Whitepaper

Payment Services in eMobility

A collaborative work by

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Content

1. Introduction

While issues specific to the industry, such as range anxiety, technological uncertainty, and the networking of charging infrastructure, have been in the spotlight until recently, players in the field of electromobility are increasingly confronted with problems in payment processing and the necessary upstream and downstream processes involved.

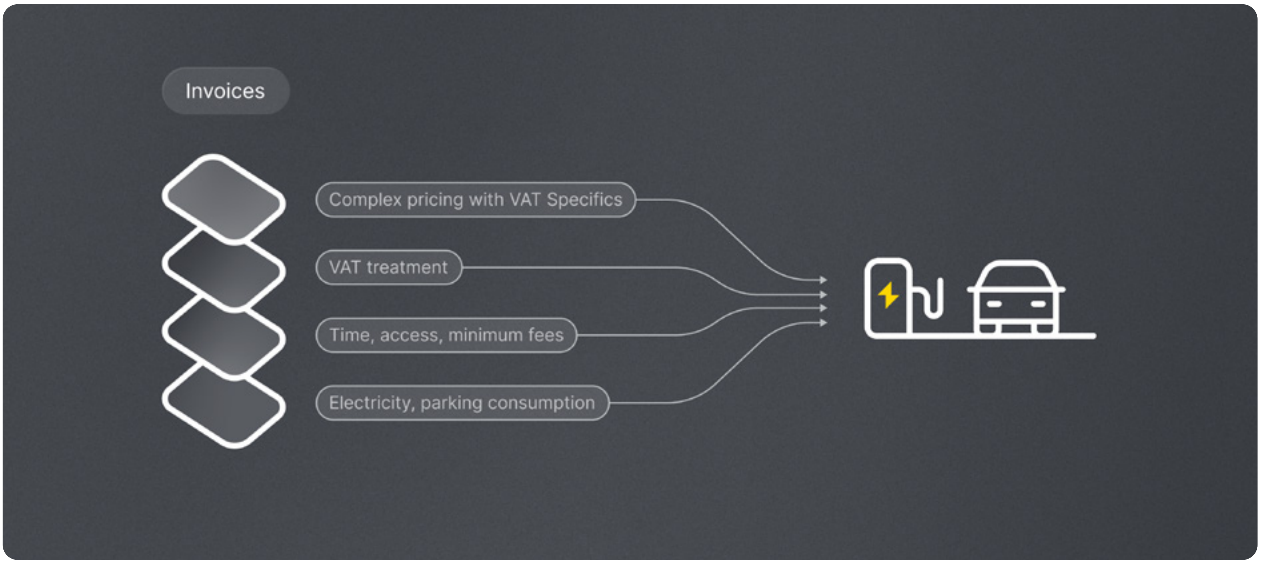
What has long become routine in other industries often proves challenging in electromobility, where initial focus lay on other processes in this emerging, dynamic market. Added complications arise from long supply chains, data flow interruptions, and specific VAT requirements in the energy market, making price calculation, invoicing, payment, and dunning quickly turn into a nightmare.

Due to the high fragmentation of the European market, mobility service providers (MSPs) must establish numerous technical connections to offer end customers the greatest possible range. At the same time, the slow standardization progress in electromobility means that charging infrastructure operators (CPOs) must handle various protocols and protocol versions, which also transmit billing-relevant data in the form of Charge Detail Records (CDRs). The consolidation of these CDRs into a monthly invoice often results in significant qualitative shortcomings. In the best-case scenario, this leads to under- or overpayments by the MSP, but if VAT-related factors are inaccurately applied, one of the involved parties might even incur a tax liability.

But that's not all. Those who receive customer funds on behalf of third parties and later disburse them to their clients — such as those who operate charging infrastructure for other companies — often come close to requiring a license from a European financial supervisory authority.

