

Fostering Share&Charge through proper regulation

Competition and Regulation in
Network Industries
1–28

© The Author(s) 2018

Article reuse guidelines:

sagepub.com/journals-permissions

DOI: 10.1177/1783591718809576

journals.sagepub.com/home/crn



Fanny Vanrykel, Damien Ernst and Marc Bourgeois

ULiège, Liège, Belgium

Abstract

This article studies the emergence of Share&Charge, a German platform that organizes the sharing of charging stations for electric vehicles (EVs) and the billing for the energy transactions. Share&Charge follows a peer-to-peer fashion, enabling direct transactions between charging station owners and EV drivers. On the demand side, the platform, with its interactive map, makes it possible for EV owners to find a charging station in the most suitable location, for instance, at their place of work or where they live. On the offer side, Share&Charge enables station operators (private individuals or companies) to rent their charging stations and eventually to sell the electricity they produce. Charging tariffs within the charging station network are determined by the charging station operators themselves, but the platform provides indicative tariffs. Launched in September 2017, Share&Charge follows other initiatives, such as the French platforms Wattpop and ChargeMap, and the Swedish Elbnb. Share&Charge's network is already proven to be successful with German citizens.

Share&Charge adds certain elements of value at different stages of EV utilization. First, this model allows for a co-financing of charging infrastructures by individuals and businesses in the private sector by sharing the infrastructure costs among EV drivers. Besides the purchase price of EVs, the implementation of charging infrastructures and their financing represent a significant barrier to the rise of e-mobility. Share&Charge helps remove this obstacle without adding a further burden on the governmental budget. In addition, this approach follows the “user pays principle,” which engages in fair and effective financing. Second, the platform increases decentralized production value and facilitates its expansion. It also helps in avoiding grid congestion and energy loss, as well as increasing flexibility within the electricity market. Third, data use enables the optimization of energy demand and supply, and the optimal determination of tariffs, although these remain facultative. Models like Share&Charge could thus positively impact energy policy by tackling several upcoming obstacles associated with the development of EVs and decentralized energy production capacities. However, new forms of network structures (decentralized networks, sharing economy) and new actors (prosumers, platforms, etc.) also raise regulatory challenges. This article presents some of the legal issues associated with the development of models like

Corresponding author:

Fanny Vanrykel, ULiège, Place des Orateurs 3 (B31), 4000 Liège, Belgium.

E-mail: fanny.vanrykel@uliege.be

Share&Charge. In particular, we study the tax framework applicable to this model, assuming that as such, it would be introduced into the Belgian market.

Keywords

Sustainable mobility, digitalization, e-mobility, electricity market, transport market, regulatory issues

Introduction

Electric vehicle (EV) charging infrastructure is a central aspect of e-mobility deployment. Without a sufficient number of charging stations, consumer appeal for EVs remains low. The German platform Share&Charge offers an innovative solution to this problem by allowing the sharing of EV charging stations and enabling direct transactions between charging station owners and EV drivers in a peer-to-peer fashion.¹ Launched in September 2017, Share&Charge follows other initiatives such as the French platforms Wattpop and ChargeMap and the Swedish Elbnb. Share&Charge's network is proven to be successful with German citizens, with more than 1200 charging stations currently in Germany. Relying on new technological developments, Share&Charge lies at the crossroads of the electricity market, the transport market, and digitalization. Although this model creates new opportunities for sustainable mobility, it also presents specific features, involving new actors (platform and prosumers) and new structures (decentralized networks, microgrid networks, and sharing economy), that disrupt existing frameworks and bring new regulatory challenges.

This article intends to examine some of the legal issues associated with the development of platforms like Share&Charge. In particular, it analyses the concepts of the taxable person, taxable income, supply of goods and services, and of the electricity supplier, as enshrined in Belgian domestic law and in European law. Based on this background, the article reviews the tax framework that would be applicable to the Share&Charge model, assuming that such a scheme would be introduced into the Belgian market. The first part briefly presents the functioning of Share&Charge and its potential benefits for EVs scale-up, as well as for the deployment of decentralized electricity production. The second part is dedicated to the tax treatment of operations involved in the use of the platform. Finally, we conclude with several policy recommendations, in order to propose a number of modifications to the existing legal system in order to foster models like Share&Charge.

Part I—Presentation of Share&Charge: Functioning and benefits

The first part of this article firstly presents the functioning of Share&Charge (see section “Functioning”). It describes the actors (or legal entities) involved in this model and specifies the demand- and offer-side's main elements, based on the terms and conditions of use of the platform.² In a second step, the benefits of Share&Charge on the deployment of EVs and on the development of decentralized electricity are emphasized (see section “Benefits”).

1. More information regarding the platform can be found at: <https://shareandcharge.com> (accessed August 2, 2018).

2. These are available at <https://shareandcharge.com/en/app-terms/> (accessed August 2, 2018).

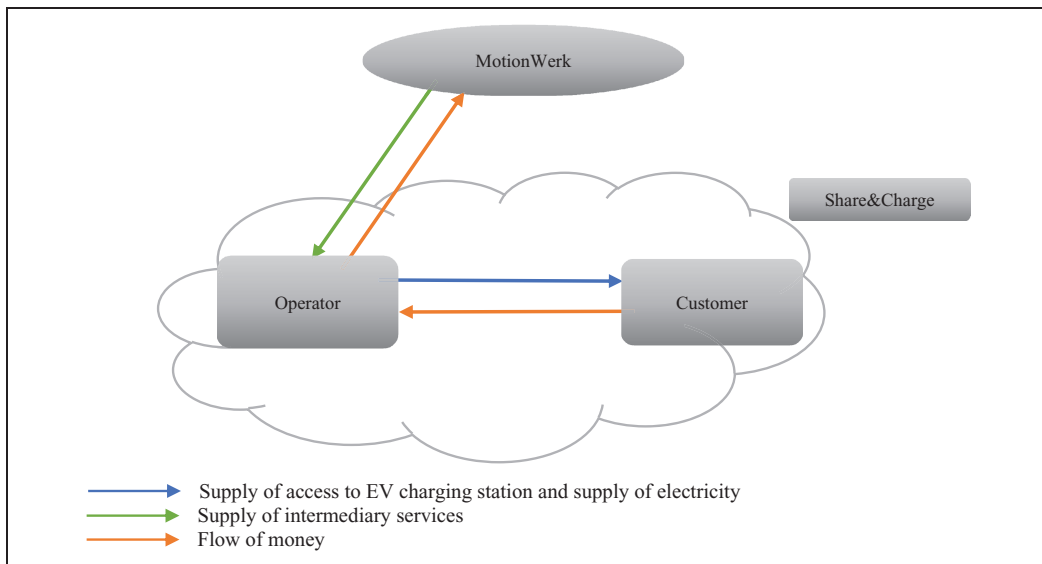


Figure 1. Relations within Share & Charge.

Functioning

According to the terms and conditions of Share&Charge, “Share & Charge is an intermediary platform”; it provides intermediary services to enable direct transactions between charging station owners and EV drivers (Plenter et al., 2018). MotionWerk, the company that operates Share&Charge, “does not offer customers the use of the charging station in their own name, but allows the operators to offer their customers the use of their charging stations in their own name.” In total, three actors (or legal entities) enter into relations: (i) MotionWerk, the corporation that operates Share&Charge, (ii) the operators who provide access to the EV charging station, and (iii) the customers, accessing the charging station and charging their EVs. Share&Charge is not a legal entity per se; it is a digital interface, working as a digital platform in which offer (operator) and demand (customer) virtually meet and eventually enter into a (“smart”) contract

These relations are summarized in Figure 1.

Via the platform, the operator of a charging station may offer access to it for private and commercial customers. Share&Charge’s interactive map makes it possible for EV owners to find a charging station in the most suitable location, for instance, at their place of work or where they live. The operators set a price (tariff) on Share&Charge for their offer. The use of Share&Charge is free of charge for the customer but operators have to pay a usage fee of 15% of the tariff, which includes sales tax (value added tax (VAT)), to MotionWerk after the charging process. Charging tariffs within the charging station network are determined by the operator, but the platform provides indicative tariffs:

- A) Flat rate: tariff at which the customer can charge his electric vehicle irrespective of the load value and charge state, against payment of a flat rate fixed by the operator.
- B) Hourly tariff: tariff at which the customer posts a minute-accurate time quota charged by the operator, while he can charge his electric vehicle.

C) kWh billing: tariff at which the customer can charge his electric vehicle against payment of a kilowatt-hour price determined by the operator.³

These tariffs can be illustrated by the following example. We assume that the customer charges their EV with 40 kWh.

- A. Flat rate: single payment of 4.80 Euros for the usage of the charging station, regardless of the volume of electricity charged, and the hour of the day.
- B. Hourly tariff: 0.04 Euros per minute. Assuming that it takes 120 min to charge the EV, the tariff due is 4.80 Euros.
- C. kWh billing: The price is 0.12 Euros/kWh. The customer charges 40 kWh. The tariff due is $0.12 \text{ Euros/kWh} \times 40 \text{ kWh} = 4.80 \text{ Euros}$.

The terms and conditions of the platform also outline that tariffs “can be offered by the operator both as a public tariff for all users of Share & Charge (‘community tariff’), as well as a closed tariff for users selected by the operator (‘family & friends tariff’).” The payment of the charging operation and the remuneration paid by the operator to MotionWerk are made through an e-Wallet (Share&Charge wallet). The payment due to MotionWerk from the operator is charged with the credit that the operator receives from the customer for the charging process.

Two hypotheses, which will be referred to as scenarios 1 and 2, can actually be made with respect to this model, depending on whether the operator self-produces electricity or not. These are outlined in Figure 2. For the purpose of this article, the operator is assumed to be an individual.

In both scenarios, interactions with the main utility grid can be observed. In scenario 1, the operator, who does not self-produce electricity, needs to buy the amount of electricity necessary to charge the EV on the retail market. Electricity is drawn from the main utility grid and passes to the EV battery. In scenario 2, we deal with an operator who self-produces electricity but who is not disconnected from the electricity grid. Hence, under this scenario, the operator will sell electricity to the customers of Share&Charge as in scenario 1. However, in this case, this electricity will be either self-produced (if the Photovoltaic [PV] production is sufficient to cover the demand), drawn from the distribution network (if there is no PV production at this time), or a mix of both (if there is PV production, but it is not sufficient to cover the demand). In this way, we have two agents: one that sells electricity to the EVs and another that interacts (or not) with the distribution network.

