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Committee for Infrastructure

OFFICIAL REPORT (Hansard)

Decarbonising Transport in Northern Ireland:
Northern Ireland Assembly Research and
Information Service

7 October 2020

NORTHERN IRELAND ASSEMBLY

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Members present for all or part of the proceedings:

Miss Michelle McIlveen (Chairperson)
Mr David Hilditch (Deputy Chairperson)
Ms Martina Anderson
Mr Roy Beggs
Mr Cathal Boylan
Mr Keith Buchanan
Mrs Dolores Kelly
Ms Liz Kimmins
Mr Andrew Muir

Witnesses:

Mr Desmond McKibbin Northern Ireland Assembly Research and Information Service

The Chairperson (Miss McIlveen): Thank you, Des. Apologies for the delay and, obviously, the technology issues. Please give us an overview of your paper. I very much appreciate the work that has gone into this.

Mr Desmond McKibbin (Northern Ireland Assembly Research and Information Service): No problem. Thank you, Chair and Committee. The paper was requested in order to inform your discussions on decarbonising transport. I set out the policy framework, looked at travel behaviour in Northern Ireland as it stands and provided a number of case studies on policies that involve promoting low-emission vehicles and policies to promote modal shift.

It is an international effort to reduce climate change, and the UK and EU are parties to the UN Framework Convention on Climate Change. The EU and the UK are signatories to the Kyoto protocol and its successor, the Paris agreement. Following Brexit, the UK Government have confirmed that they are committed to upholding all their obligations under the Paris agreement. Those obligations are already enshrined in UK legislation. In 2019, the UK amended the Climate Change Act 2008 to increase its target on greenhouse gas emissions from 80% to 100% by 2050, and that amendment applies to the whole of the UK, including Northern Ireland.

Transport has become the largest emitter of greenhouse gases in the UK. Those emissions fell between 1990 and 2013, but over the last number of years they have begun to rise again. The figures on the slides that I am showing the Committee show that the majority of all transport emissions come from road transport. That is a particular issue in Northern Ireland when you consider the lack of rail infrastructure.

The UK Government are developing their own transport decarbonisation plan. It is at the early stages and is due for publication at the end of this year or maybe early next year. It will aim to have zero emissions from all transport modes by 2050. There are a number of strategic priorities in the policy, but the ones that may be the most relevant to the Committee and the Department for Infrastructure will be accelerating modal shift and decarbonising road vehicles and freight vehicles.

The UK has already brought out the Road to Zero strategy, which looks at tackling emissions from road transport. It has a number of targets in place; for example, by 2030, at least 50% of new cars and 40% of new vans be ultra-low emission, and it will completely end the sale of conventional petrol cars and vans by 2040. Funding streams are already beginning to come through from the Road to Zero strategy. For example, £48 million has been allocated to fund 263 new ultra-low emission buses, and Translink has already taken advantage of that scheme to set up a pilot using hydrogen-powered buses, which I will discuss at a bit more length later.

Northern Ireland does not have its own targets for climate change reductions or targets for specific sectors, including transport, so the Committee on Climate Change, which advises the UK Government, has put together some recommendations for Northern Ireland for the way that it should move forward in reaching the zero target by 2050. It obviously acknowledges that the UK Government have a central role in setting vehicle standards on emissions and various tax schemes that may be used. It suggests that the Northern Ireland Executive must focus on transport demand-management policies that will reduce demand for road transport and encourage modal shift towards active and public transport. It also suggests that the Executive can focus on policies that reduce the financial and non-financial barriers to electric car uptake.

I will move on to look at some of the policies that are in place to promote ultra-low emission vehicles (ULEVs). The Committee on Climate Change has criticised the UK Government's policy of 2050 being a target, suggesting that, if they want to reach zero emissions by 2050, they will have to eliminate the sale of diesel and petrol cars by 2035. If you look at the statistics on the uptake of those types of vehicles at the moment, you can see that there is a massive challenge. Only 0.5% of vehicles licensed in the UK are ultra-low emission vehicles and the figure for Northern Ireland is only 0.3%. The measures that the Executive can introduce in order to promote e-cars in Northern Ireland would include increasing the reliability of, and access to, charging points, which is seen as a barrier. Cost is also a factor. The Northern Ireland Executive, in conjunction with the UK Government, can make sure that people know that they can access those schemes.

On the question of infrastructure, the Committee on Climate Change suggests that Northern Ireland would need about 35 rapid-charging points and up to 950 top-up chargers. The current network consists of about a third of that number. Although the Department for Infrastructure and eCar NI have noted that most charging will be done at home, it is important to have the infrastructure in place to give people a sense of assurance that when they leave the house, they will be able to top up their car when needed.

Freight is a much bigger challenge. According to the Chartered Institute of Logistics and Transport, there are no feasible ultra-low emission vehicles or electric HGVs on the market that would suit their business models or requirements. The Committee on Climate Change suggests that while it will be possible to carbonise freight, it will require significant future investment in infrastructure. The Freight Transport Association agrees, saying that its members need assurances that, no matter where they go in the UK, they need to be able to refuel at any point.

