

Needs and Barriers of Prosumerism in the Energy Transition Era

Ed

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Energy Transition and E-Mobility: A Difficult Combination

Manuela Giobbi and Giovanni Russo

Abstract The emergence of the sustainable development principle changed the habits and lifestyle. The regulatory framework of the energy market is oriented to the safeguard of the environmental interests and the responsible use of natural resources. It becomes functional to the satisfaction of human needs, and the people's quality of life. The transport sector constitutes one of the major causes of environmental pollution. Indeed, the E-mobility is a new segment of the energy demand and involves the necessary configuration of an electric system on the whole much more efficiently. In this article, are emphasized the ways to overcome some obstacles to the development of sustainable transport. In this key, are analysed the instruments made available by the Italian Government to encourage the purchase of electric cars and the installation of charging stations. These instruments have contributed to the development of E-Mobility. In this context, both the political planning and the legislator must continue to be proactive, providing incentives to the electrification of vehicles, disincentives to the use of polluting cars, and support to the private and public installation recharging points.

1 Energy Transition, Clean Energy for All European and Climate Change

To promote the energy transition and mitigate the effects of *climate change*, the European Union is committed to developing a sustainable, competitive, safe and decarbonised¹ energy system.

The development of the energy market is indeed more and more oriented towards the safeguard of the environmental interests and the responsible use of natural resources, which pacing themselves in a 'unified experience',² become functional to the improvement of life, to the satisfaction of human needs, including those of the future generations.³

In balancing the different interests related to the use of energy, it becomes fundamental to innovate the energy system both through the implementation of innovative and sustainable models, and the sharing of 'energy as a good'. The need for preserving and improving the environment, by the protected interest's public nature,⁴ goes therefore to enter the register of solidarity between the Member States and of the

¹ The Energy Union should cover five dimensions: the energy security, the internal energy market, energy efficiency, the decarbonisation process, the research, the innovation and competitiveness, see Recital 2, Regulation (EU) 2018/1999 of the European Parliament and the Council, on the Governance of Energy Union and Climate Action, in OJ L 328/121, December 2018; Recommendation (EU) 2019/786 of the Commission of 8 May 2019 on building renovation, in OJ L 127/34, 16 May 2019.

² On this matter see, P. Perlingieri, 'Persona, ambiente e sviluppo', in M. Pennasilico ed, *Contratto e ambiente. L'analisi 'ecologica' del diritto contrattuale*, (Napoli: Edizioni Scientifiche Italiane, 2016) 328-330.

³ See Report of the World Commission on the Environment and Development, so-called Brundtland Report, 'Our Common future, Report of the World Commission on Environment and Development', United Nations, 1997.

⁴ N. Lipari, 'Introduzione', in M. Pennasilico ed, n 2 above, 15-18.

development of the human person (article 3 of the Constitution of the Italian Republic).

An energy market aimed at decarbonisation needs an actual transition to productive forms more variable and decentralized which incentivise the use of renewable sources. As highlighted under Recital 3 of the Directive 2018/2001/EU, the rational use of natural sources can be fundamental to ensure sustainable energy to the citizens at affordable prices. Equally, the Directive 2018/2002/EU highlights that the improvement of energy efficiency is functional to the environment, it improves the air quality and public health.

The inclusion of intervention in the matter of energy efficiency in the wide context of redefinition of the energy market constitutes one of the most innovative aspects of the cultural, behavioural and technological transformation.

The correlation between the energy sector and the environment, considered in unitary terms, finds response also in article 194 TFEU in the context of the establishment and functioning of the internal market. The improvement of energy efficiency and the use of renewable energy strengthen, indeed, the link between the internal market creation and the environmental sustainability policies of the European Union, in a perspective functional to the achievement of the aims provided for in the agreements for the attenuation of issues arising from climate change. In this respect, it is entrusted to the Union a specific and autonomous competence for the coordination between the use of renewable sources, the improvement of air quality, public health, and more generally the people's quality of life.

With the approval of the legislative proposals included in the Clean Energy for All Europeans⁵ (so-called Winter Package), the European Union introduced a regulation aimed to encourage the use of renewable sources, the energy efficiency of the built environment, market innovation and to ensure the fulfilment of the agreements resulting from the Paris Agreement⁶ for the reduction of polluting emissions.