Benefits

Share&Charge presents certain features that could help in fostering the deployment of e-mobility and of decentralized electricity production. EVs are one possible response to the environmental impact of transport. Although the EV market is expanding, several barriers prevent its scale-up. Numerous studies have emphasized the role of charging infrastructure in the deployment of e-mobility (Berkeley, Bailey, Jones, & Jarvis, 2017; Steinhilber, Wells, & Thankappan, 2013). An insufficient number of charging stations appears to be a major barrier to the market diffusion of

3. These are the terms used in the terms and conditions of Share&Charge. However, it can be pointed out that replacing the terms “flat rate” by “fixed tariff” would be more appropriate; flat tariffs are typically associated with a fixed price per kilowatt hour, which is not the case here. Similarly, “kWh billing” should be replaced by “volumetric tariff” or “variable tariff” since it depends on the amount of energy (volume of energy) drawn in kilowatt hour.

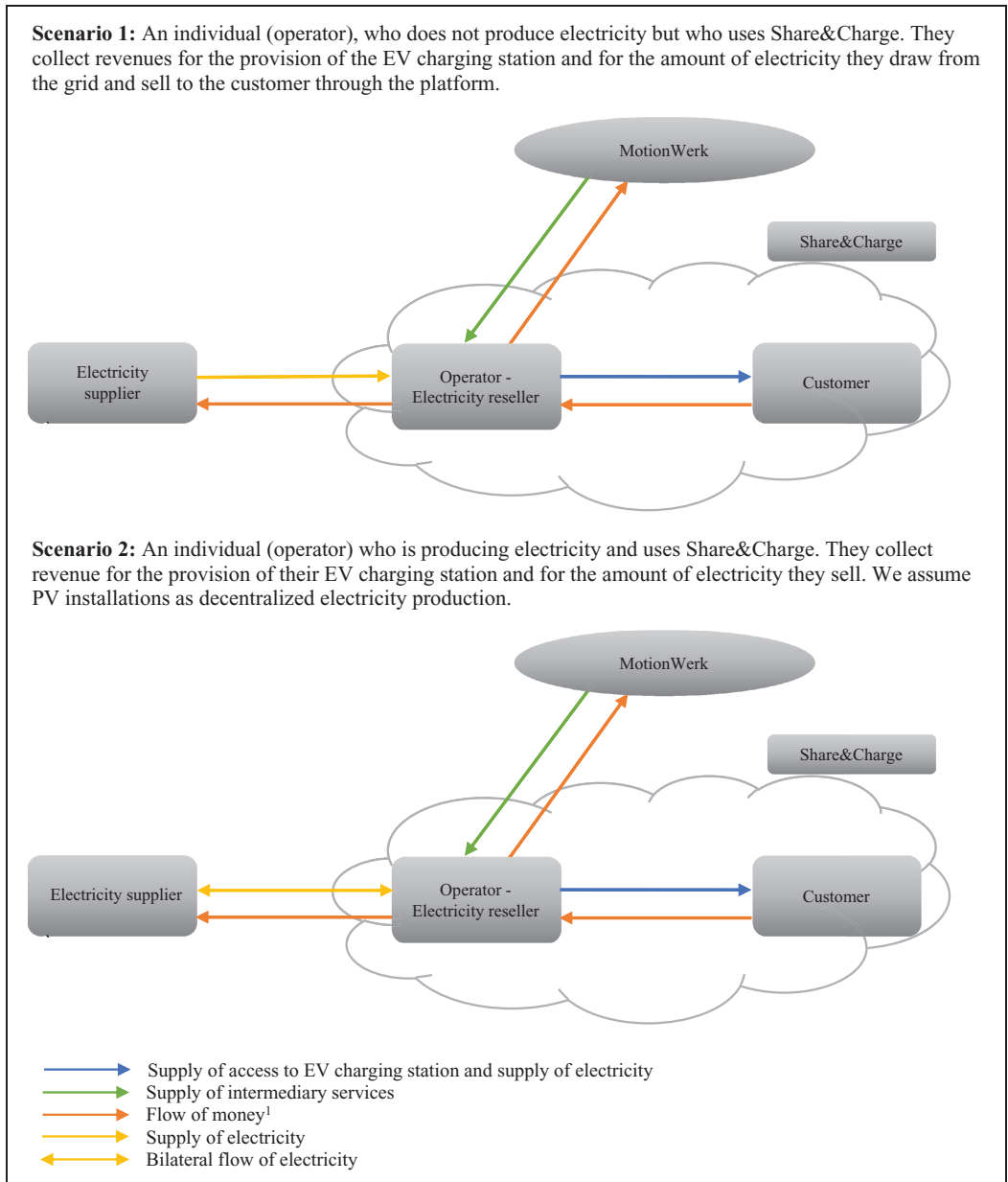


Figure 2. Presentation of the scenarios.

EVs, alongside their high acquisition price and their limited autonomy; these represent the primary sources of consumer anxiety in modifying their preferences (Bakker & Trip, 2013; Graham-Rowe et al., 2012; Kley, Lerch, & Dallinger, 2011; Sierzchula, Bakker, Maat, & van Wee, 2014; Tate, Harpster, & Savagian, 2008). A weak charging infrastructure, for example, a lack of charging

stations, makes driving an EV less attractive by impeding flexible and convenient use. However, a more adequate charging infrastructure coverage, through having a larger number of charging stations and a more optimal infrastructure, for instance, through an increase of fast plug-in charging stations and appropriate localization planning, requires adequate financing.

The literature has predominantly discussed the role of public authorities to fill the gap of EV charging infrastructure, leaving aside the potential function of the private sector (for instance, Liu & Wei, 2018; Hall & Lutsey, 2017; Shao, Taisch, & Ortega-Mier, 2016). Share&Charge enables charging infrastructure to be financed by individuals and by private companies, as cost is being recouped from EV drivers through tariffs set for recharging their vehicles. This approach follows the “user pays principle,” which engages with fair and effective funding. From the perspective of the operator, using the platform allows them to more rapidly amortize the initial investment necessary for the installation of a home-based charging station, and subsequently the maintenance costs of the terminal. Second, the expansion of EVs raises the question of the impact of EV charging on the electricity grid and on electricity demand (Lopes, Soares, & Almeida, 2011), especially in heavily populated areas where increased use of EVs will result in much higher electricity consumption. By increasing the number of charging stations, Share&Charge spreads electricity demand over a greater number of locations. Where the operator self-produces electricity (scenario 2), and upon condition that the PV production is sufficient to cover the demand, Share&Charge also enables the reduction of problems related to grid overload and energy losses due to decentralized energy production by enabling electricity storage directly within the EV battery instead of on the grid, thus establishing local electricity consumption through microgrids. This further facilitates the expansion of decentralized electricity production and may reduce the needs for flexibility in the electricity market through a better matching between local energy production and local demand.

Consequently, models like Share&Charge could positively impact energy and transport policy by tackling several upcoming obstacles associated with the development of EVs (scenarios 1 and 2) and decentralized renewable energy production capacities (only scenario 2). In particular, such models could foster the rise of EVs and facilitate the expansion of decentralized renewable electricity production. However, this innovative solution also creates regulatory challenges.

Part II—Legal framework and disruption: Tax treatment of Share&Charge

Recent technological advances have enabled the development of new business models based on platforms which enable the connection of previously unmatched demand- and supply-side market participants (Täuscher & Laudien, 2018). They facilitate peer-to-peer transactions, assuming a leading role in the deployment of the so-called sharing or collaborative economy. The Share&Charge model takes part in this evolution, by enabling direct transactions between operators of EV charging station and EV drivers, the platform acting as an intermediary. Nevertheless, as noted by the Organization for Economic Cooperation and Development (OECD), digitalization presents several features that defy current legal frameworks: mobility, reliance on data, network effects, the spread of multisided business models, a tendency toward monopoly or oligopoly, and volatility (OECD, 2015, p. 11). In addition, Share&Charge includes other features that disrupt electricity markets since it is based on decentralized distribution and electricity production (only scenario 2), facilitating peer-to-peer sales of electricity. As current electricity market regulations were initially conceived in the context of centralized electricity production, distribution, and transmission, they

lack provisions to regulate models like Share&Charge or include rules that may place an excessive burden to their deployment.

The second part of this contribution is dedicated to the challenges that Share&Charge pose to tax law (see Aslam & Shah, 2017; Beretta, 2017). As law inherently relies on territoriality, it was necessary to specifically locate the operations. Therefore, for the purpose of this article, operations are assumed to be performed by Belgian residents in Belgium and the location of management of MotionWerk, the corporation operating Share&Charge, is also assumed to be in Belgium. Because Belgium is a federal country with decentralized competences, we assume that the operator, the customers, and the corporation are all located in the Walloon region. When necessary, we draw a distinction between scenarios 1 and 2, as defined in the first part of this contribution. With respect to scenario 2, where electricity is self-produced, we hypothesize that electricity is generated by means of a “small PV unit” (<10 kVA). As Share&Charge is not limited to peer-to-peer relations—it also applies to business-to-consumer relations—we analyze tax rules solely in the hypothesis that the user and the operator are both individuals, because this model is more innovative and challenging to tax law. More particularly, we explore the interactions of Share&Charge with the following taxes: (1) energy taxes, (2) personal income tax, and (3) VAT. Energy taxation is understood in a broad meaning, including taxes *sensu stricto*, but also other parafiscal levies on energy like fees, tariffs, and so on. Issues regarding corporate income tax will not be addressed; we will concentrate solely on the relationships between the operator and the customer.⁴

Finally, it must be noted that the questions envisaged regarding taxation are more far-reaching than the Belgian territory and could be applicable in other countries. In addition, they could provide arguments for further harmonization at an European Union (EU) level.

Energy taxes

When European directives on the liberalization of the electricity market were adopted, electricity generation, transmission, and distribution were predominantly centralized.⁵ Electricity was mainly produced by large generation facilities and then transmitted through a centralized transmission and distribution grid network to end consumers. This reality has progressively evolved, with the emergence of decentralized forms of electricity production notably fostered by public policies, supporting renewable electricity production and, more recently, microgrids. Although renewable energy has been encouraged by subsequent European legislation, there are actually few provisions that regulate decentralized electricity production. In that respect, there is, for instance, no commonly shared definition between Member States of residential prosumers (GfK Belgium consortium, 2017). Although new directive proposals are timidly creating a framework for renewable

4. The main issues regarding corporate income tax and the digital economy concern tax base erosion and double taxation. Because the Share&Charge model results in a purely internal situation, it does not raise any problem of erosion of the tax base or of double taxation. Indeed, the location of management of MotionWerk, the corporation that operates Share&Charge, is situated in the country of the users of the platform—the operators and the customers—in accordance with the terms and conditions of the use of the platform. On these questions, see the Proposal for a Council Directive of March 21, 2018, on the common system of a digital services tax on revenues resulting from the provision of certain digital services, COM(2018) 148 final; and the Proposal for a Council Directive of March 1, 2018, laying down rules relating to the corporate taxation of a significant digital presence, COM(2018) 147 final.

5. See Directive 96/92/EC of the European Parliament and of the Council of December 19, 1996, concerning common rules for the internal market in electricity, *Official Journal* L27, January 30, 1997 P. 20-29.

electricity self-producers, they are already outpaced by models like Share&Charge which enables direct sales of electricity between individuals.⁶ Many domestic legal systems, including those in Belgium, also appear to have been overtaken by such new market developments.

