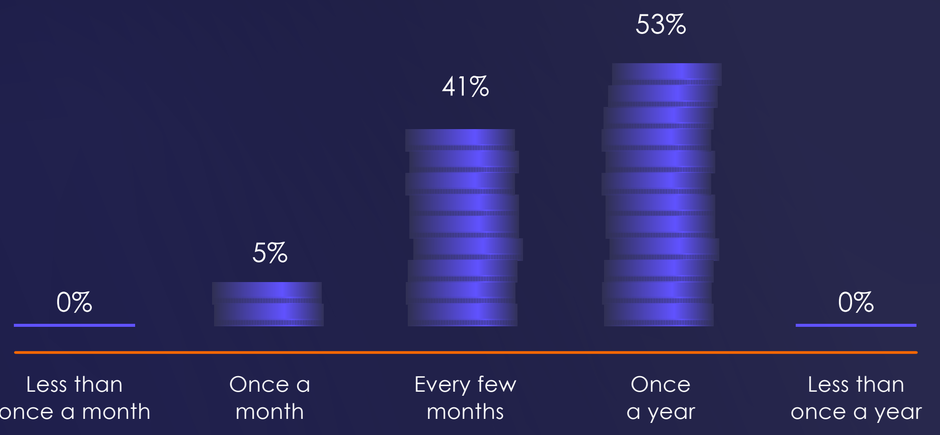


Figure 8: Frequency of Updates and Additions to Revenue Models



Factors Contributing to Greater Business Flexibility

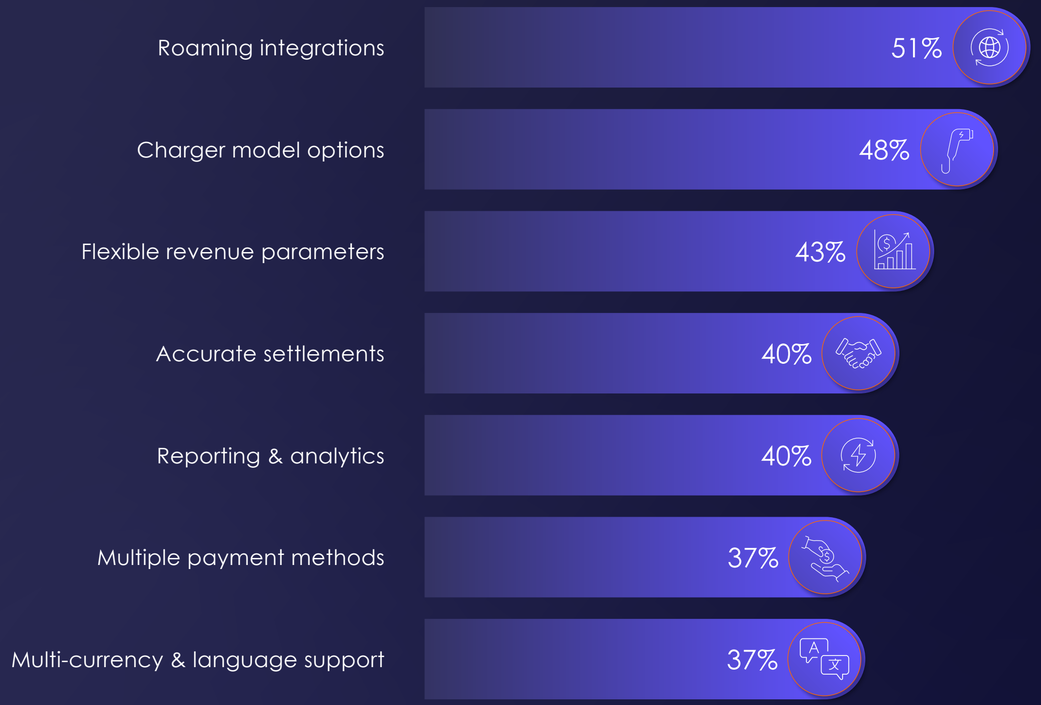
Business flexibility in EV charging networks depends on a range of factors, **with roaming integrations emerging as the most significant, cited by 51% of respondents.** By enabling interoperability between networks, roaming agreements create additional revenue streams - allowing an operator's subscribers to charge on partner networks and vice versa.