2. Complex Price Calculation with VAT Specifics

In the early days of electromobility, the charging speed alone determined the price, but both MSPs and their end customers now face significantly more complex tariff models. Some CPOs already adjust prices based on various times of the day and charge not only for the electricity but also for the parking space occupied by the customer during charging. This trend will likely continue, as location attractiveness could become a crucial factor influencing the price in a mature market.



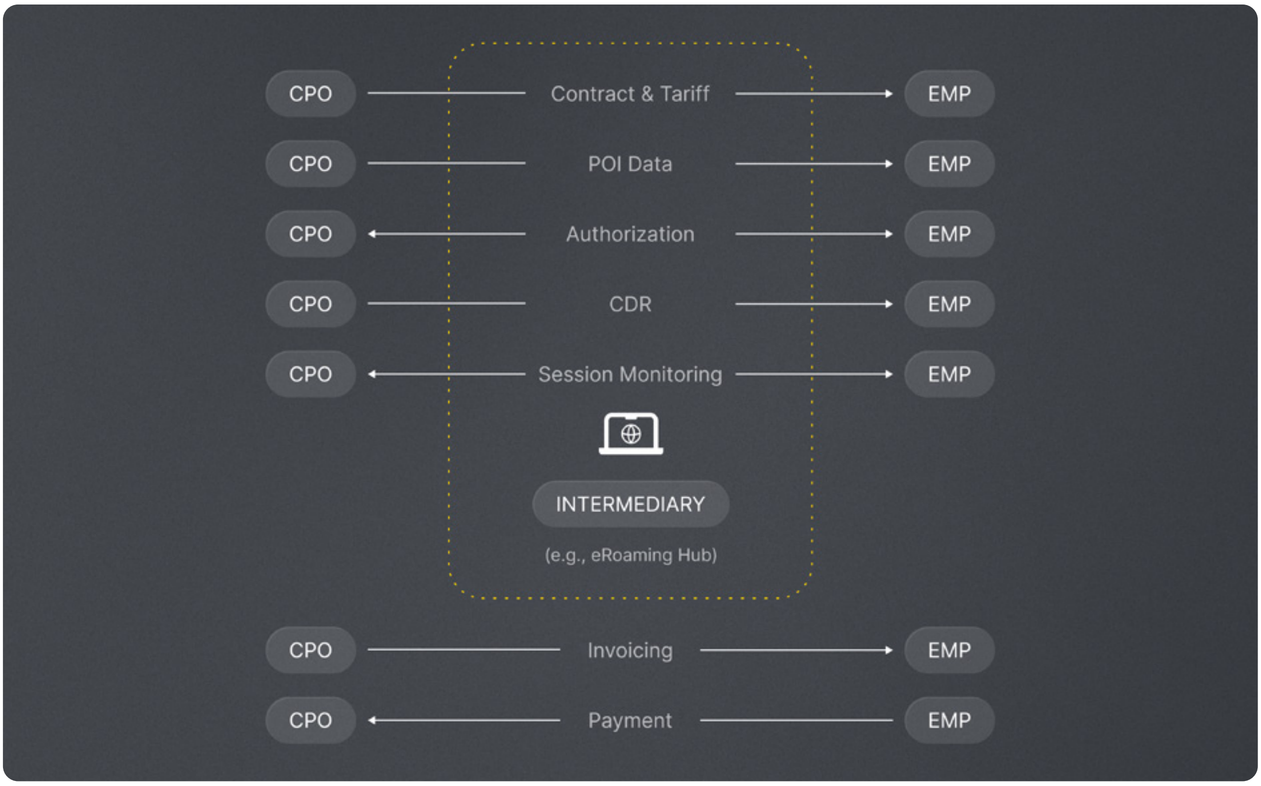
Regarding VAT treatment, the young electromobility market often raises questions that are not as straightforward as they initially appear. Several factors contribute to the complexity. For one, many CPOs and MSPs do not restrict their activities to individual European countries. VAT reverse charges apply when the invoicer and recipient are in different countries and/or the recipient has a reseller certificate, a specific requirement in the energy sector. Determining the applicable VAT rate on a charging transaction can also be complex, given that such transactions today may consist of various components (e.g., electricity consumption, charging time, access fees, minimum fees, or parking fees), each subject to different VAT rates across Europe. The otherwise general rule that ancillary services follow the main service's VAT rate is unfortunately not yet fully clarified for all European countries.