In Belgium, peer-to-peer sale of electricity remains unregulated; there is no specific legal provision that determines which rules should apply when one individual sells electricity to another individual. Based on this background, it is necessary to apply existing rules on this new model and assess how they can fit into it. In this regard, a major issue is the lack of legal certainty regarding the qualification of the operators using Share&Charge who provides access to the EV charging station and subsequently sells the required electricity to charge an EV: should they be considered an electricity supplier or an end consumer? The Share&Charge model obscures the apparently clear distinction between these concepts. Qualifying the operators is central to this paradox because it determines their applicable rights and obligations. For instance, energy suppliers are required to obtain an authorization in Belgium, as is the case in France and in the United Kingdom, to supply electricity to end consumers. In addition, answering this question is also relevant to determine the person liable for taxes, tariffs, and levies. This issue of characterization of the operator is addressed in section “Qualification of the operator” of this contribution, while section “Consequences of the electricity price structure in setting user tariffs” relates to the consequences of the electricity price structure in setting user tariffs within the Share&Charge model.

Qualification of the operator. An end consumer is defined as “any individual or legal entity buying electricity for *its own use*.”⁷ This qualification will give rise to the payment of a number of taxes, levies, and tariffs. End consumers are taxed for their energy consumption (federal contribution on electricity and gas, Article 21bis-quarter of the law of April 29, 1999) and for their support to the cost of a number of public policies and services, such as the financing of offshore windfarms’ grid connection (Article 7, § 2 of law of April 29, 1999) and of green certificates (Article 7, § 1 of the law of April 29, 1999). In Belgium, prosumers are assimilated to end consumers; they are not characterized as electricity suppliers for the electricity they supply to themselves. Prosumers are legally defined as “individuals or legal entities producing electricity principally *for their own use*” (Article 2, 2° decree of April 12, 2001). For instance, individuals who produce electricity through PV panels principally for their own use can be characterized as prosumers. Under both of these definitions, the idea that electricity is either bought or produced for their own use is central. In principle, it excludes situations where electricity is directly sold to a third party.⁸ Based on this background, the operators using Share&Charge do not fit properly into the concept of end consumers (or prosumer assimilated to an end consumer). Indeed, they sell the electricity necessary to charge an EV, whether it is self-produced, drawn from the grid, or a mix of both, to a third person: the customer.

6. See Article 2, (aa) and Article 21 of the Proposal of February 23, 2017, for a Directive of the European Parliament and of the Council on the promotion of the use of energy from renewable sources, COM(2016) 767 final/2.

7. See, for instance, Article 2, 14°, of the federal law of April 29, 1999, on the organization of the electricity market, *Belgian Official Journal* of May 11, 1999.

8. As will be further explained (Infra p. 13), owners of small PV installations benefit from financial incentives, which, notably, take the form of a net metering system. Within this system, the electricity injected into the grid is financially rewarded. However, in this situation, it is considered that electricity is produced for the producer’s own use.

The “electricity distributor,” who must be understood as an electricity supplier, is defined as “the individual or legal entity selling electricity or gas on their account or on behalf of others.”⁹ The electricity distributor is the taxable person for the purpose of the energy contribution (Law of July 22, 1993¹⁰). The energy contribution is assimilated to an excise, in which the European framework on excises and the directive on the taxation of energy products apply, as well as the Belgian domestic law on excise duties.¹¹ It consists of an indirect levy on the making available or use, in Belgium, of energy products including electricity.¹² Based on this background, to the extent that the operator sells electricity to third persons, they could be qualified as an “electricity distributor” and, as such, be considered the person liable for the payment of the energy contribution. In this case, the formalities deriving from the general excise duties system (Law of December 22, 2009¹³) would apply. Of course, this could only be true to the extent where operators are not characterized as end consumers for the volume of electricity they sell to the customer.

Clearly, current electricity market provisions have not been designed to regulate peer-to-peer sales of electricity and would require some amendments. Indeed, it seems hard to consider, without stretching the concepts, the operators of charging stations as end consumers. Therefore, in the event that these operators are not characterized as end consumers, they would be part of the electricity supply chain, and the end consumer would be the customer of the operator of a charging station. Therefore, operators would participate in the cascading system applicable to taxes, tariffs, and other levies. In addition, these operators would be qualified as electricity suppliers, which would characterize them as the taxable persons of the energy contribution, and require them to obtain a license for electricity supply, both in the hypothesis that electricity is drawn from the grid (scenarios 1 and 2) and self-produced (scenario 2).

The issue of characterizing individuals selling electricity to other individuals has already been raised in other contexts. First, the Walloon regulatory authority (Cwape)¹⁴ has attempted to clarify the situation of lessors leasing a building on which PV panels were installed. The question was the following: in the event that a building on which PV panels are installed is rented, who, from the lessee or the lessor, should be qualified as an electricity producer, where the occupants of the building are the consumers of electricity generated by the PV unit? Characterization as an electricity producer was a primary condition to benefit from green certificates, in the sense of the Walloon decree of April 12, 2001.¹⁵ To clarify this problem, the Cwape issued a note setting the

9. Article 424 of the Program law of December 27, 2004, *Belgian Official Journal* of December 31, 2004.

10. Federal law introducing an energy contribution to safeguard competitiveness and employment, *Belgian Official Journal* of July 24, 1993.

11. See notably the Council Directive 2003/96/EC of October 27, 2003, restructuring the community framework for the taxation of energy products and electricity, *Official Journal* L283/51 of October 31, 2003; executed by the Program law of December 27, 2004, *Belgian Official Journal* of December 31, 2004; and the law of December 22, 2009, on the general excise duties' system, *Belgian Official Journal* of December 31, 2009.

12. Article 1 of the aforementioned law of July 22, 1993.

13. Aforementioned, note 16.

14. The Cwape is the Walloon (regional) regulatory authority. It carries out the general task of monitoring and control and is entrusted with specific missions with respect to the regional gas and electricity markets. See Article 43, §1st bis of the Walloon decree of April 12, 2001, on the organization of the regional electricity market, *Belgian Official Journal* of May 1, 2001. For more information, see <https://www.cwape.be/?%20dir=1.1>, last accessed August, 2, 2018.

15. *Belgian Official Journal* of May 1, 2012. In particular Article 36. The green certificate system consists of a market-based mechanism, in which the offer originates from producers of renewable electricity and the demand emerges from power suppliers who are required to submit a determined number of green certificates (quota obligation) in order to

conditions that need to be fulfilled for an end consumer (the lessee) to be considered an electricity producer in the specific hypothesis of the letting of immovable property equipped with PV panels.¹⁶ Accordingly, the following elements suggest that the lessor is the electricity producer: the lessor bears the risks associated with the project and the costs of maintenance, owns the electricity, and has the right of “use and enjoyment”¹⁷ of the PV unit. In this case, the lessor supplies electricity to the lessee and, hence, requires a license. However, when the lease includes the enjoyment of the PV unit, the lessee is regarded as the electricity producer, not the lessor.

Second, two recent developments also deserve to be mentioned—the first one emerging from the Cwape and the second from a draft legislation. They concern the issue of qualifying the EV charging station’s owner(s) from the perspective of authorization of supply. In particular, they reject the qualification of owner(s) of an EV charging station as an electricity supplier, discharging them from the requirement of an authorization for electricity supply. On the one hand, the Cwape has ruled that electricity supply for activities involving rapid plug-in charging stations provided by petrol/diesel filling stations does not require any authorization.¹⁸ Such operations should be characterized as a supply of service (EV charging station), rather than of a supply of goods (electricity); therefore, they do not necessitate any authorization for electricity supply. This position is conditional upon the requirement that the electricity supplied at the charging station is covered by a license to supply. In this case, it seems that two hypotheses must be distinguished. In the first case, the electricity is supplied by an electricity supplier, who is not the owner of the charging station, and transmitted from the grid to the charging station. The owner(s) of the charging station does not require any license to supply electricity, as long as the electricity supplier is covered by a license. By contrast (second hypothesis), if the owner(s) of the charging self-produce the electricity supplied through the charging station, they would need to be covered by a license to supply electricity. Certain provisions of a draft bill modifying the Walloon decree of April 12, 2001, tend to confirm the position that *public* charging points do not require an authorization for electricity supply.¹⁹ In

avoid paying a fine. The price is determined by the market but an amount of 65 Euros per certificate is guaranteed. This system has been replaced by the “Qualiwatt” scheme, which encompassed a premium and net metering: green certificates still apply when electricity is produced by installations put in operation before March, 1, 2014. Qualiwatt ended on June 30, 2018.

16. Note CD-13k07-CWaPE of September 12, 2013, on the conditions to fulfill for an end consumer to be considered a producer in the specific hypothesis of an ordinary lease or a “all included” rental of buildings equipped with PV panels, accessible at <https://www.cwape.be/?%20dir=3&news=293>, last accessed August, 2, 2018. It complements the Guidelines CD-13k07-CWaPE of September 12, 2013, on the conditions to fulfill for an end consumer to be considered a producer.
17. Use and enjoyment are traditional concepts of civil law. The right of use (in latin “usus”) refers to the right to use the good, while the right of enjoyment (in latin “fructus”) means the right to collect the income generated by the good. It applies to the owners, but also lessees and usufructuaries. It must be distinguished from the right to dispose from the good (“abusus”), whose only owners benefit.
18. See decision CD-10d13-Cwape of April 13, 2010, accessible at <https://www.cwape.be/? dir=0.2&docid=134>, last accessed August, 2, 2018; and decision CD-17h11-Cwape of August 10, 2017, accessible at <https://www.cwape.be/? dir=0.2&docid=3248>, last accessed August, 2, 2018.
19. Draft bill of January 1, 2018, modifying the Decree of April 12, 2004, on the electricity market organization for the deployment of smart meters and flexibility, in particular Article 9, accessible at <https://www.cwape.be/? dir=4&news=772>, last accessed August, 2, 2018. See also the advice of the Cwape: Advice CD-18c01-CWaPE-1771 of March 2, 2018, on the Draft bill of January 1, 2018, modifying the Decree of April 12, 2004, on the electricity market organization for the deployment of smart meters and flexibility, in particular p. 19, accessible at <https://www.cwape.be/? dir=4&news=772>, last accessed August, 2, 2018.

this context, a public charging point is defined as a charging point that provides nondiscriminatory access to users of EVs.