Closely following is the ability to select from a wide variety of charger models (48%), which provides operators with flexibility when scaling their networks. However, this flexibility requires their EV charging platform to support the diversity of chargers selected, reinforcing the need for a robust and flexible platform.

Flexible revenue parameters (43%) ranks as the third most important factor, yet as seen in Figure 8, most operators do not frequently modify their revenue models.

*Question asked respondents to select the top 3 factors; percentages will add up to more than 100%

Figure 9: Factors Contributing to Greater Business Flexibility



Key Investment Areas for a Better EV Charging Experience in 2025

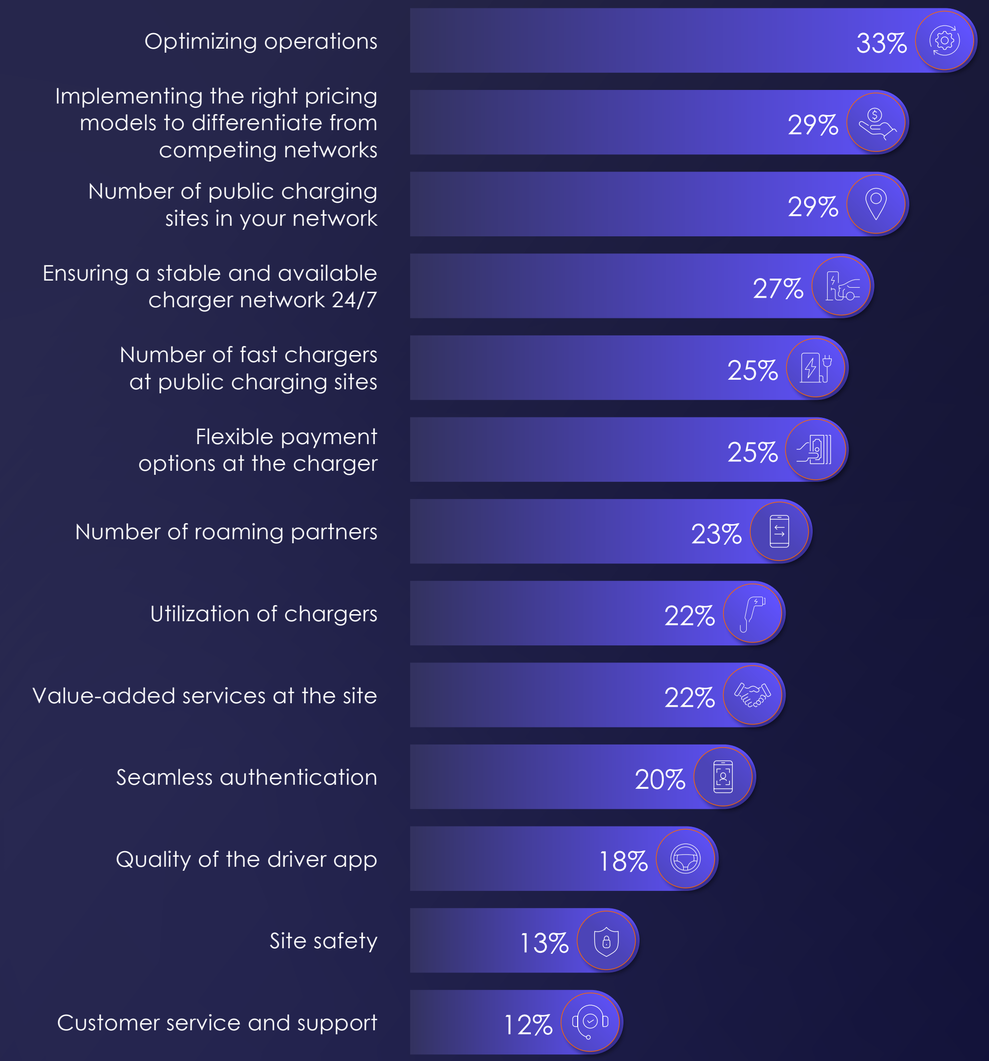
When asked to identify their top three investment priorities for ensuring a good EV charging experience in 2025, **the most common priority was optimizing operations (33%)**, helping operators maintain reliable service.