Spotlight

Taxation for different components of a charging session is handled differently in various countries.

3. Systemic Breaks

One particularly frustrating issue for MSPs is the lack of a single source of truth. A single point of truth rarely exists in electromobility. In many cases, while the charging station or its operator initiates the transaction, the related data flows through multiple systems before reaching the MSP — such as the Charge Point Management System of the operator or an eRoaming hub that assigns transaction numbers (Session IDs). This means that MSPs have several data sources to reconcile later. This task becomes especially difficult when a systemic break occurs after the charging transaction — such as when the CPO invoices the MSP without reconciling the transaction data with third-party systems involved in service provision. MSPs must then reconcile vast amounts of third-party transaction data with their own, a daunting task considering that most MSPs will likely need to harmonize millions of such records monthly to validate received invoices.



4. Lack of Specialized Solutions

CPOs wishing to outsource invoicing to third parties, especially regulated parties, find that while there are numerous Payment Service Providers (PSPs) and Accounting-as-a-Service Providers (ASPs), few offer solutions tailored to the unique characteristics of the electromobility industry. PSPs and ASPs are generally industry-agnostic and provide generic services, requiring specific rules and requirements to be adapted into non-specific solutions. Moreover, the prevailing systems in electromobility were not initially built for billing purposes — functions such as price calculation, invoicing, or transparent transaction management played a minor role in the early stages of electromobility, where the primary focus was on connecting numerous different providers to give end customers access to a large charging network. Commercial considerations were largely ignored, partly because profitability was not a concern. The same applies to the technical protocols for data transmission, with several de facto standards now dominating the market, only partially meeting the requirements of a rapidly developing market. The lack of a single official data communication standard in electromobility likely increases the complexity of billing. Given the numerous business relationships each player has with others, it's clear why ensuring consistently high quality and transparency in billing across the market is challenging.

Spotlight

New, dynamic market like eMobility need specialized solutions.

5. Interim Conclusion

Technical aspects and the early market phase already create high complexity in invoicing and transaction reconciliation. The resulting problems are predictable: MSPs face a substantial accounting workload due to invoice quality issues, while CPOs experience delayed cash flows as MSPs take longer to validate their invoices. Now it is necessary to overcome these obstacles, just as range anxiety and technological uncertainty have been addressed. Legally compliant invoices, clean payment flows, and maximum transparency regarding the transactions invoiced by the CPO to the MSP must become the standard in a mature market, especially since these add no value to either party. These processes are means to an end but are not part of the core service of a CPO or MSP.

However, one crucial issue must not be overlooked — where money flows, the state, in the form of regulatory authorities, looks closely. Not everything that seems permissible at first glance holds up upon closer scrutiny.

6. Payment Services in the Electromobility Market

Various intermediaries in the electromobility market facilitate market access, reduce transaction costs, and promote transparency and stability. These significant benefits, however, come with the risk of regulatory requirements for certain intermediary activities. Payment service regulation may apply when intermediaries are involved in payment processing. A key aspect here is money remittance (and possibly acquiring business). The money remittance is based on European directives, particularly the Payment Services Directive (PSD2, and soon PSD3), and is regulated in all EU and EEA member states. Companies engaged in money remittance require authorization from the relevant supervisory authorities.

Spotlight

> Payment intermediaries run the risk of requiring authorization from the relevant supervisory authorities.