Nevertheless, these elements cannot be fully applied to Share&Charge for the purpose of electricity taxation. First, Cwape is an administrative authority which has no power in tax matters. The concepts of supply of electricity and of end consumption in tax law are interpreted autonomously compared to other fields of law (such as administrative law). Second, the services provided by Share&Charge could hardly be considered public. Indeed, it appears from the terms and conditions of the platform that access to charging stations is not public as it requires the consent of the operator, who is even authorized to provide preferential (discriminatory) tariffs for family and friends. These uncertainties create an unpredictable regulatory environment for the deployment of business models like Share&Charge. Moreover, current provisions could impose a heavy burden on the operators, associated with their possible characterization as an electricity supplier, that could prevent the furtherance of their activities. As a consequence, it appears necessary to clarify the current legal framework and to adapt it to models like Share&Charge.

Consequences of the electricity price structure in setting user tariffs. A central issue for the operators using Share&Charge is to set a price (tariff) for what they offer to be paid by the customer when charging their EV. Determining appropriate user tariffs is critical because the operator needs to remain competitive with other operators of EV charging stations within Share&Charge. At the same time, they should make a profit or at least not lose money. An essential element, when setting user tariffs, will be the cost of electricity.²⁰ In the electricity market, the price paid for electricity is composed of the retail electricity price, tariffs, taxes, and other levies. In this second subsection, we analyze the effect this price structure has on the determination of Share&Charge's user tariffs, by distinguishing between scenarios 1 and 2.

Within scenario 1, assuming a volumetric tariff design (the consumers pay per kilowatt hour drawn from the grid), the electricity costs of the operator are linearly dependent on the amount of electricity drawn from the grid in kilowatt hour (this amount is multiplied by a retail price in Euros/kWh, which is assumed constant). This electricity will be used to charge EVs and to meet the operator's demand. For instance, take the following hypothesis: assuming an annual demand of 3500 kWh and a retail electricity price to the operator of 0.25 Euros/kWh including VAT, the operator must pay 875 Euros including VAT. The operator provides the EV charging service three times per year, 40 kWh each time, totaling 120 kWh. In order to break even, the station operator will need to charge a minimum of 0.25 Euros/kWh (thus 10 Euros per charging) in a flat-rate electricity price context. However, if the price of the electricity supplied to the station operator is variable, then the operator should determine the tariff charged depending on the electricity price in real time. The operator should be aware of these elements to avoid setting unprofitable prices.

Within scenario 2, taxes, levies, and tariffs will depend on the difference between the amounts of electricity produced and consumed. Electricity consumed will encompass the demand of the operator and the demand of the EVs which use the charging station. If there is an excess in total energy production, the electricity component for the use of the charging station should be any amount above 0. Indeed, owners of a "small PV installation" (less than 10 kVa) will benefit from financial incentives, which takes the form of compensation (a net metering system) and of a

20. The tariff asked by the operator also needs to take into account the amortization of the PV unit and of the charging station but these questions will not be addressed in this article.

premium²¹ (Brouhns, 2014; Brouhns, Haverbeke, & Caillol, 2015; Gerkens, 2015). Net metering consists of a meter that runs forward when drawing electricity from the grid and backward when injecting electricity into the grid.²² In this system, electricity injected into the grid is valued at the retail electricity price and excess electricity is not valued (see De Villena, Gautier, Fonteneau, & Ernst, 2018, p. 3). Taxes, levies, and tariffs are calculated on the basis of the net energy consumed. Because excess electricity is not valued, the minimal electricity price component only needs to be set above 0. On the contrary, in the event that difference is negative, namely when electricity consumed is above electricity produced, the user tariff should be above the price actually paid by the EV charging station operator for the electricity consumed (electricity price plus tariffs, taxes, and other levies). In this instance, the situation is similar to scenario 1. Finally, electricity provided to the customer could also be a mix of self-produced electricity and of electricity drawn from the grid. Then, both observations apply.

The elements can be illustrated by the following example: The operator has an annual production of 2000 kWh from its PV unit and benefits from the net metering system. They provide access to the EV charging station three times during the entire year, each time for 40 kWh (in total 120 kWh).

- If we assume that the operator’s own consumption is 1600 kWh, the difference between electricity produced (2000 kWh) and electricity consumed ($1600 + 120 = 1720$ kWh) is 280 kWh. Therefore, $\text{Electricity}_{\text{produced}} - \text{Electricity}_{\text{consumed}} > 0$. In this case, no price has been paid by the operator for the electricity used to charge the EV, and this excess of electricity cannot be compensated on the main utility grid. Therefore, the price should be set above 0.
- If we assume that the operator’s own consumption is 2100 kWh as opposed to 1600kWh, and once more with three 40-kWh EV charges, the difference between electricity produced (2000 kWh) and electricity consumed (2220 kWh) is -220 kWh. Therefore, $\text{Electricity}_{\text{produced}} - \text{Electricity}_{\text{consumed}} < 0$. In this case, suppose the operator has paid a price of 0.25 Euros/kWh for the electricity used by the EV charging station customer. As a consequence, the EV customer tariff for the use of the charging station should be set above 10 Euros ($0.25 \text{ Euros} \times 40$), the break-even point.
- If we assume that the operator’s own consumption is 1900 kWh, the difference between electricity produced (2000 kWh) and electricity consumed (2020 kWh) is -20 kWh. Therefore, electricity necessary to charge the EV will be 100 kWh of self-produced electricity and 20 kWh of electricity drawn from the grid. Assuming that the operator had paid a price of 0.25 Euros/kWh for electricity drawn from the grid, the price asked for each use of the charging station should be set above 1.25 Euros ($0.25 \text{ Euros} \times 5$).

Aside from the difficulties outlined in the case of scenario 1, and which apply to some extent to scenario 2 (when $\text{Electricity}_{\text{produced}} - \text{Electricity}_{\text{consumed}} < 0$), specific difficulties are encountered in scenario 2. Indeed, two variables need to be considered: the electricity produced and the electricity consumed. However, both of them can be hard to predict. On the one hand, electricity production through a PV installation will depend on external factors such as weather conditions, which can be unpredictable. In addition, the PV unit could encounter technical problems and could be temporarily out of use. On the other hand, electricity consumption can vary from year to year

21. Or, alternatively, green certificates for installations put in operation before March, 1, 2014.

22. Article 6bis and 24bis Governmental Decree of March 30, 2006, on public services obligations within the electricity market, *Belgian Official Journal* of April 24, 2006.

and will depend on how many customers charge their EV at the operator's charging station, and what quantity of electricity they will require. Therefore, it can be difficult for the charging station operator to determine, at the moment of the EV charging operation, whether the difference between electricity production and consumption will be positive or negative. This becomes even more critical when electricity provided to the customers is a mix of self-produced electricity and of electricity drawn from the grid.

For these reasons, and considering the fact that the operator may likely be an individual who does not necessarily have specialized knowledge and experience regarding the electricity market, there could be a case for provision of support services in order to assist the operator in setting appropriate tariffs. This role could be played by existing actors such as distribution system operators (DSOs) or regulators. Alternatively, there could be room for a new market segment to develop. For instance, the French DSO Enedis provides a smart (or "communicating") metering system called Linky.²³ It offers several personalized services, based on information received through smart meters, which encompass advice to adopt wiser consumption behaviors, access to a daily monitoring of electricity consumption and production, and compares one person's consumption with that of other clients.²⁴ Such services could be easily extended to assisting users of Share&Charge.

Personal income tax

Share&Charge represents the perfect example of what is known as the "sharing economy," also labeled as "collaborative consumption" (Botsman, 2013; Botsman & Rogers, 2010a, 2010b), "access-based consumption" (Bardhi & Eckhardt, 2012; Belk, 2014), "connected consumption" (Schor, 2014; Schor & Fitzmaurice, 2015), and a handful of other synonyms (see Codagnone & Martens, 2016). Although there is no "shared" consensus on how to define the concept and on which activities it comprises, it is generally accepted that sharing does not necessarily exclude profit (Botsman, 2013). For example, Meelen and Frenken (2015) understand the sharing economy as: "consumers (or firms) granting each other temporary access to their under-utilized physical assets ('idle capacity'), possibly for money" (see also Codagnone & Martens, 2016). When a price is received for the access provided, such as in the Share&Charge model, the amount received can be qualified as an income and, as such, be taxable as personal income.

The operator using Share&Charge, who is assumed to be an individual for the purpose of this article, generates two types of income: the price received for supply of access to the EV charging station and price received for the subsequent sale of electricity. With the emergence of the sharing economy, qualifying items as income appears to be more complex than it used to be. As noted by the European Commission in its "European Agenda for the Collaborative Economy," the collaborative—or sharing—economy obscures and distorts "established lines between consumer and provider, employee and self-employed, or the professional and non-professional provision of services."²⁵ This section outlines the general principles on personal income taxation applicable in Belgium (see section "General principles on personal income taxation in Belgium"), before applying the concepts of professional income (see section "Professional income") and private income (see section "Income from the private sphere") to Share&Charge.

23. For more information, see <https://www.enedis.fr/linky-communicating-meter>, last accessed August 2, 2018.

24. See terms and conditions available at <https://espace-client-particuliers.enedis.fr/web/espace-particuliers/cgu-part>, last accessed August 2, 2018.

25. Communication of June 2, 2016, COM(2016) 356 final, p. 2.

General principles on personal income taxation in Belgium. Until the adoption of the Program Law of July 1, 2016, income resulting from the sharing economy was taxed just like any other income.²⁶ Belgian tax law distinguishes between four categories of income: professional income, income from movable property, income from immovable property, and miscellaneous income. Qualifying the form of income is critical as each income category is governed by its own rules, which allows for the determination of what is taxable income, its amount, and the deductions that apply. In addition, it is necessary to determine whether the income resulting from different operations must be taxed separately, under different categories, or instead should be taxed together, within one single category.

Income can result from a professional activity or be derived from the private sphere. Income resulting from a professional activity, even an accessory, is characterized as a professional income. This is subject to a global progressive taxation. Income from the private sphere can be broken down into income from movable property, income from immovable property, and miscellaneous income. Depending on their nature, these will be taxed according to either a flat rate (separate taxation) or, alternatively, a progressive rate (global taxation). The amount of tax related to income from immovable property is calculated either on the basis of a fictitious or theoretical income (cadastral income) or on the basis of real net income. Income from movable property is exhaustively defined by reference to five subcategories, which include income from the hiring out of movable property. Finally, miscellaneous incomes represent a residual category; income that does not belong to one of the abovementioned categories falls within the miscellaneous income category, which notably comprises occasional profits and benefits. Some types of income are nevertheless considered as being nontaxable as they are derived from the normal management of private assets. For each category, more-specific criteria have been set forth by various statutes and regulations, by the courts, and by the tax administration.