In this regard, the Regulation (EU) 2018/1999 dictated a regulatory framework aimed to promote the achievement, by the Member States, of the binding targets established at European level on the energy and climate, which, however, are necessarily placed

⁵ The Clean Energy for All Europeans or 'Winter Package', available at <https://ec.europa.eu> (last visited 21 November 2020), is the package of legislative proposals consisting of communications, regulations and guidelines Proposals which represents one of the most significant intervention in the sector such as the energy efficiency, the development and integration of renewable energy.

⁶ The Paris Agreement is the first-ever universal, legally binding global climate change agreement, adopted at the Paris Climate Conference (COP21), December 2015, in the United Nations, FCCC/CP/2015/10/Add.1, Distr. General 29 January 2016, available at <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement> (last visited 21 November 2020).

within a 'long term strategy'.⁷ However, these purposes must also be considered taking into account the provisions of the European Green Deal⁸ regarding the prospects indicated for the complete decarbonisation of the system.

The European Green Deal, in reiterating the commitment of the Union towards climate problems, affects the innovation, energy-saving, economic vulnerability of the users⁹ and sustainable mobility. In particular, the Commission highlights the need to rethink the policies for the supply of 'clean energy' in each sector of the economy so that the transition to 'climate neutrality' becomes irreversible. Therefore, the productive activities of the green energy¹⁰ supply chain are called upon to play a key role in the realisation of an energy transition model which aims to combine technological innovation with the respect for the environment.

2 Environmental Sustainability and E-mobility

The recent Directives 2019/944/EU¹¹ and 2018/2001¹² introduced new systems of individual and collective energy self-production to create a market which could satisfy user and climate change requirements. In particular, energy communities¹³ are an effective and economically efficient way to satisfy society's needs and citizens' expectations.¹⁴ The energy communities have indeed a specific connotation of solidarity and precisely for the connection with the territory in which they are intended to operate, they are functional to the creation of both social and environmental benefits.¹⁵ Energy communities, through the generation of clean energy, constitute a reasonable answer or however an effective contribution to the reduction of harmful emissions, to the use of renewable sources and the

⁷ See 'Memoria dell'Autorità di regolazione per energia reti e ambiente nell'ambito dell'indagine conoscitiva sulle prospettive di attuazione e di adeguamento della Strategia Energetica Nazionale al Piano Nazionale Energia e Clima per il 2030, 513/2019/I/COM', 'Memoria per la X Commissione Attività produttive della Camera dei Deputati', 4 December 2019, available at www.arera.it (last visited 23 November 2020).

⁸ See 'The European Green Deal', Bruxelles, 11 December 2019, COM(2019) 640 final, available at <https://eur-lex.europa.eu/legal-content/IT/TXT/?uri=CELEX:52019DC0640> (last visited 9 December 2020).

⁹ On the users' vulnerability see, L. Ruggeri and M. Giobbi, 'Vulnerabilità economica tra diritto emergenziale e contrattuale. Economic Vulnerability between emergency and contract law' 12 *bis* *Actualidad Jurídica Iberoamericana*, 342-351 (2020).

¹⁰ See, 'Green Energy. Il sostegno alle attività produttive mediante generazione, accumulo e auto-consumo di energia elettrica', 10th Commissione, Industria, Commercio, Turismo, Ufficio Valutazione Impatto', Senate of the Republic, XVIII Legislature, March 2019, available at www.senato.it (last visited 26 November 2020).

¹¹ Directive 2019/944/EU of European Parliament and the Council of 5 June 2019 on common rules for the internal market for electricity [2019] OJ L 158/125.

¹² Directive 2018/2001/EU of European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources [2018] OJ L 328/82.

¹³ See article 42 *bis*, decreto legge 30 December 2019 no 162, converted legge 28 February 2020 no 8, *Gazzetta Ufficiale* 29 February 2020, no 51, no 10/L.

¹⁴ Recital 43, Directive 2019/944, above 11.