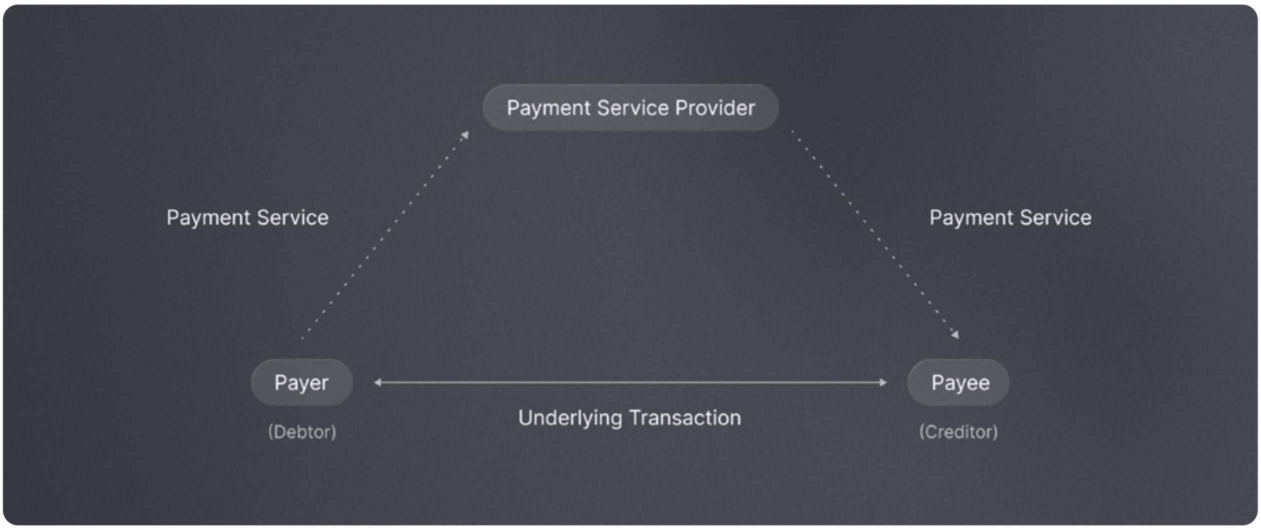
a) Money Remittance

At its core, money remittance involves receiving and/or forwarding funds as a service for another party. Originally, this regulation aimed to cover the activities of traditional money transfer companies offering cross-border fund transfers without a bank account. The intention was to secure market stability and protect customers. Gradually, regulatory authorities and courts have expanded the scope to include areas such as e-commerce, where marketplaces forward funds on behalf of market participants. A groundbreaking change for the German market was the recent inclusion of full-service leasing and fleet management, which has led all major automotive leasing companies to apply for payment service licenses. Today, especially innovative business models that include as-a-service models, service bundling, payment flow short-cutting, and one-stop-shop solutions must always consider potential payment service regulations.

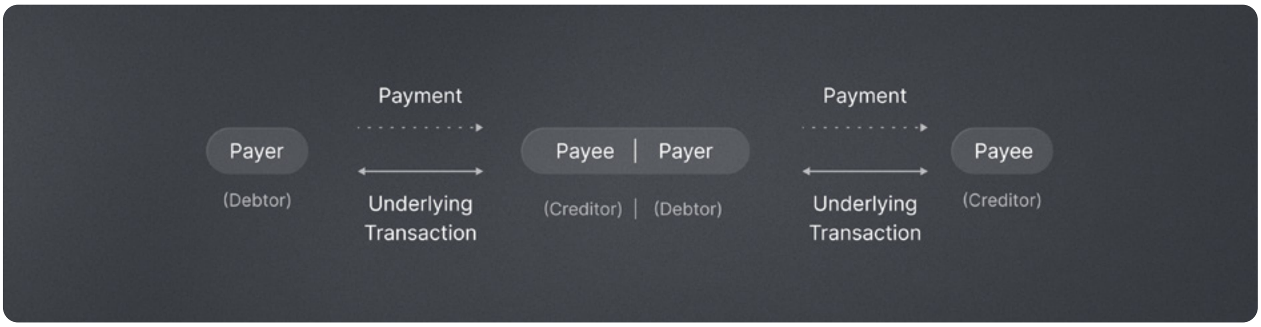
Spotlight

> As-a-service business models often include aspect of money remittance which is regulated under European law.