Differentiating their service through pricing models was the second most common priority (29%), as operators seek to remain competitive in an evolving market. Maintaining network stability and availability 24/7 (27%), while scaling up both the number of sites (29%) and fast chargers (25%), were also a key focus. Ensuring that drivers can consistently find an available, functioning charger is central to long-term success.

Direct investments in driver experience ranked lower, with the quality of the driver app (18%), site safety (13%), and customer support (12%) among the least selected priorities. However, by improving operations, stability, and availability, operators are indirectly enhancing the overall EV charging experience.

*Question asked respondents to select the top 3 areas for investment; percentages will add up to more than 100%

Figure 10: Key Investment Areas for a Better EV Charging Experience in 2025



Conclusion

As the EV charging industry moves beyond its early stages, it is now poised for significant growth. While some network operators may begin to see profits in 2025, they still face major challenges - the foremost being grid capacity. The electrical grid is already stretched to its limits, creating a bottleneck that hinders the scalability and growth of charging networks.

Smart energy management offers a promising solution. By optimizing how energy is used on-site - including from local battery storage and renewable sources - operators can expand within the constraints of existing grid capacity, avoiding costly infrastructure upgrades. It's no surprise that nearly all operators either already use or plan to implement local storage in the next year.

Looking ahead, operators are focused on launching new sites and expanding existing ones. However, without addressing scalability, early success could quickly turn into failure if their platforms are unable to support the growing complexities of their networks. Their Charge Point Management System must be able to support growth across key dimensions - roaming partnerships, charger compatibility, revenue models, and more.

At the same time, operators recognize that operational efficiency is central to their success. Optimizing operations will ensure networks run smoothly, maintaining stability and availability while enabling seamless charging experiences for drivers. A well-managed network leads to higher driver satisfaction and long-term business growth.

As the industry scales up in 2025 and beyond, operators must prioritize scalability, flexibility, and operational excellence. These factors will be critical to sustaining growth, meeting increasing demand, and securing their place in the evolving EV charging landscape.