Since the entry into force of the Program Law of July 1, 2016, miscellaneous income resulting from the sharing economy benefits from a preferential tax rate (Afschrift, 2016; Hendricks, 2016; Marischal & Ickx, 2016). By the adoption of the Program Law of July 1, 2016, the Belgian legislator has indeed shown willingness to support the development of the sharing economy but also to catch undeclared income (Afschrift, 2016; Hendricks, 2016; Marischal & Ickx, 2016). The scope of this favorable scheme is rather narrow as it only applies to benefits and profits resulting from services (Article 90, 1st lid, 1°bis, Income Tax Code (“ITC”). Income resulting from the supply of goods is excluded from the preferential regime. However, these concepts are not defined in the context of personal income taxation. Although the distinction between supply of goods and of services is well-established by rules and case law governing VAT, these do not apply to personal income taxation. This makes it troublesome to determine with certainty the scope of the law. In addition, the Program Law of July 1, 2016, requires several conditions to be fulfilled such as the use of an aggregated platform. When the supply of a service also comprises income from movable property or from immovable property, a breakdown of the income is foreseen (Article 90, lid 3). In the event that the contract does not contain a distinct price for the supply of a service, it is deemed to represent 20% of the total performance.

Professional income. Bearing in mind these elements, the first step is to determine whether income must be considered professional or, alternatively, generated in the private sphere. A professional

26. *Belgian Official Journal* of July 4, 2016.

activity supposes a series of sufficiently numerous, repeated, and closely connected operations (Com.IR 92 n°23/35; 90/7.2, 14° Com.IR 92; Cass., May 6, 1969). Criteria such as activity financing with high levels of credits, whether the activity is the extension of or closely linked to a professional activity, the number, and the frequency of the operations/transactions and remunerations appear to be decisive in the characterization as professional income (Tiberghien, 2018, n°1096). Professional income is divided into five subcategories, for which additional qualification is necessary. Characterization as a professional activity will depend on the factual circumstances. For instance, the Belgian administration (the ruling commission) has considered that income from a PV unit installed on the roof of a rented building does not qualify as a professional activity, since the operation of the PV panels does not require intense or regular work (ruling n° 2010.317 of September 7, 2010).

Elements such as access limitation to the platform for a maximal cumulated period and for a maximal amount of income generated through the platform represent arguments in favor of non-professional income (ruling n°2015.455 of September 29, 2015). Share&Charge's terms and conditions, on the contrary, do not contain such provisions. In any event, the qualification will depend on the factual circumstances applying to each operator, based on the criteria of regularity and of intensity of the activity. In the case of a professional activity, all the income resulting from this activity—electricity supply and EV charging station provision—is to be imposed, globally, according to a progressive tax rate.

Income from the private sphere. If the income is regarded as nonprofessional, it is necessary to determine in which remaining category it belongs: income from movable property, income from immovable property, and miscellaneous income. In particular, it is necessary to successively qualify the income from electricity supply and from an EV charging point provision. Depending on the interpretation, income resulting from the whole operation—supply of access to the charging station and sale of electricity—will be taxed globally or separately. Indeed, one could understand the operations as a pure sale of electricity or value the access to the charging station.

Income resulting from electricity supply produced by a PV unit is regarded as miscellaneous income under Article 90, 1° ITC (oral questions n° 5400 et 5401 of 20 May 2008; n° 587 of July 15, 2009). Consequently, the supply of electricity by the operator of Share&Charge should logically be regarded as generating miscellaneous income, and characterization as income from movable (or immovable) property should be excluded. In this case, income tax should be imposed at a distinct rate of 33% (Article 171, lid 1, 1° ITC). Nevertheless, these benefits and profits could not be imposed if they are regarded as resulting from operation falling within the normal management of private assets.

In the context of electricity production by means of a “small PV unit,” it has been considered that the sale of self-produced electricity is not regarded as being taxable, provided that electricity is produced through PV installations that are exclusively used in the private sphere (oral questions n° 5400 et 5401 of 20 May 2008; n° 587 of July 15, 2009). This last concept is understood in the sense that the PV unit has been intended to meet the producer's own needs (ruling n° 2010.317 of September 7, 2010). This position can only be followed if the installation is not used in the context of a professional activity, even if it is intended to supply the producer's own needs. For example, if the PV unit is directly used to provide energy to a building used for professional purposes, for instance, a pharmacy, income generated by the installation will be qualified as professional income.

As noted, in the Share&Charge model, the operator provides access to the charging station and who then sells electricity to the customer (third party). In our view, this implies that the installation cannot be considered to have been intended to meet the producer's own needs and, therefore, that electricity is not exclusively used in the private sphere. Nevertheless, this condition derives from administrative practice and interpretation specific to the context of prosumers. It should not be seen as binding for the purpose of applying personal income tax to models like Share&Charge. Therefore, on a case-by-case analysis, income from a charging station could still be considered as resulting from operations falling within the normal management of private assets.²⁷ Another question will be to determine whether income resulting from electricity supply preferential treatment of Article 90, lid 1, 1st bis applies to the sharing economy. In our opinion, the answer is negative as the preferential treatment exclusively applies to supply of services; by contrast, supply of electricity should be regarded as a supply of goods. However, the income could still be broken down between the supply of electricity and a possible supply of service, accordingly with Article 90, lid 3.

Since the EV charging station is a physical property, incomes resulting from its use can be regarded as income resulting from property rental or leasing. Depending on the qualification of the charging station as a movable or immovable property, the income generated from the sale of electricity will be qualified as income resulting from a movable (Article 11-19bis ITC) or immovable property (Article 7-10 ITC). This qualification will have several legal consequences, notably on the tax rate and on the deductions. One could also argue that the income may be regarded rather as miscellaneous (occasional profits and services, Article 67, lid 1, 1^o), with a tax imposed at the distinct rate of 33%. In such a case, it will be necessary to determine whether the income has resulted from the normal management of private assets and is, therefore, not subject to taxation. If not, a subsequent challenge will be to figure out whether the generated income will be taxed at the preferential rate applicable to services from the sharing economy (Article 90 lid 1, 1^obis ITC). Although no general conclusion can be made in this regard as all of these elements should be assessed on a case-by-case basis, income resulting from the use of the EV charging station within the Share&Charge model should be qualified, in our view, as income resulting from an immovable property.

VAT

Unlike personal income tax which is calculated based purely on national rules, VAT has been harmonized at EU level. VAT is a general consumption tax assessed on the added value of goods and services. It is collected in a fractional way, according to a mechanism that ensures that the tax remains neutral, regardless of the number of transactions involved. The tax is paid to public authorities by the supplier of services or goods (the taxable person), who generally has a right of deduction of the amount of VAT paid to his own suppliers. As a consequence of the deduction scheme, the amount of the tax is legally and ultimately borne by the final consumer, as part of the price paid for goods or services. Operations subject to VAT are divided into four categories: the supply of goods, the supply of services, importation, and intra-community acquisition of goods. The supply of goods is defined as "the transfer of a right to dispose of tangible property as an owner" (Article 14 VAT Directive and Article 10 Belgian VAT code), while the supply of a service is a residuary category that encompasses "any operation which does not constitute a supply

27. On this issue, see notably Andre (1992).

of goods” (Article 24 VAT Directive and Article 18 Belgian VAT code). For the purpose of VAT treatment, electricity is assimilated to be a tangible good (Article 15 VAT Directive and Article 9 Belgian VAT code). The taxable person is compelled to fulfill several obligations that can be burdensome, especially when this person is an individual and whose activity generates modest value. These include notifying the existence of an economic activity, issuing regular invoices, keeping regular accounts, and submitting periodic and regular VAT returns.²⁸

To determine the VAT treatment of the transactions, several questions need to be answered: who (taxable person), what (taxable transaction), where (place of supply), and how much (taxable amount)?²⁹ In addition, it is necessary to determine whether some exemptions need to be applied. As underlined by the European Commission, collaborative platforms pose several difficulties in this regard:

Supplies of goods and services provided by collaborative platforms and through the platforms by their users are in principle VAT taxable transactions. Problems may arise in respect of the qualification of participants as taxable persons, particularly regarding the assessment of economic activities carried on, or the existence of a direct link between the supplies and the remuneration in kind (. . .).³⁰

This section focuses on assessing who is the taxable person (see section “General principles on personal income taxation in Belgium”) and what are the taxable transactions (see section “Professional income”). Because the terms and conditions of Share&Charge require the operator and the customer to have their place of residence in the country of the registration office of the corporation operating Share&Charge (MotionWerk), no problem of locating the operations may arise when using Share&Charge.

The taxable person. According to Article 9(1) of the VAT Directive, a taxable person is anyone “who independently carries out in any place any economic activity, whatever the purpose or result of that activity.”³¹ The Share&Charge model raises several issues regarding this definition because the role of MotionWerk in the supply of the charging station can be interpreted in different ways. In particular, the key issues are twofold:

1. Who is the taxable person vis-à-vis activities supplied to the customer: MotionWerk or the operator?
2. Must the sharing of the charging station and the subsequent sale of electricity be considered an economic activity?

28. Title VIII of VAT code.

29. See in this regard: “Supplies of goods and services provided by collaborative platforms and through the platforms by their users are in principle VAT taxable transactions. Problems may arise in respect of the qualification of participants as taxable persons, particularly regarding the assessment of economic activities carried on, or the existence of a direct link between the supplies and the remuneration in kind (for instance in case of ‘bank’ type arrangements where participants contribute goods or services to a common pool in exchange for the right to benefit from that pool).” Communication of June 2, 2016, on the Agenda collaborative economy, COM(2016) 356 final.

30. Communication of June 2, 2016, on the Agenda collaborative economy, aforementioned note 34.

31. In Belgian domestic law, see Article 4, § 1 Belgian VAT code: “Anyone who independently and regularly carries out an economic activity of supply of goods or of services as referred to in the present code, as a principal or as a secondary activity, with or without purpose of profit, and whatever the place of this economic activity.”

Agents and commissioners in the context of VAT. To determine who is the taxable person, it is necessary to assess whether MotionWerk acts in the name and on behalf of the operator (undisclosed agent) or in their own name (disclosed agent or commissioner). The concept of an intermediary is actually enshrined in a different set of rules, in particular, the E-commerce Directive (2000/31),³² the services Directive (2006/123³³), and the VAT Directive. Recently, intermediation has been interpreted, for the purpose of the E-commerce Directive and of the services Directive by the European Court of Justice, in two cases involving the platform Uber. Nevertheless, because VAT encompasses autonomous concepts, one should be cautious when attempting to draw conclusions from these developments; it is uncertain whether they could be translated to VAT law or not.