¹⁵ See Recital 67, Directive 2018/2001, above 12. On this matter see M. Pennasilico, 'Sviluppo sostenibili e "contratto ecologico": un altro modo di soddisfare i bisogni' *Rassegna diritto civile*, 1293-1299 (2016); P. Perlingieri, 'La sussidiarietà nel diritto privato' *Rassegna di diritto civile*, 687-689 (2016).

electrification of transports.¹⁶ As indicated in the European Green Deal, the transport sector constitutes one of the major causes of environmental pollution. Therefore, electric mobility, as specified in Recital 87 of the Directive 2018/2001, will be a very meaningful aspect in the matter of energy produced from renewable sources. The need to increase the development and spread of electric mobility is also highlighted in Recital 86 of the Directive 2018/2001. In this regard, the 'Energy-Climate Integrated National Plan' (PNIEC)¹⁷ provides for very quick development of electric mobility which will have a relevant impact on the evolution of the energy system.

The spread of electric vehicles indeed brings along with it not-trivial needs, such as the creation of a charging points network which, as indicated by the 'Autorità di Regolazione per Energia Reti e Ambiente' (ARERA), involves the necessary configuration of an energy system on the whole much more efficient. It is a new segment of energy demand.

To take advantage of the environmental sustainability that vehicles electrification can offer and to optimize the efficiency of the energy system in the mobility, might be particularly important the prediction of smart charging systems which allows guiding the charges towards most suitable time slots and areas.¹⁸ In any case, the charging services installed in inaccessible locations to the public constitute an activity which must take into account and must develop in conditions of competition between the different operators. Recharging energy prices are indeed affected by market dynamics. Moreover, as indicated by the authorities of the sector, it should also be allowed to make transactions through the ordinary payment instruments. Such means of access to the points of withdrawal and payment of prices could allow equal access to the charging services for all users.

3 Obstacles to the Development of Sustainable Mobility

Electric mobility development comes within an even more futuristic project, creating a Smart City of intelligent cities where each technology is interconnected and in a continuous exchange of information. In this perspective, the transition towards electricity is nothing but an obligatory stopover for attaining the European and international objectives. The design of Smart cities allows overcoming difficulties of economic, environmental, and social nature, which dominate the scenarios of the principal European cities. The implementation of new technologies will increase both the use of energy sources and GNP. As highlighted by the doctrine, the GNP does not

¹⁶ The Recital 87, Directive 2018/2001/EU states that by 2030 the e-mobility will be a significant part of renewable sources of energy in the transport sector.

¹⁷ See, 'Piano Nazionale Integrato Energia-Clima (PNIEC)' available at www.mise.gov.it/index.php/it/2040668 (last visited 9 December 2020).

¹⁸ On the point see, 'Memoria 41/2020/I/EEL, Memoria dell'Autorità di Regolazione Energia e Ambiente' about the draft law laying down 'Modifiche al decreto legge 4 June 2013, no 63', converted, with amendments, by Law 3 August 2013, no 90, in matter of tax benefits to encourage the spread of vehicles powered by electric energy (AC 1973), 'Memoria per la VI Commissione Finanze' della Chamber of Deputies, 18 February 2020, available at www.arera.it (last visited 15 November 2020).

depend only on industrial growth but must be functional to people's development.¹⁹ The emergence of the sustainable development principle changed the habits and lifestyle. Today, we discuss sustainability on an environmental, social, and economic key, but the actions and technological innovations should respond to the sustainability principle.

This is because the environment is to be considered as 'life' to protect where the human being develops his personality.²⁰

The combination of human needs and sustainability has highlighted the need to change habits.

In this way, it has come to talk about intelligent mobility intended as technologically advanced and sustainable mobility, which reduces the pollution of CO₂. The objective of this evolution is the environmental protection²¹ promoted from the 70s²² and from

¹⁹ The process of industrialization began at the end of the last world conflict. The country's exponential growth caused a radical change in habits and, in general, in the lifestyle. Think, for example, about the repercussions in the field of the economy with the increase of the level of employment and the consequent greater per capita spending capability; the improvement of the quality of life; the advantage of producing the same good quantities both in the least time and the minor cost.

²⁰ In this regard read P. Perlingieri, 'Persona, ambiente e sviluppo', in M. Pennasilico ed, *Contratto e ambiente. L'analisi "ecologica" del diritto contrattuale*, (Napoli: Edizioni Scientifiche Italiane, 2016), 321-324. In another work, the same author underlines that 'the qualitative profile of a society is not measured in proportion to the increase of the GNP but to the increase of the critical capacity, to the study level reached by the people who live in that society, to the way in which they participate to the life of the city, and of the community. It would be desirable that, in the face of a lower GNP, our nation records a qualitative increase of the individual and the community. Hence the necessity to invest in the school, the information, the formation, the structure of other knowledge, as the only way which leads to the direction of the *homo sapiens* more than to the *homo oeconomicus* one', so in P. Perlingieri, 'I diritti umani come base dello sviluppo sostenibile. Aspetti giuridici e sociologici' *Rivista Giuridica del Molise e del Sannio*, 11-17(2000). Still can be read P. Perlingieri, *La persona e i suoi diritti. Problemi del diritto civile*, (Napoli: Edizioni Scientifiche Italiane, 2005), 76; P. Perlingieri, 'Produzione, beni e benessere', in G. Calabresi et al *Benessere e regole dei rapporti civili. Lo sviluppo oltre la crisi, Atti del 9th Convezione Società Italiana Degli Studiosi del Diritto Civile in memoria di G. Gabrielli, Napoli 8-10 Maggio 2014*, (Napoli: Edizioni Scientifiche Italiane, 2015), 509-516.

²¹ Nowadays the definition of environment is not defined yet. Anyway, it is possible to find a definition in article 2, (10), of the Convention on the civil responsibility of the damage resulting from activities dangerous for the environment. The convention defines the environment as the set of natural sources both abiotic and biotic, such as air, water, soil, fauna and flora and interaction between the same factors; the property which is part of the cultural heritage and the characteristics aspects of the landscape. To deepen read the Manual on Human Rights and Environment, Council of Europe Publishing, Strasburgo, 2012, 15 available at https://www.echr.coe.int/LibraryDocs/DH_DEV_Manual_Environment_Eng.pdf (last visited 9 December 2020).

²² Among the many, we remember the Convention on the Long-Range Transboundary Air Pollution of 11 June 1981, 81/462/EEC of the council. Again, the protocol of Göteborg in 1999 to reduce acidification, eutrophication, and tropospheric ozone. The protocol was signed by all member States on 13th June 2003, Decree 2003/507/EC of the council.

which was followed by a variety of regulatory instruments that aim to reduce pollution drastically.²³

The road transport includes cars, vans, heavy vehicles, buses, and rail transport, contributing three quarters to CO₂²⁴ emissions. Hence the need also arose from the report of the Intergovernmental Panel of Experts on Climate Change - IPCC -, to aim for 'zero emissions' by 2050.²⁵ Along the path of electric car development, there have been obstacles to its spread²⁶ in the past as in the present. It would seem attractive to specify that the current electric vehicles represent the prototype's evolution, dating back to the 1800s.

Therefore, the same obstacles continue to exist, such as the lack of appropriate infrastructure, on the one hand, the high cost of the electric vehicle caused, in part, by the price of the battery and its life, on the other hand. It follows that the overcoming of the issues cannot be sectoral, but necessarily multidisciplinary. The required competencies are specific, and the solution is not attributable to a unique. However, it will be the set of transversal competencies²⁷ - engineering, legal, economic, and sociological - that will offer satisfying solutions.

4 'Eco Bonus' and 'Green Tax': A Right Compromise?

The legislator is uncertain whether to introduce a rule that can regulate the case taken into an exam or wait for better times to evolve the new technologies to support the E-Mobility development. It is certain that waiting for an ad hoc regulation, the legislator is, at least, called to offer a solution to the juridical overcoming of obstacles.

In this regard, several legislative instruments are enacted to encourage the use of electric cars - EV o BEV - and to discourage the purchase of fossil-fuelled vehicles that exceed the threshold of 160 g/km²⁸ CO₂.

²³ In this sense and to deepen read A. Castelli, 'Riduzione dell'inquinamento e miglioramento della qualità dell'aria: l'impatto della Direttiva Ue 2016/2284' *Ambiente e sviluppo*, 211, (2020).