Demographics

Region, Industry, Number of EV Charging Subscribers and Connectors

Figure 11: Region

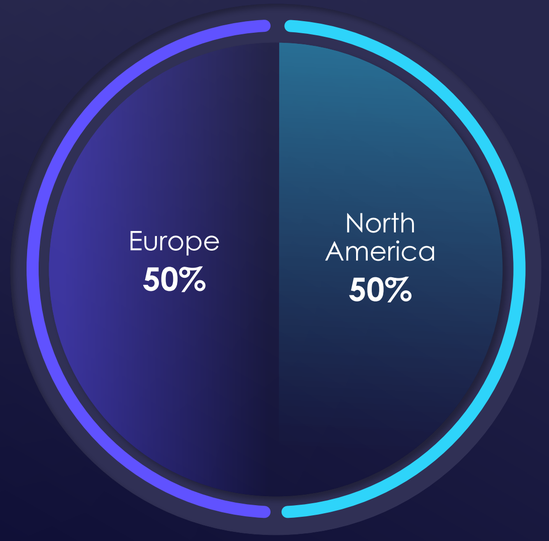


Figure 12: Industry

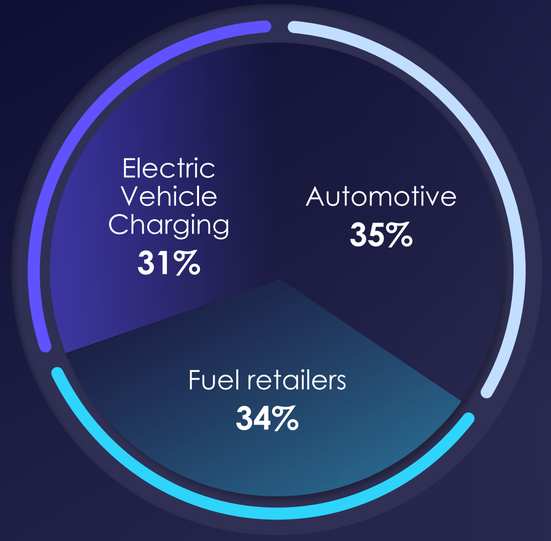


Figure 13: Number of EV Charging Subscribers

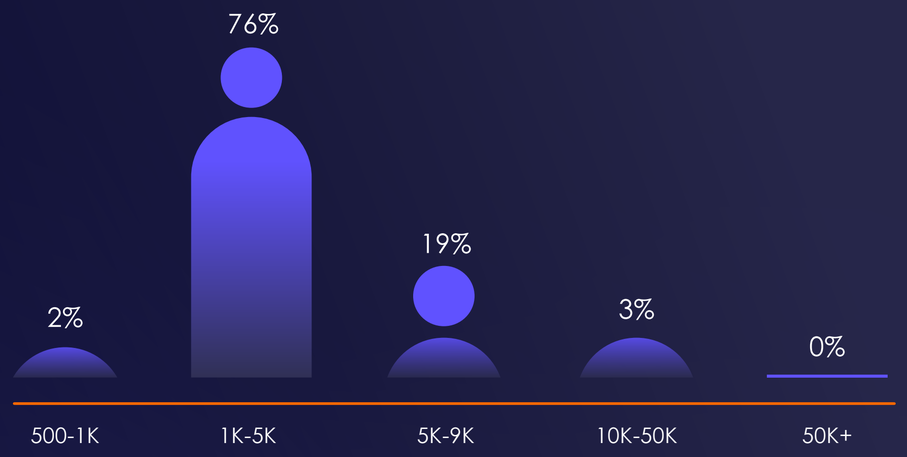
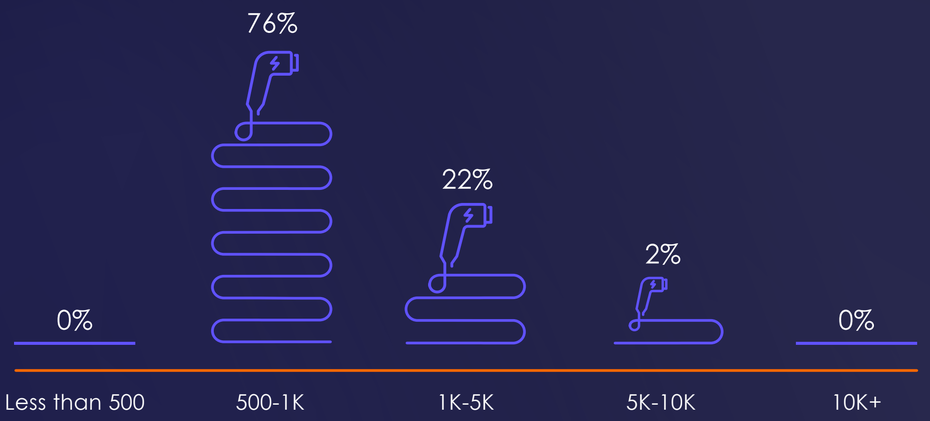