In the case 434/15 *Elite Taxi v. Uber Systems SpainSL*, of December 20, 2017, the European Court of Justice had to rule about the status of the ridesharing platform Uber. Elite Taxi, Barcelona's licensed taxi association, argued that the UberPop service was unlawful as it was being operated without the necessary licenses required of private taxi service operators. The central question of the case was to determine whether Uber was a provider of an information society service as referred to Article 2(a) of the E-Commerce Directive and as such could operate without a local license in Spain. An information society service is defined as "(i) any service normally provided for remuneration, (ii) at a distance, by electronic means and (iii) at the individual request of a recipient of services."³⁴

The Court found that:

intermediation service provided by Uber is based on the selection of non-professional drivers using their own vehicle, to whom the company provides an application without which (i) those drivers would not be led to provide transport services and (ii) persons who wish to make an urban journey would not use the services provided by those drivers. In addition, Uber exercises decisive influence over the conditions under which that service is provided by those drivers. On the latter point, it appears, *inter alia*, that Uber determines at least the maximum fare by means of the eponymous application, that the company receives that amount from the client before paying part of it to the non-professional driver of the vehicle, and that it exercises a certain control over the quality of the vehicles, the drivers and their conduct, which can, in some circumstances, result in their exclusion,

concluding that Uber was not a mere intermediation service provider, but rather performed transport services.³⁵ In other words, as stated by Advocate General Szpunar, Uber provides a composite supply where the supply of transport "constitutes, from an economic perspective, the main component." This wording is reminiscent of the vocabulary used in VAT law. According to van Cleynenbreugel (2018), two criteria seem to emerge from the Court's judgment: the creation of a new market and the exercise of a decisive influence over the conditions of a service offered. This position was confirmed in the case *Uber France SAS* (C-320/16), rendered on April 10, 2018.³⁶

32. Directive 2000/31/EC of the European Parliament and of the Council of June 8, 2000, on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market, *Official Journal L 178*, July 17, 2000.

33. Directive 2006/123/EC of the European Parliament and of the Council of December 12, 2006 on services in the internal market, *Official Journal L 376*, December 27, 2006.

34. Directive 2006/123/EC of the European Parliament and of the Council of December 12, 2006 on services in the internal market, *Official Journal L 376*, December 27, 2006.

35. § 39 of the judgment.

36. E.C.J., *Uber France SAS*, C-320/16, April 10, 2018.

In addition, in its communication a *European Agenda for the Collaborative Economy*, the Commission sets three criteria to assess whether a collaborative platform also provides an underlying service: (i) whether the platform sets the final price to be paid by the user or solely recommends it; (ii) whether it sets terms and conditions (other than price) that determine the contractual relationship between the underlying service providers and the user; and (iii) whether it owns the key assets used to provide the underlying service. When these criteria are all met, the Commission considers there

are strong indications that the collaborative platform exercises significant influence or control over the provider of the underlying service, which may in turn indicate that it should be considered as also providing the underlying service (in addition to an information society service).³⁷

In VAT law, according to Article 28 of the VAT Directive³⁸ “[w]here a taxable person acting in his own name but on behalf of another person takes part in a supply of services, he shall be deemed to have received and supplied those services himself.” To determine whether a taxable person takes part in the supply of a service provided by another person, as referred to Article 28 VAT Directive and Article 9 (a) Implementing Regulation 282/2011,³⁹ this person needs to fulfill several conditions: (i) he must participate in the supply of service, (ii) he must act in his own name, and (iii) on behalf of another person.⁴⁰ If these conditions are fulfilled, he will be qualified as a commissioner. Belgian law has a broader view of the concept of the term commissioner, but which is not necessarily consistent with European legislation on VAT.⁴¹ It sets an irrefragable presumption⁴² that intermediaries who receive an invoice from the seller, or who issue an invoice to the purchaser, in their own name, shall be considered a commissioner (Article 13 Belgian VAT Code)⁴³:

1. A buying agent is considered to be a buyer and, in respect of his principal, seller of the goods which are bought by his intermediary; the selling agent is considered to be the seller, and, in respect of his principal, buyer of the goods which are sold by his intermediary.
2. A commission agent means not only someone who acts in his own name or under a company name on behalf of his principal, but also the intermediary in the purchase who receives from the seller, or the intermediary in the sale who delivers to the buyer, on any basis, an invoice, a debit note or any other writing similarly expressed, in his own name.

In addition, Article 20(1) of the VAT code provides:

37. Communication of June 2, 2016 on the agenda collaborative economy, aforementioned note 34.

38. Council Directive 2006/112/EC of November 28, 2006 on the common system of VAT, *Official Journal L* 347, December 11, 2006, p. 1–118.

39. Council Implementing Regulation (EU) No 282/2011 of 15 March 2011 laying down implementing measures for Directive 2006/112/EC on the common system of VAT, *Official Journal L* 77, March, 23 2011, p. 1–22.

40. Articles 28 VAT Directive and 9a Implementing Regulation 282/2011.

41. See E.C.J., *Belgian State v Pierre Henfling and Others*, C-464/10, July 14, 2011.

42. An irrefragable presumption means that it cannot be reversed.

43. See also Article 20, § 1st Belgian VAT code which concerns supply of services.

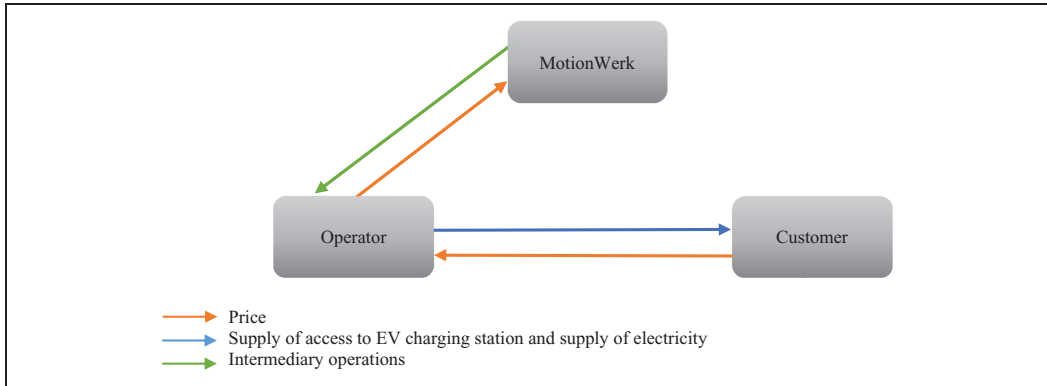


Figure 3. VAT treatment—MotionWerk is an undisclosed agent.

... where any commission agent or intermediary, acting under the conditions laid down in Article 13(2), takes part in a supply of services, he shall be considered to have received those services himself and to have supplied those services himself.

Although the terms and conditions of Share&Charge define the platform as an intermediary, it is necessary to bear in mind the case law of the European Court of Justice according to which “consideration of economic and commercial realities is a fundamental criterion for the application of the common system of VAT.”⁴⁴ In the present situation, concrete elements actually have a case for each possibility. The fact that the contract for the use of the charging station is concluded between the operator and the customer represents an argument for considering MotionWerk an undisclosed agent. On the other hand, the fact that the money received, through digital value units (“credit balances”), passes through the Share&Charge Wallet could plead for qualifying MotionWerk as a commissioner (disclosed agent). In our view, this last element should not be conferred too much weight and, therefore, MotionWerk should be qualified as an undisclosed agent. Nevertheless, for the purpose of this article, we analyze both hypotheses.

If MotionWerk is regarded as an undisclosed agent (Figure 3), operations must be treated as follows.

The taxable person for the operation of supply of access to the charging station and supply of electricity is the operator, who is required to issue an invoice. As such, he has the right to deduct VAT paid on his purchases from the VAT due for the furtherance of his business activity. Within scenario 2, where electricity is self-produced, input VAT could notably include that paid on the purchase of the PV installation and that paid on the purchase of electricity. By contrast, within scenario 1, input VAT will only comprise VAT paid on the purchase of electricity. MotionWerk provides intermediary operations to the operator, on which VAT is due. In both scenarios, input VAT paid by the operator on intermediary services supplied by MotionWerk can also be deducted.

By contrast, if MotionWerk is qualified as a commissioner (or disclosed agent) (Figure 4), the VAT treatment will be as follows.

44. E.C.J., *Her Majesty’s Commissioners of Revenue and Customs v. Paul Newey*, C-653/11, June 20, 2013. See also E.C.J. Joined Cases C 53/09 and C 55/09 *Loyalty Management UK and Baxi Group*, October 7, 2010, especially § 39 and 40.

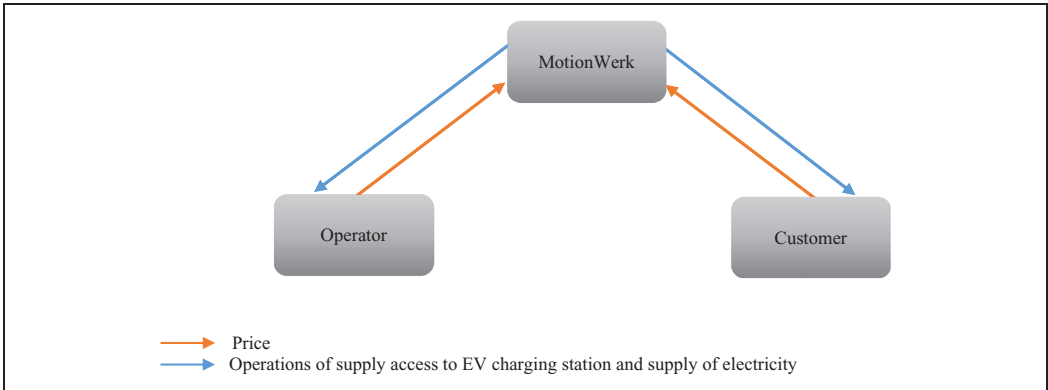


Figure 4. VAT treatment—MotionWerk is a commissioner.

VAT law creates a legal fiction of two identical supplies of services provided consecutively. Under that fiction,

the operator, who takes part in the supply of services and who constitutes the commission agent, is considered to have, firstly, received the services in question from the operator on behalf of whom it acts, who constitutes the principal, before providing, secondly, those services to the client himself.⁴⁵

This position has been followed in the Directive 2017/2455, which presumes that the platform is deemed to have received and supplied the goods itself.⁴⁶ However, this does not apply to the present case, since it is limited to cross-border situations (either intra-community sales of goods or sales of goods from third countries). *In casu*, electricity supply and the provision of access to the charging station are performed by MotionWerk for the customer. MotionWerk is regarded as the taxable person for these operations and issues the invoice to the customer. In this hypothesis, the operator performs the same transactions of supply of electricity and of access to the charging station to MotionWerk. The operator is a taxable person for these operations and will issue an invoice to MotionWerk.

Economic activity. An economic activity within the meaning of the VAT Directive is “any activity of producers, traders or persons supplying services” (Article 9 (1.)). This concept has been interpreted broadly by the European Court of Justice (see Beretta, 2018). In particular, there is an economic activity irrespective of the purpose or result of the activity; the activity does not need to be profitable to be qualified as economic. Considering this broad definition which includes most of the sharing economy models, activities of the operator of Share&Charge and of MotionWerk, who receive a compensation for the performance of their transactions, should be considered economic activities.

45. See E.C.J., *Belgian State v Pierre Henfling and Others*, aforementioned.

46. Council Directive 2017/2455 of December 5, 2017, amending Directive 2006/112/EC and Directive 2009/132/EC as regards certain VAT obligations for supplies of services and distance sales of goods, *Official Journal* L348/7, December 29, 2017. In particular, Article 2 of the Directive.