²⁴ To deepen read V. Aneris and C. Calvo Ambel, 'La decarbonizzazione del settore trasporti Europeo ed italiano entro il 2050', in A. Donati ed, *Politiche di mobilità e qualità dell'aria nelle 14 città e aree metropolitane 2017-2018*, (2019), 36 available at https://www.kyotoclub.org/medialibrary/Libro MOB2019_digital_sm.pdf (last visited on 22 November 2020). As well as 'The future of sustainable passenger transport' available at [www.europarl.europa.eu/RegData/etudes/note/join/2010/431579/IPOL-TRAN_NT\(2010\)431579_IT.pdf](http://www.europarl.europa.eu/RegData/etudes/note/join/2010/431579/IPOL-TRAN_NT(2010)431579_IT.pdf) (last visited 8 December 2020).

²⁵ It refers to the study IPCC which is available at <https://ipccitalia.cmcc.it/ipcc-special-report-global-warming-of-1-5-c/> (last visited 8 December 2020).

²⁶ The decrease of the oil price, on the one hand, the issues related to the inadequacy of the infrastructure and the battery life, on the other, led to a gradual abandonment of the electric car in favour of the combustion engine.

²⁷ In this sense and to deepen see P. Perlingieri, 'Produzione scientifica e realtà pratica: una frattura da evitare' in P. Perlingieri, *Scuole tendenze e metodi. Problemi del diritto civile* (Napoli, Edizioni Scientifiche Italiane, 1989), 1-25.

²⁸ In this sense see article 1, paragraph 1042, legge 30 December 2018 no 145.

Given an energy transition that aims to reach high standards of CO₂ reduction by 2030²⁹ and the total decrease by 2050, the individual States must be committed in the front line to encourage the purchase of the new technologies.

Legge 30 December 2018 no 145³⁰ (so called 2019 budget law) and Decreto Ministeriale no 20 of 2019, article 1, paragraphs 1031-1038,³¹ decreto legge 19 May 2020 no 34, article 44, so-called 'decreto Rilancio', signed into law 17 July 2020 no 77,³² decreto legge 14 August 2020 no 104, article 74,³³ and decreto legge 30 December 2019 no 162 so-called 'decreto Milleproroghe', signed into law 2 February 2020 no 8³⁴ have foreseen several incentives to purchase electric vehicles, discouraging the purchase of the classic car. The national legislator aims to reduce the EV's purchase price and convince the user to convert to electric. In particular, the sums put at disposal will be distributed according to criteria that consider the CO₂ emissions of the vehicle. The Italian legislation has foreseen three different incentives: 50 million have been allocated for emissions from 0 to 60 g/km; 150 million for emissions from 61 - 90 g/km and 100 million for emissions from 91 to 110 g/km. The latter result so far has already sold out. A common element for all the types concerns the purchases from the 1st July 2020 to 31st December 2021. The first category is divided into two subcategories depending on whether a car with emissions is lower/equal or higher to 20 g/km. At the same time, the price must not exceed 50 thousand euros. In the first case, the incentive amounts to approximately 8000 euros if a car registered for at least ten years³⁵ is scrapped and the dealership applies a discount of 2000 euros; in the second case, the same rules as the first will apply, but the incentive amount to approximately 4000 euros.³⁶

In the second and third category, the incentives are provided to purchase vehicles with a maximum cost of 40 thousand euros. Unlike the first, there is no 'eco bonus', but only the 'discount' applied from the dealership can vary from 1750 to 750 euros.

In parallel to the national forecasts, some regions - Lombardy, Piedmont, Sardinia, Trentino-Alto Adige - have provided further 'eco bonus'. Lombardy's³⁷ incentive was of particular importance as it turns out to be the highest support and equal to 8000 euros for the purchase of fully electric cars.³⁸ The possibility to take advantage of the regional incentive ended last September. Equally impressive is Piedmont's case, which

²⁹ It refers to the Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources which amended the directive 27/2012 introducing the objective of reducing CO₂ pollution by 20% by 2020 and by 32,5% by 2018.

³⁰ See *Gazzetta Ufficiale* 31 December 2018, no 302.

³¹ See *Gazzetta Ufficiale* 6 April 2019, no 82.

³² See *Gazzetta Ufficiale* 21 May 2020, no 128.

³³ See *Gazzetta Ufficiale* 14 August 2020, no 203.

³⁴ See *Gazzetta Ufficiale* 29th February 2020, no 51.

³⁵ The lack of a scrap determines a loss of 2000 euros.

³⁶ Here too the lack of scrap will reduce the 'eco bonus' by 1000 euros.

³⁷ For further insights see <https://www.regione.lombardia.it/wps/portal/istituzionale/HP/aria/inc-entivi-e-agevolazioni> (last visited 5 December 2020).

³⁸ From 4000 to 6000 euros for vehicles with emissions below 60 g/Km; from 3000 to 5000 euros for vehicles with emissions between 60 and 90 g/Km and from 2000 to 4000 euros for vehicles with emissions between 96 and 130 g/Km.

with a dedicated call last October, provided an incentive of up to 10.000 euros depending on the emission classes of the vehicle.³⁹

Conversely, the recourse to the use and purchase of polluting vehicles has been discouraged from introducing the so-called green tax calculated depending on the vehicle's emissions.⁴⁰

Besides, support has been provided for the maintenance of the electric car, aiming to amortize further the cost of purchasing an EV. Think of the free parking spaces on blue lines;⁴¹ in article 1, paragraph 103, of the budget law of 2019, which introduced paragraph 9-bis (Gorbino bis) to article 7 of the highway code.⁴² This provides for the creation of Limited Traffic Zones - LTZ - where both the electrically-powered and the hybrid vehicles are admitted for free.

Further incentives concern the total exemption for the first five years of the road tax and 75% from the sixth year. However, some regions make an exception. Think of the Piedmont region, which provided for the permanent exemption from the payment of the car tax for the BEV vehicles; the Emilia Romagna where the incentive was not foreseen in the form of exemption from the road tax, but as an equivalent three-year contribution and the Tuscany which has not provided for exemptions. The differentiation of the incentives concerning the road tax raised considerable problems, and the issue has come before the Constitutional Court, which, by judgment no 122 of 20th May 2019,⁴³ declared the regional autonomy on the condition not to increase the tax burden than the state's maximum levels.

Lastly, in some Italian cities, Rome from 2024 and Milan from 2030, total entry blocks for polluting vehicles have been planned. At an international level, instead, the combustion car has been banned by various States: 2025 for Norway and Holland; 2030 for Sweden, Denmark, Germany, India, Brazil; 2035 for Italy, Belgium, Ireland, UK, California (US); 2040 for France, Spain, and Austria. Thus, some car

³⁹ See <https://bandi.regione.piemonte.it/contributi-finanziamenti/incentivi-mobilita-sostenibile-de-i-cittadini-piemontesi-prqa> (last visited 8 December 2020). The citizens of Piedmont could have submitted an application starting from 28th October 2020 at 9.00, until 30th April 2021 at 12.00. Well, the interesting incentives have made that the regional funds made available are already depleted. The forecast for the renewal of polluting vehicles was equal to 1.100.000 euros. On 19th November 2020, the application received amounted to 7.249.500 euros. For further information visit the website <https://www.finpiemonte.it/bandi/dettaglio-bando/contributi-mobilita-sostenibile-piemonte-privati> (last visited 20 November 2020).

⁴⁰ For emissions between 161 and 176 g/Km the tax will amount to 1100 euros; for emissions between 176 and 201 g/Km the tax will amount to 1600 euros; for emission between 201 and 251 g/Km the tax will amount to 2000 euros and, lastly, for emissions higher than 251 g/Km the tax will amount to 2500 euros. Logically the cars with emissions between 0 and 161 g/Km such as electric cars, the majority of the hybrids, and the city car with low emissions are excluded.

⁴¹ Think, for example, of the monthly cost of a car park in Rome (about 70 euros) which, multiplied by 12 months, can exceed the cost of the automobile liability insurance.

⁴² In this sense article 9a states that 'In delimiting the areas referred to in paragraph 9 the municipalities allow, in any case, open access to these areas to electrically-propelled or hybrid vehicles'.

⁴³ The sentence is available at www.Pluris.it (last visited 8 December 2020).

manufacturers, especially in Europe, have blocked the sale of fossil fuel cars such as Smart, which will only be manufactured full electric.