However, determining whether a money remittance license is required remains challenging. The concept applies only if a payment service is provided as a third-party service. The regulated money remittance involves transferring funds from a debtor to a creditor without being part of the underlying transaction between debtor and creditor, thereby acting as an intermediary to facilitate payment. This typically involves the service provider's bank accounts. To summarize, a „payment triangle" is required:



In contrast, there is no payment service in form of money remittance in a chain transaction:



In a chain or linked transaction, each party is fully involved in the underlying transaction, providing no third-party payment service. A traditional supply chain, in which each link delivers with all rights and obligations to the next, does not constitute a payment service. Regulatory authorities cause challenges by distinguishing these transactions by not only assessing legal contracts but also conducting an economic analysis. Economic substance can reveal a payment service even in cases where parties are formally involved in the underlying transaction. The precise qualification is crucial, as providing unauthorized payment services carries high liability risks.

b) Typical Scenarios in Outsourcing Charging Services

Electromobility presents several unique factors that distinguish it from the fossil fuel market and may inadvertently encourage money remittance. Various intermediaries with different roles, low market entry barriers, extensive intercharge networks, and high levels of innovation enable seamless user experiences but also lead to intermediaries potentially forwarding funds for third parties. Additionally, intermediaries often operate within conflicting regulatory frameworks. From a regulatory perspective, it might be advantageous to act as an electricity seller to establish a real (non-licensable) chain transaction, though this might create tax obligations as an electricity supplier.

Typical cases arise when intermediaries process and forward funds for other intermediaries (e.g., a CPO collecting funds for other (sub-)CPOs or a MSP collecting funds for other (sub-) MSPs). In these scenarios, the intermediary may perform both exempt and licensable payment services simultaneously. For example, a CPO billing an MSP for its own services while also billing on behalf of others provides both services.

c) Limited Range Exclusion

Even if payment services are generally regulated, it is conceivable that intermediaries in the electromobility market can rely on exclusions, allowing transactions without a license. A prominent example is the „Limited Range Exclusion" for payment instruments used for a very limited range of goods or services, as seen with fuel cards for vehicle-related expenses. The Limited Range Exclusion could similarly apply to eMobility charging services.

However, not every transaction involving an app, charging card, or RFID-equipped device automatically qualifies for this exclusion. Questions may arise as to whether such devices constitute payment instruments as they often facilitate invoicing rather than direct payment. Additionally, the Limited Range Exclusion primarily benefits the issuer of the payment instrument. Only when the issuer is also responsible for payment processing does the exclusion apply.

Spotlight

The limited range exclusion only applies in very specific cases.

Moreover, if the total value of transactions exceeds 1 million euros in the past twelve months, regulated authorities must be notified. This includes providing information about the business model, geographic scope, expected annual transactions, transaction volumes, and associated risks. Authorities then determine whether the Limited Range Exclusion applies, allowing intermediaries to provide payment services without a license. Failure to notify can result in fines, as seen in Germany.

d) Conclusion

When structuring business models in the electromobility market, intermediaries must regularly consider payment service regulations. The market's high innovation and customer-centric product development may unintentionally create regulatory risks. In the worst case scenario, business models may need rapid adjustment to meet regulatory requirements, which is not always feasible. These risks can be mitigated by incorporating payment service regulation as a design factor from the start. This can result in a specifically license-free product design, use of available exlusions, a conscious decision to enter regulation, or the use of regulated third-party providers. If the as-a-service models prevalent in electromobility are to be maintained — promoting market standardization — specialized payment providers are necessary to offer compliant payment processing for non-regulated market players.

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