Figure 14: EV Charging Connectors in Operation



Department, Job Seniority, Main Line of Business

Figure 17: Main Line of Business

Figure 16: Job Seniority

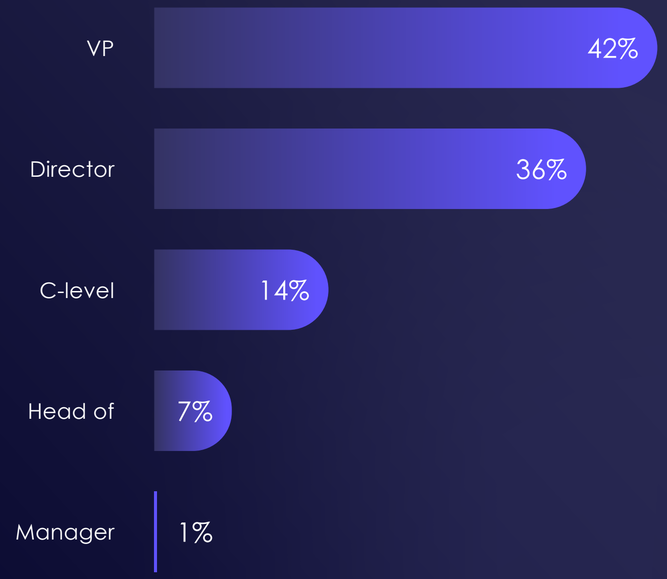
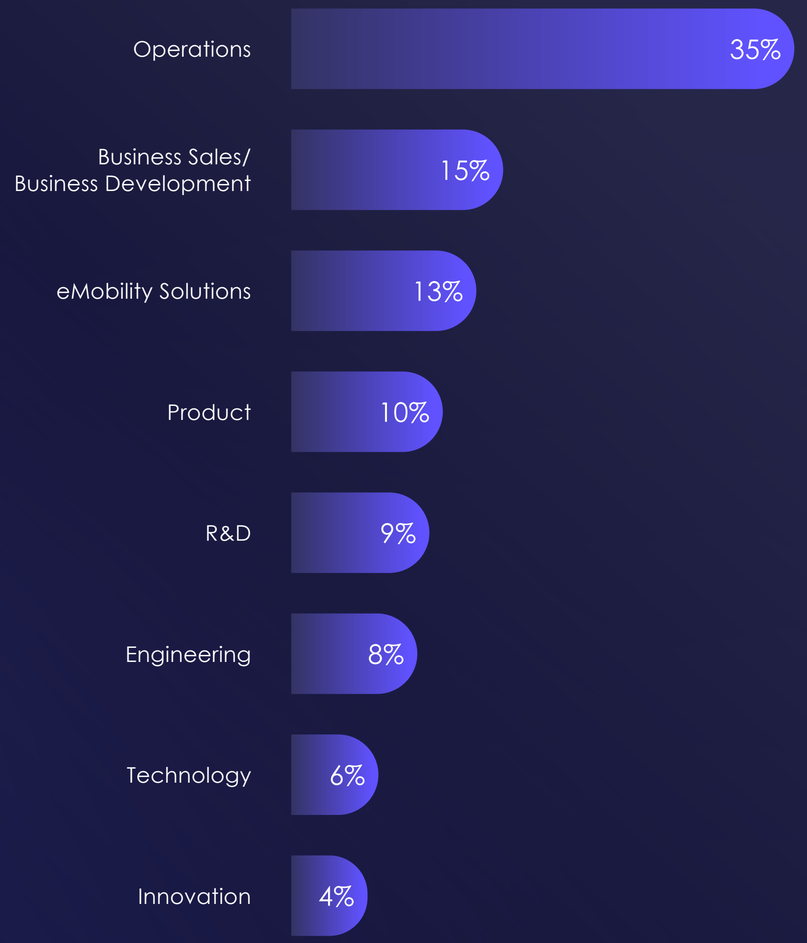


Figure 15: Department



References

1. Rho Motion
2. ACEA
3. A&M
4. Utility Dive
5. Driivz
6. Regulatory Assistance Project
7. Reuters
8. McKinsey
9. E&E News

About Driivz

Driivz empowers major service providers with a market-leading, end-to-end EV charging and smart energy management software platform that provides a scalable, intelligent and integrated solution for EV charging operations, smart energy management, powerful billing capabilities, reporting and analytics, and more.

Driivz's open platform serves as the operating system for some of the largest EV charging networks. It removes the business and technical obstacles presented by proprietary solutions and provides a fully integrated single solution that offers business flexibility through support for customization and API-based development.

We enable our clients to effectively manage their networks, deliver advanced solutions to multiple players in the ecosystem, and provide drivers with an exceptional EV charging experience.

Our customers include global industry players such as EVgo, Shell, Volvo Group, Recharge, Circle K, ESB, Francis Energy, Kople, ST1, CEZ, Mer, MOL Group, eMobility Power, and more.

Talk to us »

For more information, please visit us: