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Companies and energy transition: The stakes of mobility. A case study in the cities of Lille and Lyon

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Abstract. Regarding energy transition in the area of mobility, the literature gives prominence to two types of actor which appear to play leading roles: public authorities and households. However, the role played by companies in this energy transition appears to have attracted only marginal attention. Nonetheless, companies influence mobility through the transport of goods, professional travel and commuter trips they generate. If they participate in the growth of this mobility, might they not also contribute to reducing it? What is the viewpoint held by companies regarding these questions? The aim of this article is to highlight the stakes of this energy transition in the domain of mobility in order to represent the viewpoint of companies. The results show that company managers are effectively concerned by the stakes of energy transition in the domain of mobility and that they have already taken measures in favour of more sustainable mobility. But this is more for economic (increased transport costs) and social (recruitment problems, turnover linked to the increased cost of car mobility) reasons than for environmental ones (reduction of greenhouse gas emissions).

1. Introduction

Mobility is a central issue of energy transition due to its contribution to the rarefaction of fossil fuel resources and climatic warming.

The development of the mobility of goods and people relies on the intensive consumption of fossil fuel resources. The sector of transport consumes more oil than any other worldwide: it is the source of 62% of world consumption [1]. It also represents the sector most dependent on this energy, since 95% of the energy consumed in the transport sector comes from oil [2]. However, since oil is a non-renewable energy source, by definition its reserves are limited and its production will decrease in the near future. Although subject to much debate, the *oil peak*, that is to say the moment when oil production reaches its maximum, should occur during the decade 2020–2030. In addition, oil reserves are insufficient to satisfy the demand for increased mobility in developing countries, particularly China and India, bringing about the risk in the longer term of periods of increases in the oil prices and thus those of fuel.

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The development of the mobility of goods and people also contributes to climatic warming through greenhouse gas emissions. The transport sector is the second largest emitter of such gases in the world: it is the origin of 22% of worldwide CO_2 emissions [1]. The reduction of CO_2 emissions generated by mobility has therefore emerged as a strategic challenge in the fight against climatic change.

Two types of actor appear to play a leading role in initiating energy transition in the area of mobility: public authorities and households. Public authorities are responsible for impelling energy transition through the formulation and implementation of public policies aimed at promoting more sustainable mobility at international, national and local levels. For example, these policies consist in improving the efficiency of vehicles regarding fuel consumption and CO_2 emissions, in favouring modal transfer and in developing an alternative supply of transport (urban public transport, bicycle lanes, railways, navigable waterways, multimodal platforms), in combating urban sprawl, etc. [3]. As for households, they can embark on energy transition by changing their practices regarding mobility: by reducing individual car-use (car-pooling, car sharing), by using other types of vehicle (hybrid, electric and gas driven vehicles) or other modes of transport (walking, cycling, public transport, etc.).

The meagre amount of information available on the action taken by companies leads to thinking that they play a secondary role in energy transition, except of course automobile constructors and transport companies. However, companies impact on mobility through goods transport, professional journeys and the commuter trips made by their employees. They contribute to the growth of these forms of mobility through the ways their production is organised around small and geographically scattered production units, by increased recourse to subcontracting, by setting up just-in-time production in order to reduce stocks, and by their choice of localisation which often favours peri-urban installations (enterprise parks, etc.). However, companies can also contribute to reducing mobility. They can do this by defining new modalities of work organisation within the enterprise capable of reducing the needs for obligatory mobility (use of teleworking, videoconferences, etc.), by setting up a policy of sustainable development capable of leading to a change in mobility behaviour (by organising company and inter-company mobility plans [4], by choosing more environmentally friendly professional vehicles, by providing incentives to using alternative transport in the framework of business trips, etc.).