5 Incentives for buying charging stations. Conclusions

Through the legislative examination just made, the juridical category has undoubtedly made a useful contribution to overcoming the obstacle related to the electric vehicle's cost. However, the encouragement in purchasing electric cars raises another problem concerning the electric infrastructure's electricity supply. Undeniably, there are different legislative instruments provided both by the national and the European legislator. However, the infrastructure presents two problems: the energy supply, on the one hand, and the demand, on the other. For the latter category, for several years, the legislator has foreseen numerous incentives that complement those listed above.

To overcome the obstacles to developing a correct transition, the lawmaker has endeavoured to introduce regulatory instruments to overcome the barriers tied to the infrastructure and, in particular, some charging stations.

The legislator must pay more attention to the charging points in private homes since most recharging occurs in their own homes. In this sense, the budget law 2019, in article 1, paragraph 1039, introduced article 16 ter⁴⁴ in the decreto legge 4 June 2013 no 63. This disposition, entitled 'Tax deductions for the purchase and the installation of recharging infrastructures for vehicles powered by electric energy', grants a deduction from the gross tax for expenses documented from 1 March 2019 to 31 December 2021 concerning the purchase and installation of recharging infrastructures for electric vehicles. It is also included in the incentive the cost of the demand to increase the power up to 7 kW. The condition for taking advantage of the 50% incentive concerning the expense incurred concerns the purchase of charging stations which do not cost more than 3000 euros, and which will be divided into ten annual refunds of the same amount. Simultaneously, it has been provided with a tax refund of 110% for the installation and charging stations' implementation. For the tax deduction to take place, the facility must be done together with the provision of article 119, paragraph 1, of decreto legge no 34/2020.

⁴⁴ Article 16-ter states that 1. It is granted to the taxpayers a deduction from the gross tax, up to its amount, for the documented expenses incurred from 1 March 2019 to 31 December 2021 relating to the purchase and the installation of recharging infrastructures for electrical energy powered vehicles, including the initial costs for the extra power demand up to a maximum of 7kW. The deduction referred to in this paragraph, to be distributed among the persons entitled in ten annual fees of equal amount, is due to the extent of 50% of the expenses incurred and it is calculated on a total amount which does not exceed 3000 euros. 2. The recharging infrastructures referred to in paragraph 1 must have one or more recharging points with standard power not accessible to the public according to article 2, paragraph 1, point d) and h), of the decreto legislativo 16 December 2016, no 257. 3. The deduction is also applied to the documented expenses remaining to the taxpayer, for the purchase and installation of recharging infrastructures referred to in paragraph 1 on the common parts of the condominium buildings of articles 1117 and 1117a of the Civil Code.

Finally, relevant news has also been introduced from the decreto legge 16 July 2020 no 76, so-called 'decreto Semplificazioni', signed into legge 11 September 2020 no 120,⁴⁵ where article 57 defines and disciplines the installation of recharging infrastructure in specific parking areas, both public and private, simplifies their realization. In particular, what is new is paragraph 2 bis, which states that 'recharging the electric vehicle, by analogy with the provisions of decreto legislativo 16 December 2016, no 257, for the public charging, is to be considered a service and not a supply of electric energy'.

Next to incentives, the European and national legislator has imposed some obligations, and, in this sense, it is essential the legislation concerning the new construction works. Think of the installation of recharging stations 'for all the newly-built residential buildings with at least ten residential units, for several parking spaces and car boxes not lower than 20% of the total'. The aforementioned legal provision is included in the decreto legislativo no 257/2016.⁴⁶ Instead, the following intervened: the budget law 2019; the decreto legislativo 10 June 2020 no 48⁴⁷, which transposed the directive 2018/844;⁴⁸ the 'decreto legge no 34/2020.

Decreto legislativo no 48/2020 has set the new buildings' obligation, or substantial renovations started since 10 March 2021 to provide for the installation of at least a recharging point for all the non-residential buildings with at least twenty parking places by the end of 2024.⁴⁹ Also, article 16 deserves to be mentioned because it forces the municipalities, within 180 days from the entry into force of the decreto legislativo no 48/2020, to adapt the building regulations and to provide, to issue the residential building license, for the obligation both for residential and non-residential buildings, for those newly built or for which a necessary renovation is expected, to respect the technology integration requirements for the charging of electric vehicles in the buildings.