However, in Belgian VAT law, a favorable treatment applies to activities of the sharing economy, based on the premise that such activities are not economic activities. Under this scheme, the supply of services performed in the context of the sharing economy is not, upon the respect of several conditions, subject to VAT, and suppliers of these services are not taxable persons for the purpose of VAT. This favorable treatment was introduced by the aforementioned law of July 1, 2016, on the taxation of the sharing economy.⁴⁷ It requires several conditions to be fulfilled, accordingly with Article 50, § 4 of the Belgian VAT code, and notably the aggregation of the platform and a maximal turnover of 3255 Euros (to be indexed). The conditions introduced by this provision are rather fuzzy and even inconsistent with other provisions applicable to the sharing economy (Hendricks, 2016). As such, they are a source of legal uncertainty. Similar to the rules applying to personal income taxes, the scheme only applies to individuals who exclusively perform supply of services. Because the intervention of the operator of Share&Charge includes, as will be further explained, a supply of goods (electricity supply), it will fall outside the scope of this favorable scheme.

Finally, it must be noted that suppliers benefiting from this scheme are not entitled to deduct VAT paid in respect of their acquisitions, because the goods and services used for the operations are exempt from VAT (Hendricks, 2016). Indeed, deduction of input VAT is linked to the collection of output VAT. However, in some instance, suppliers might be willing to recover input VAT. For example, in the case *Fuchs* (C-219/12), the claimant—Thomas Fuchs—contested the decisions of the German authorities not authorizing him to deduct input VAT on the basis that his activities of the operation of a PV unit, installed on the roof of his home and connected the electricity grid, did not constitute an economic activity. For the anecdote, the European Court of Justice gave a broad interpretation of the concept and ruled in favor of Mr Fuchs.

Qualification of the transactions. Share&Charge implies the performance of several operations: (i) supply of electricity, (ii) supply of access to the EV charging station, and (iii) possibly the services of intermediation (when MotionWerk is considered an undisclosed agent). To determine the VAT treatment of these operations, it is necessary to assess in which of the four aforementioned categories each of them falls.⁴⁸ Electricity supply is regarded as a supply of goods (Article 15 Directive 2006/112 and Article 9 Belgian VAT code), while the supply of access to the station is a supply of a service (Article 24 and f. Directive 2006/112 and Article 18 Belgian VAT code). Both transactions are liable to a VAT rate of 21%.

Regarding intermediary services, these are governed by specific provisions (Articles 44, 50, 54, and 56 of VAT Directive). As a reminder, there will be a supply of services by intermediaries only in the event that MotionWerk is considered an undisclosed agent. Supply of services by intermediaries is specifically governed by Article 44 of the VAT Directive. Specific provisions apply with respect to the supply of transport (Article 50 of VAT Directive), supply of cultural and similar services, ancillary transport services or services relating to movable tangible property (Article 54 of VAT Directive), and the supply of miscellaneous services (Article 56 of VAT Directive). The services provided by the platform to the operator arguably constitute electronically supplied services, as referred to Article 56 of the VAT Directive. These are a distinct category of services (miscellaneous services), which include “services which are delivered over the Internet or an

47. *Infra* note 31.

48. The supply of goods, the supply of services, import, and intra-community acquisition of goods (*Infra* p. 18).

electronic network and the nature of which renders their supply essentially automated and involving minimal human intervention, and impossible to ensure in the absence of information technology” (Article 7(1) of Implementing Regulation 282/2011; see also Article 18, § 2, 16° of Belgian VAT Code). These encompass website hosting and web page hosting; automated, online, and distance maintenance of programs; remote systems administration, and so on (Annex II of Implementing Regulation 282/2011). Qualification as electronically supplied services notably has an influence in determining the place of supply (Article 56 of VAT Directive), in the case of cross-border transactions. Here, the tax base would be the usage fee paid by the operator to MotionWerk.⁴⁹

A second challenge is to assess whether the operations of supply of electricity on the one hand, and those of supply of access to the charging station on the other hand, must be interpreted as one single economic transaction, or rather as two distinct operations. Under the first interpretation, there will be a single, indivisible economic supply for the purpose of VAT—the supply of electricity—assuming that both transactions are so closely linked that it would be unrealistic to split them.⁵⁰ In this case, the price received will be taxed as a supply of goods (electricity), liable at a rate of 21%. Although this would be in contrast to the decision of the Cwape which has ruled for the purpose of license requirements that electricity supply for activities involving fast charging stations provided by filling stations must be qualified as a supply of service, VAT law concepts benefit from an autonomous interpretation.⁵¹

Alternatively, both the supply of electricity and the supply of access to the charging station could be considered an economic transaction. There will also be a single supply if one or more elements are to be regarded as constituting the principal supply, while other elements are to be regarded, by contrast, as one or more ancillary supplies which share the tax treatment of the principal supply (*accessorium sequitur principale*).⁵² In that regard, the European Court of Justice rules that the “essential features of the transaction must be ascertained in order to determine whether the taxable person is supplying the customer, being a typical consumer, with several distinct principal services or with a single service.”⁵³ *In casu*, it is necessary to consider the fact that under the terms and conditions of Share&Charge, tariffs do not only value the volume of electricity drawn (“kWh billing” or “volumetric tariffs); instead, they can also be charged irrespective of the load value and the charge state (“flat rate” or “fixed tariff”) or based on a minute-accurate time quota (“hourly”). Therefore, they also seem to value access to the charging station. In our opinion, this represents a strong argument for considering that there is a complex operation which actually consist of a supply of service rather than a supply of goods. As a consequence, the price received for the whole supply (supply of electricity and supply of access to the charging station) would be taxed as a supply of service, liable at a rate of 21%.

49. See *Infra* p. 4.

50. E.C.J., *Město Žamberk*, C-18/12, February 21, 2013; E.C.J., *Levob Verzekeringen and OV Bank*, C-41/04, October 27, 2005, especially § 22; E.C.J., *Part Service*, C 425/06, February 21, 2008, especially § 53; E.C.J., C-497/09, *Bog and Others*, especially § 53.

51. *Infra* p. 10.

52. See, for instance, E.C.J., *CPP*, C 349/96, February 25, 1999, in particular § 30; E.C.J., *Levob Verzekeringen and OV Bank*, aforementioned, § 21; E.C.J., *Bog and Others*, aforementioned, § 54.

53. E.C.J., *CPP*, aforementioned, § 29.

Comparison with the taxation of prosumers. Again, it is interesting to draw a parallel between the VAT framework applicable to Share&Charge and which applies to prosumers who produce electricity by means of a “small PV installation.” The sale of electricity and eventually the sale of the green certificates⁵⁴ received for the renewable electricity production normally represent taxable operations under VAT regulation. In order to sell the electricity surplus, it will be necessary to make use of a double meter with two European Article Numbering (EAN) codes, as opposed to a simple meter with one EAN code.⁵⁵ Under VAT law, the sale of electricity and of green certificates constitutes taxable operations: the sale of electricity is a supply of goods (Article 15 Directive 2006/112 and Article 9 Belgian VAT code), while the sale of green certificates is a supply of a service (Article 24 and f. Directive 2006/112 and Article 18 Belgian VAT code). However, the administration and the Minister of Finance (Oral questions n° 5400 et 5401 of May 20, 2008; n° 587 of July 15, 2009) interpret VAT rules to exempt the sale of electricity produced by a “small PV unit” from the payment of VAT when the electricity producer is not regarded as a taxable person for another activity (Decision n°114.454 of October 28, 2014).

More particularly, the following distinctions are made (decision n°114.454 of October 28, 2014), according to the type of counter used and to the status of the supplier:

- A simple counter or a double counter with one EAN code is used (and therefore electricity production exceeding electricity consumption cannot be compensated): the electricity injected into the grid is qualified as a supply of goods, but it is not subject to VAT if the operator is not already regarded as a taxable person for another activity. The administration considers that there is no economic activity in the sense of the VAT code. The same reasoning applies to the commercialization of green certificates. On the contrary, if the operator is already regarded as a taxable person for another activity, the operations of sale of electricity and of the commercialization of green certificates will be subject to VAT.
- A double counter with two EAN codes (and therefore electricity production exceeding electricity consumption can be compensated): the operation of electricity supply will not be subject to VAT under two conditions: the operator is not already considered as a taxable person for another activity, and the power of the installation is limited up to 10 kVa (a “small PV unit”). If the conditions are not respected, the sale of electricity will be a taxable operation (supply of goods), subject to the normal VAT rate of 21%. With respect to the commercialization of green certificates, the operation will always be a taxable supply of service, imposed at the normal VAT rate of 21%.

Conclusion and policy recommendations

Markets have entered into a digital age. Digitalization impacts most aspects of everyday life, ranging from commuting, ordering food, to renting an apartment or a car, or just chatting on the

54. See *Infra* note 20.

55. With a simple meter with one EAN code, electricity produced and electricity consumed are counted by the same meter. When electricity produced is above 0, excess electricity is not valued. With a double meter with two EAN codes, electricity produced and electricity consumed are counted separately. In this case, excess electricity can be valued. However, in practice, small electricity producers do not use such a meter. For more information, see <http://www.ef4.be/fr/pv/cadre-legal/comptage-electricite.html>, last accessed August 2, 2018.

phone. It is admittedly a source of certain abuse, but it is also a factor of progress, which creates many societal and economic opportunities. Although certain elements of these new models are certainly innovative, others are actually dated. Sometimes, “the more things change, the more they are the same.”⁵⁶ Distributed energy production, for instance, is not a new phenomenon; before electricity production and distribution was centralized, energy was generated and consumed locally (Jacobs, 2016). In the same way, there is nothing new about sharing. Throughout time, people have shared goods and services. The real novelty of digitalization is the incredibly rapid expansion of these markets, thanks to the network effect. Digitalization and platforms have enabled us to quickly connect previously unmatched demand-side and supply-side market participants on a surprisingly large scale.

In this context, the model of the Share&Charge sharing platform which lies at the crossroads between the electricity market, the transport market, and digitalization provides appealing opportunities for the deployment of EVs and of decentralized electricity production. The first part of this contribution has shown the benefits of this model and explained its functioning. However, new opportunities can create new regulatory challenges. These were presented in the second part. In particular, the focus has been on challenges in tax matters, assuming that such a scheme as Share&Charge was introduced into the Belgian market. Based on this background, we would like to provide several policy recommendations, with a view to creating proper regulation to foster models like Share&Charge.

First, uncertainties have been observed regarding the legal qualification of several elements, yet these are essential to accurately assess the tax treatment of operations associated with the use of Share&Charge. For example, the characterization of the operations performed remains uncertain. In addition, the qualification of the operator with respect to energy taxes, or of MotionWerk as a taxable person with regard to VAT, is unclear. The adoption of guidelines at the EU level, or new amendments to the existing directives could be, we believe, a first step in this direction. However, with respect to VAT, we would not follow the position taken by Article 2 Directive 2017/2455, introducing the presumption that the platform is deemed to have received and supplied the goods itself. In our view, this is not necessarily consistent with the economic reality. It was also noted that certain concepts, like the supply of goods and of services and intermediary services, occur in several distinct frameworks. Although these concepts may need to be interpreted autonomously, one should ensure the consistence of the whole system.

Second, one feature of the sharing economy is that transactions and activities are not necessarily performed by professionals. Therefore, if participants are treated just as any professional exercising an economic activity, they may be subject to an excessive administrative burden, which would risk impeding the furtherance of their activities. Within this context, a number of modifications to the current legal framework could be considered. For instance, to reduce the administrative burden associated with the qualification of a VAT-taxable person, platforms could be compelled to issue invoices in the name of the taxable persons (outsourcing), instead of exempting the operator from being a taxable person. This proposal would be more respectful of the current legal rules and definition applicable to VAT treatment. In Belgian domestic law, the legal framework on the electricity market could be modified, both at the federal and at the regional level, in order to assimilate the operator in models like Share&Charge to an end consumer, such as the regulations that have been enacted to regulate prosumers. EU regulation could encourage other member states

56. Epigram of Karr, J.B., “Les guêpes”: “Plus ça change, plus c’est la même chose.”

to do so. Furthermore, there is a case for existing actors, such as regulators or DSOs, or for new actors to play a role in assisting operators to set appropriate tariffs for the provision of electricity.

Third, income generated and operations performed by the operator do not currently benefit from any financial support. Nor do they benefit from the favorable tax scheme applicable to the sharing economy, nor from the same advantages as prosumers, without in our view due justification. Further studies appear to be required in order to assess whether financial support is needed to foster the development of such a model as Share&Charge. In addition, no distinction is made under the Share&Charge model according to whether the electricity used to charge a car comes from a renewable source or not. Another question is whether operators of charging stations should actually be rewarded by public authorities for providing charging stations, as is sometimes advocated regarding vehicle-to-grid service provision. This was not the purpose of this article, but we encourage further research in these matters.

Finally, the Share&Charge model merely involves internal relations within one jurisdiction. Indeed, the registered head office of MotionWerk is situated in the country of the users of the platform (the charging station operators and the customers). Many legal questions would arise, including those of tax base erosion, profit shifting, and of double imposition, if that was not the case. These issues also deserve due attention among scholars and policymakers.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

References

- Afschrift, T. (2016, October). *Le nouveau cadre de l'économie collaborative*. Seminar Vanham & Vanham, Brussels, Belgium, Actualités fiscales.
- Andre, M. (1992). Les limites fiscales de la gestion normale d'un patrimoine privé. *Bull. Contr.*, 719, 2275–2361.
- Aslam, A., & Shah, A. (2017). *Taxation and the peer-to-peer economy* (IMF Working Paper WP/17/187), 8 August. Retrieved August 2, 2018, from <https://www.imf.org/en/Publications/WP/Issues/2017/08/08/Taxation-and-the-Peer-to-Peer-Economy-45157>
- Bakker, S., & Trip, J. J. (2013). Policy options to support the adoption of electric vehicles in the urban environment. *Transportation Research Part D: Transport and Environment*, 25, 18–23.
- Bardhi, F., & Eckhardt, M. (2012). Access-based consumption: The case of car sharing. *Journal of Consumer Research*, 39, 881–898.
- Belk, R. (2014). You are what you can access: Sharing and collaborative consumption online. *Journal of Business Research*, 67, 1595–1600.
- Beretta, G. (2017). Taxation of individuals in the sharing economy. *Intertax*, 45, 2–11.
- Beretta, G. (2018). VAT and the sharing economy. *World Tax Journal*, 10, 1–25.

- Berkeley, N., Bailey, D., Jones, A., & Jarvis, D. (2017). Assessing the transition towards battery electric vehicles: A multi-level perspective on drivers of, and barriers to, take up. *Transportation Research Part A*, 106, 320–332.
- Botsman, R. (2013). The sharing economy lacks a shared definition. *Fast Company*. Retrieved from August 2, 2018, <http://www.fastcoexist.com/3022028/the-sharing-economy-lacks-a-shared-definition>
- Botsman, R., & Rogers, R. (2010a). Beyond zipcar: Collaborative consumption. *Harvard Business Review*, 88, 30.
- Botsman, R., & Rogers, R. (2010b). *What's mine is yours: The rise of collaborative consumption*. New York, NY: Harper Collins.
- Brouhns, I. (2014). Les certificats verts en Belgique et dans l'UE – Status questionis 2014. *Amén*, 5, 216–232.
- Brouhns, I., Haverbeke, D., & Caillol, F. (2015). Les certificats verts comme mécanismes de promotion des sources d'énergie renouvelables en Belgique: évolutions et perspectives. *RDIR*, 1, 7–24.
- Codagnone, C., & Martens, B. (2016). *Scoping the sharing economy: Origins, definitions, impact and regulatory issues* (Report of the Institute for Prospective Technological Studies, Digital economy working paper 2016/01). Retrieved August 2, 2018, from <https://ec.europa.eu/jrc/sites/jrcsh/files/JRC100369.pdf>
- De Villena, M. M., Gautier, A., Fonteneau, R., & Ernst, D. (2018, June). *A multi-agent system approach to model the interaction between distributed generation deployment and the grid* (Communication presented at the CIRED Workshop - Ljubljana, Paper 0591). Retrieved August 2, 2018, from [http://www.cired.net/publications/workshop2018/pdfs/Submission%200591%20-%20Paper%20\(ID-21486\).pdf](http://www.cired.net/publications/workshop2018/pdfs/Submission%200591%20-%20Paper%20(ID-21486).pdf).
- Gerkens, I. (2015). La promotion des énergies renouvelables en Belgique et en Europe: opportunités et contraintes – La flexibilité dans tous ses états. La flexibilité de l'accès au réseau électrique pour la production décentralisée, une approche innovante. *RDIR – TRNI*, 1, 43–55.
- GfK Belgium consortium. (2017). *Study on residential prosumers in the European Energy Union*. Retrieved August 2, 2018, from https://ec.europa.eu/commission/sites/beta-political/files/study-residential-prosumers-energy-union_en.pdf
- Graham-Rowe, E., Gardner, B., Abraham, C., Skippon, S., Dittmar, H., Hutchins, R., & Stannard, J. (2012). Mainstream consumers driving plug-in battery-electric and plug-in hybrid electric cars: A qualitative analysis of responses and evaluations. *Transportation Research Part A Policy and Practice*, 46, 140–153.
- Hall, D., & Lutsey, N. (2017). *Emerging best practices for electric vehicles charging infrastructure* (ICCT White paper). Retrieved August 2, 2018, from https://www.theicct.org/sites/default/files/publications/EV-charging-best-practices_ICCT-white-paper_04102017_vF.pdf
- Hendricks, P. P. (2016). Le régime fiscal des revenus de l'économie collaborative. *R.G.F.C.P*, 8, 11–18.
- Jacobs, S. (2016). The energy prosumer. *Ecology L.Q.*, 43, 519–580.
- Kley, F., Lerch, C., & Dallinger, D. (2011). New business models for electric cars — A holistic approach. *Energy Policy*, 39, 3392–3403.

- Liu, J., & Wei, Q. (2018). Risk evaluation of electric vehicle charging infrastructure public-private partnership projects in China using fuzzy TOPSIS. *Journal of Cleaner Production*, 189, 211–222.
- Lopes, J., Soares, F., & Almeida, P. (2011). Integration of electric vehicles in the electric power system. *Proceedings of the IEEE*, 99, 168–183.
- Marischal, B., & Ickx, F. (2016). Economie collaborative: une imposition de 10% mais un système alambiqué. *Actualités fiscales*, 32, 2.
- Meelen, T., & Frenken, K. (2015). Stop saying Uber is part of the sharing economy. *FastCompany*. Retrieved August 2, 2018, from <http://www.fastcoexist.com/3040863/stop-saying-uber-is-part-of-the-sharing-economy>
- OECD. (2015). *Addressing the tax challenges of the digital economy – Action 1. Final report, OECD/ G20 Base erosion and profit shifting project*. Paris: OECD Publishing. Retrieved August 2, 2018, from <http://dx.doi.org/10.1787/9789264241046-en>
- Plenter, F., Chasin, F., von Hoffen, M., Betzing, J., Matzner, M., & Becker, J. (2018). Assessment of peer-provider potentials to share private electric vehicle charging stations. EPub ahead of print 22 February 2018. doi:10.1016/j.trd.2018.02.013.
- Schor, J. (2014). Debating the sharing economy. *Great Transformation Initiative*. Retrieved August 2, 2018, from <http://greattransition.org/publication/debating-the-sharing-economy>
- Schor, J., & Fitzmaurice, C. (2015). Collaborating and connecting: The emergence of the sharing economy. In L. Reisch & J. Thøgersen (Eds.), *Handbook of research on sustainable consumption* (pp. 410–425). Cheltenham, UK: Edward Elgar.
- Shao, J., Taisch, M., & Ortega-Mier, M. (2016). A grey-decision-making trial and evaluation laboratory (DEMATEL) analysis on the barriers between environmentally friendly products and consumers: Practitioners' viewpoints on the European automobile industry. *Journal of Cleaner Production*, 112, 3185–3194.
- Sierzychula, W., Bakker, S., Maat, K., & van Wee, B. (2014). The influence of financial incentives and other socio-economic factors on electric vehicle adoption. *Energy Policy*, 68, 183–194.
- Steinhilber, S., Wells, P., & Thankappan, S. (2013). Socio-technological inertia: Understanding the barriers to electric vehicles. *Energy Policy*, 60, 531–539
- Tate, E., Harpster, M., & Savagian, P. (2008, April). *The electrification of the automobile: From conventional hybrid, to plug-in hybrids, to extended-range electric vehicles*. Communication presented at the SAE World Congress, Detroit.
- Täuscher, K., & Laudien, S. (2018). Understanding platform business models: A mixed methods study of marketplaces. *European Management Journal*, 36, 319–329.
- Tiberghien, A. (2018). *Tiberghien. Manuel de droit fiscal 2017-2018*. Liège, Belgium: Wolters Kluwers.
- Van Cleynenbreugel, P. (2018). Elite Taxi and Uber France: Do Member States have free reins to prohibit and criminalise ridesharing activities? In European Law Blog. Retrieved August 2, 2018, from <https://europeanlawblog.eu/2018/04/18/elite-taxi-and-uber-france-do-member-states-have-free-rein-to-prohibit-and-criminalise-ridesharing-activities/>
- Van Moorsel, J. (2013). Samengestelde prestaties voor btw: de gemiddelde klant beslist. *Algemeen Fiscaal Tijdschrift*, 3, 4–19.