At present, we lack knowledge on the way companies consider energy transition in the area of mobility. However, this transition could involve major challenges for them. Wouldn't higher gasoline prices, for example, weaken them even further in a period of economic crisis? Wouldn't this increased cost of mobility also be an additional burden on their payroll, since their employees have no alternative to the car to travel to work? Couldn't it lead in the longer term to problems of recruitment and employee loyalty for companies located far from urban centres and only accessible by road? Confronted by the growing attention given to the social and environmental responsibility of companies, do the latter take measures to limit the CO_2 emissions generated by the mobility they make necessary? Lastly, can this perspective of energy transition in the area of mobility lead companies to modify their strategies of localisation and drive them to opt for more central locations?

The objective of this article is to highlight the stakes that energy transition in the area of mobility may represent from the viewpoint of companies. Naturally, these stakes can vary as a function of the enterprise's activity, its size, its localisation, etc. Here, we propose studying companies that appear, a priori, most concerned by energy transition, since they are the most dependent on road mobility. The companies chosen are located in the outskirts of two French cities, Lille and Lyon. After having presented the research methodology (2), we show that for companies, energy transition in the area of mobility gives rise to high economic and social stakes (3) but to low environmental and territorial ones (4).

2. Methodology

The results presented in this article stem from research labelled TransEnergy, carried out in the cities of Lille and Lyon between 2011 and 2013, and funded by the Agence Nationale de la Recherche (ANR) in

the framework of the Sustainable Cities programme. To understand how companies position themselves regarding this still new issue of energy transition, it was necessary to perform a qualitative survey. A series of semi-directive interviews was carried out on a limited sample of managers whose companies could be concerned by energy transition in the area of mobility, due to the magnitude of the CO_2 emissions they generate.

2.1 The selection criteria applied to companies

The first phase of the TransEnergy research programme led to the identification, on the one hand, of the characteristics of the companies having an influence on CO_2 emissions (sector of activity, size, etc.) and, on the other hand, the locations of the activities that generate the highest CO_2 emissions in the cities of Lille and Lyon [5]. They were mostly companies located in urban outskirts belonging to the sectors of intermediate goods production, wholesaling, professional service companies, and transport and logistics companies, with more than fifty employees. The aim of the qualitative survey, which was the second phase of the research, consisted in collecting the opinions of the managers of these companies that could, a priori, be concerned by the challenges of energy transition in the area of mobility. Since the number of companies that could be surveyed was quite high, other elements were taken into account to compose a limited though diversified panel of companies: diversity of localisations in urban outskirts and their challenges (in terms of economics and transportation), the diversity of sectors, sizes, etc.

2.2 The profile of the companies surveyed

The majority of the thirty companies surveyed in Lille and Lyon belonged to the sectors of intermediate goods production, wholesaling, professional services, and transport and logistics. Although some of them had more than 2500 employees, most had workforces ranging from 50 and 250. They were located in the main urban industrial areas (east Lyon, south Lille), in urban outskirts, enterprise parks or else scattered. Although some companies had been installed for several decades, others had been installed more recently. They could constitute the head office of the company in the case of a single establishment. The mobility they generate involves commuter trips, though sometimes goods transport and business trips that could be local, national and international.

These companies above all employ unskilled workers (labourers, order pickers, etc.) and skilled workers (operators, etc.) who often work in shifts (two 8-hours shifts or three 8-hour shifts) and live relatively far from their place of work, either in the conurbation or in other urban outskirts. The distance of work places from residences was more pronounced in Lyon – from 20 to 30 kilometres – than in Lille – from 15 to 20 kilometres. Most employees used private cars to commute to their workplace.

3. Companies and energy transition: High economic and social stakes

Although not formulated in these terms – since the expression “energy transition” is rarely used by company managers[b] – energy transition in the area of mobility appears to encompass major challenges for most of the managers questioned, in Lille and Lyon. What is more, some managers have already taken measures to change mobility practices in their establishment: both for goods transport and for the business and commuter trips made by their employees. There is one reason underlying this concern: that of the increased cost of mobility linked to rising fuel prices, which represents an economic (3.1) and social (3.2) challenge for company managers.

[b] The survey was carried out in spring 2012, before the term “energy transition” entered public debate in France, notably following the Environmental Conference organised in September 2012.

3.1 The increase of the cost of mobility, an economic challenge

This concern expressed by company managers over mobility issues primarily appears motivated by economic reasons in Lille and Lyon. Over the past few years, companies have had to face a significant increase in their transport costs, linked to rising fuel prices. This is particularly the case for transport and logistics companies, since mobility is their core activity, though also for companies belonging to other sectors, since it now plays a key role in their operation, notably in the organisation of just-in-time production processes. Thus many of the companies visited call on service providers to receive and/or ship products regionally, nationally and internationally. Others own fleets of trucks to make deliveries or a fleet of cars used by employees to make their business trips (between sites, sales, etc.).

Most of the company managers met consider that, apart from punctual rises in fuel prices, the rise in the cost of mobility is a lasting phenomenon occurring in the general trend of increasing energy prices (oil products, gas, electricity, etc.) which will inevitably impact on their costs in the years to come. Thus they are already seeking to implement solutions to reduce the costs of goods transport and of the business trips made by their employees. For the moment these solutions consist in optimising flows (avoiding empty trips for goods transport, promoting car-pooling for business trips), reducing fuel consumption (purchasing vehicles conforming to Euro 5 standards, financing training courses in eco-driving, privileging alternative fuels), practicing modal transfer (to rail, waterway) and even modifying locations to reduce journey distances (installation of new warehouses, choice of logistics platforms, etc.).

3.2 The increased cost of mobility, a social challenge

The interest of company managers in mobility issues also appears linked to the social challenges they represent. The increase in the cost of car mobility related to hikes in fuel prices also impacts on the payrolls of these companies, most of which have workers and other employees. This is especially the case since they very rarely have any choice in their mode of transport, given that the companies they work for are often located in urban outskirts poorly served by public transport and that they live fairly far from their workplace. These problems have led to criticisms of company managers by trades unions and some companies even have recruitment and staff turnover problems linked to the increased cost of car mobility. Nonetheless, it appears that these social stakes are more evident in Lyon than in Lille, perhaps because the distances travelled by car are longer and that public transport services are less well-adapted, since most of the companies were located outside Greater Lyon and therefore outside the perimeter within which the local urban transport authority offers a range of mobility services (bus, tram, underground, self-service bicycles, etc.) enabling easier movement.

Confronted by these problems, certain company managers attempt to implement solutions to facilitate the commuter trips made their employees, the solutions differing according to the site studied. In Lille, since most of the companies are located within the perimeter served by urban transport, the actions taken by company managers mostly consist in demanding the urban transport authority (Lille Métropole) to improve its services or the operator (Transpole) to set up a PDE (Company Mobility Plan). The solutions also include the creation of car-sharing sites, promoting the use of bicycles and videoconferences. Some large companies even finance shuttles for their employees.

The solutions are often more limited in Lyon. In general, they consist in setting up more or less formal car-sharing systems, or increasing the transport allowances granted for trips made by car (partial compensation for commuting costs, reimbursement of toll costs, etc.), which tends to favour car mobility. Some company managers have tried asking the public authorities to develop public transport services, though many of them express their bewilderment when faced by the tangle of administrations with responsibility in the matter.

4. Companies and energy transition: low environmental and territorial stakes

Is the increase of the cost of mobility the only factor explaining the interest of company managers in setting up measures in favour of more sustainable mobility? What is the weight accorded, in particular, to environmental concerns (4.1)? Can the pressure caused by the increased cost of mobility on mobility itself lead to reducing the attractiveness of urban outskirts for companies (4.2) and incite them to modify their strategies of localisation within the urban area (4.3)?

4.1 Low environmental stakes

In both Lille and Lyon, the concern given by company managers to these questions of mobility appears little related to environmental stakes. From the standpoint of company managers, the air pollution and CO_2 emissions due to the mobility generated by companies do not appear to be sufficient reasons for modifying mobility practices within their establishments. The measures taken in favour of more sustainable mobility are primarily taken in response to economic stakes: the aim is more to reduce fuel consumption and thus decrease costs in the enterprise than to reduce CO_2 emissions and thus decrease the environmental impact of the mobility generated by the enterprise.