The set of principles enclosed in sustainable mobility development has made the issue increasingly important over the years. Proof of this is the legislators' interest from various countries⁵⁰ to promote green mobility and orientate towards reducing

⁴⁵ See *Gazzetta Ufficiale* 14 September 2020, no. 228.

⁴⁶ For further information see the *Gazzetta Ufficiale* 13 January 2017, no. 10.

⁴⁷ It is possible to read the decreto legislativo in the *Gazzetta Ufficiale* 10 June 2020.

⁴⁸ The directive is available in the OJ L 156/75, June 2018.

⁴⁹ In this sense and for further information see I. Meo, 'Gli incentivi all'installazione delle colonnine elettriche in condominio' *Immobili e proprietà*, 634, (2020).

⁵⁰ Also, on the European side incentives aimed to overcome the electric vehicle cost have been envisaged. In this sense please note Germany provided for the period 2016-2019 a so-called environmental bonus which includes the tax subsidy of 2000 euros to purchase an electric car and an incentive of 1500 euros to purchase a hybrid car with emission up to 50g/Km of CO₂. In both cases, the cost of the vehicle must not exceed 60.000 euros. From 2020 to 2021 the German Federal State envisaged the doubling of the previously provided incentives. There are two exceptions: the first concerns the cost of the electric car which cannot exceed 40.000 euros, the second, instead, concerns the premium electric models for which a maximum cost of 65.000 euros has been established. Again, the United Kingdom has provided for a discount of up to 4.500 pounds to purchase both fully electric and hybrid cars with an autonomy of at least 113 km in full

CO₂⁵¹ emissions. In particular, the Italian State's effort to encourage both the purchase of EVs and the installation of recharging stations determined growth of the registrations and increasing interest from the users who more and more numerous decided to convert themselves to the electric.⁵²

In light of this, although the diversity of the incentives promoted an initial overcoming of the E-Mobility barriers, they are not yet sufficient to achieve the objectives set at the European and international level concerning the reduction of CO₂. In this context, both the political planning and the legislator must continue to be proactive, providing incentives to the electrification of vehicles, disincentives to the use of polluting cars, and support to the private and public installation recharging points.

electric modality and with emissions lower than 50g/Km of CO₂. Regarding instead, the plug-in hybrids with a battery of more than 16 km and emissions lower than 75 g/Km of CO₂, an incentive of 2500 pounds has been provided. Lastly, France provided for a contribution of 6000 euros for electric and hybrid vehicles with emissions lower than 20 g/Km of CO₂ and 1000 euros for vehicles with emissions from 21 to 60 g/Km of CO₂. Further, the French State provided for a scrapping incentive for diesel vehicles, registered for at least 11 years, equal to 4000 euros for the purchase of electric vehicles and 2500 euros for the plug-in hybrids. Other incentives to the transitions are the cancellation of the road tax for the fully electric cars while for the hybrids with emissions lower than 110 g/Km the exemption will last for the first two years. On the other side, which is the incentives to increase the charging stations, Germany in the three-year period 2017/2020 has allocated 300 million intending to stimulate and encourage the installation of recharging infrastructures both in alternating current AC and indirect current DC. The other States such as France have provided a tax credit of 30% for residential installations. Sweden, instead, incentives of 50% and no more than 960 euros, for the purchase and installation of a wallbox.

⁵¹ A study conducted at an international level from the Boston Consulting Group highlighted the increase in sustainable and intelligent mobility in the coming years. The study conducted is available at <https://www.bcg.com/it-it/industries/automotive/center-mobility-innovation/default> (last visited 1 December 2020).

⁵² The outcomes of the pro-mobility policies - 'eco bonus', Eco-tax, LTZ introduction, free parking spaces, and reduction of the road tax - led to the increase of electric vehicles. The National Union of Foreign Motor Vehicles Representatives has developed some data concerning the national registration of EV. The results showed an increase in April, June, and September - when the 'eco bonus' has been introduced - and subsequently in September 2020 - thanks to the strengthening of the same. To learn more, see the report at http://www.unrae.it/files/Book%20UNRAE%202019_5e81efee08ac9.pdf (last visited 23 November 2020).