Among the establishments questioned, some of them nonetheless implement active sustainable development policies, whether for reasons of real conviction or to enhance the company's image. However, these sustainable development policies concern either the company's core activity (production processes), or other areas such as selective waste sorting, water treatment, paper recycling, energy consumption (switching off lights, computers, limiting the use of air-conditioning, etc.).

Mobility itself represents the blind spot of the sustainable development policies implemented by companies. The negative impact on the environment of goods transport, business trips and commuter trips attributable to the company is perceived as a negative externality linked to the company's activity, for which the company has no responsibility, as shown by other works [6].

Companies operating in the transport and logistics sector appear to be the only exceptions to the rule, but mainly because mobility is their core activity. For example, some of these companies have participated in national actions such as the signature of the voluntary commitment to reduce CO_2 emissions in the road goods transport sector initiated by the Ministry of Ecology, Sustainable Development and Energy and the ADEME (Environment and Energy Management Agency).

4.2 The traditional factors of localisation are not called into question

In parallel, the pressure brought to bear by increased mobility costs on mobility does not appear to lessen the attraction of urban outskirts as localities for companies to set up their activities. This is the case in both Lille and Lyon.

The company managers met explained their choice of localisation in these urban outskirts, whether in an enterprise park or isolated, by two criteria: the availability of land and accessibility. The companies questioned belonged to sectors of activity considered as needing considerable amounts of space. They require sufficient areas of land for their current needs (product storage, etc.) and future ones (possibilities of extension, etc.). Likewise, the presence of transport infrastructures (bypasses, highways, airports) and low congestion in these areas relatively far from urban centres make these companies easily accessible, constituting an essential economic advantage in a context in which the company must be capable of producing and delivering its products within ever shorter contractual deadlines. From the standpoint of these company managers, this distance from urban centres always provides more advantages than disadvantages: the importance of available land and low congestion appear to be more decisive localisation criteria than the foreseeable increase in the cost of mobility for the type of company studied here.

4.3 Are more selective localisation strategies possible?

However, of the companies questioned, those installed more recently appeared to implement more selective localisation strategies: on the one hand they consist in taking greater account of public transport services in their localisation choices and, on the other, in limiting the distance from urban centres.

The absence of public transport services in both Lille and Lyon represents the first disadvantage regarding localisation mentioned by company managers who have opted to install their companies in the outskirts of these two cities. This element appears relatively new insofar as this criterion has been rarely placed to the fore by companies up to now, as they had gradually lost interest in the mode of transport used by their employees to reach their workplaces due to the availability of cars. This issue of public transport services seems more pronounced in Lille, where employees and workers, often young, do not all hold driving licences. In certain cases, negotiations are being held between companies and the local public authorities to find public transport solutions adapted to the needs of companies and employees. In Lyon, companies appear to be avoiding certain enterprise parks located in the outskirts, too far from the conurbation, since they are aware that the distances involved risk causing problems of recruitment and access for employees to their places of work.

5. Conclusion

Companies contribute to increasing the mobility of goods and people through the goods transport, business trips and commuter trips they generate. In a context marked by the foreseeable scarcity of fossil fuels and the need to reduce CO_2 emissions in the face of climatic change, companies are led to participate in implementing energy transition in the area of mobility for the same reasons as public authorities and households. The results of this survey carried out on companies located in the urban outskirts of the cities of Lille and Lyon show that energy transition in the area of mobility represents genuine challenges for company managers who are increasingly numerous in implementing measures aimed at promoting more sustainable mobility. However, this relative commitment to energy transition appears to be more focused on the economic stakes involved – higher transport costs for the company – and social stakes – employees faced by greater constraints regarding mobility – than on the environmental ones. Furthermore, this commitment does not appear to include calling into question localisation strategies that favour the installation of companies in urban outskirts. Naturally, these elements only provide partial information on the strategies used by companies to adapt to energy transition in the area of mobility and it would be interesting to complete this survey by focusing on other company profiles (size, sector of business, localisation). These initial results also call into question local public policies, not only those specific to transport and mobility, but also those associated with economic development and their reciprocal links.

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