Decarbonising public transport is another big thing, and it is something that the public sector can lead on, especially in Northern Ireland. Translink has developed its own strategy to deliver a zero-emission bus and rail fleet by 2040, and, as I said, it is involved in a pilot scheme to introduce a small fleet of electric fuel-cell vehicles. That project received funding from the Office of Low Emission Vehicles (OLEV) and cost about £4.7 million to deliver the first three hydrogen-fuel buses in Northern Ireland and the first refuelling station on the island of Ireland.

According to Translink, the cost of capital investment, of infrastructure, and the cost of the vehicles themselves will be a massive barrier, although, as the technology rolls out, it will be possible to reduce the costs. Translink has indicated that it will require approximately £41.6 million over the next 10 years to decarbonise the bus fleet and approximately £40 million per annum to decarbonise the rail fleet. That would require a significant commitment from the Executive.

When it comes to modal shift policies, we all know that Northern Ireland is a highly car-dependant society. Almost 90% of journeys over a mile are made by car. Rurality is a big factor, as a lot of people

in Northern Ireland live in rural areas. Indeed, the rural population is growing faster than the urban population. Our main reason for travel is to get to work, and that accounts for almost a quarter of the total distance that we travel every year. Unfortunately, 80% of those journeys are made by car, and 80% of those journeys are made in cars with just one occupant. Ninety-five per cent of cars have no more than two people in them.

Looking at modal shift policies since 2000, when the first regional transportation strategy was brought out, any growth in public transport use has been in line with population growth, and no modal shift has occurred. The NI Audit Office conducted a review of public transport in Northern Ireland in 2015 and concluded that no modal shift had occurred among commuters, who were less likely to use public transport then than they had been 10 years earlier. The Public Accounts Committee took note of that report and called for a stronger vision and leadership in order to achieve modal shift, including the use of demand-management measures, which I will discuss in a bit more detail now.

In addition to our entrenched travel behaviours in Northern Ireland, we also have the challenges of COVID-19. We can see from the chart that lockdown had an immediate impact on demand for public transport. In March, it was at about 10% of 2019 levels, and it really only recovered to less than 50% by the middle of August of this year. I am sure that it has recovered a bit more with the schools and students going back, but the figures are not yet available. There are still undoubtedly a lot of challenges in attracting people to public transport in a post-COVID-19 environment.

I will move on to transport demand management measures. I have a lot of key studies in the paper, but I did not want to go into them in great detail in this presentation, unless members want to ask about them. Transport demand management measures are designed either to restrict or discourage car use, — "push measures" — or to promote public transport — "pull measures".

Through policies that have been in place since 2010, with the old regional transportation strategy and the current one, we have tried to attract people to public transport by making it more attractive, introducing new trains and buses, and increasing service frequency. While those are all necessary policies, the figures show that they have not necessarily worked. One of the criticisms from the Audit Office and the Public Accounts Committee was that there has been an unwillingness to implement push measures to stop people driving: increasing car parking charges, car-park zoning to discourage people from driving into city centres, road-user pricing, speed reductions and congestion management. There are a number of policies that can discourage car use that we have not availed ourselves of yet.

How people choose their mode of transport comes down to social norms and habit. It is an automatic behaviour for people in Northern Ireland to drive. The number of young drivers has almost doubled over the last 10 years; that is people from 17 to 21 who are getting driving licences. In terms of access to a car and driving licence numbers, Northern Ireland is heavily car-dependent, much more so than anywhere else in the UK. In order to encourage people to move to public transport, we have to, at the very minimum, provide a quality service that is accessible, fast, seamless, safe, secure, affordable and reliable.

I will look very quickly at some case studies, starting with road-user charging as a restrictive measure. Congestion zones have been shown to be very effective in reducing traffic into cities. For example, the London congestion charge brought about a 39% reduction in traffic into the zone between 2002 and 2014. It also allowed for the reallocation of a lot of road space to encourage pedestrians and cyclists and to encourage the use of public transport. It has improved road safety, and it generates significant income for Transport for London, which is ring-fenced and reinvested in public transport measures in London.

Car parking measures are another push measure. The transport literature suggests that this has a significant influence on modal choice. Cities that have successfully reduced car dependence have employed restrictive parking measures, and that has achieved broad modal shift. Copenhagen is world-renowned as a cycling city; it has some of the best cycling infrastructure and, consequently, some of the highest levels of cycling anywhere in the world. However, it is not just cycling that is helping it achieve that. Copenhagen has very restrictive parking measures in place to stop people wanting to drive into the city centre, as well as, it should be said, a highly functional public transport system. There are parking spaces available in Copenhagen, but, if people want to make use of them, they have to pay a very high price. Since Copenhagen introduced those policies, it has seen a 40% reduction in private vehicle parking during the morning rush hours, and the proportion of commuters coming by car has fallen from 22% to 16%. That is already very low compared with Northern Ireland, but it shows the effectiveness of restrictive parking measures.

Workplace car parking charges are another significant factor in achieving modal shift, and studies show that organisations that constrain the number of parking spaces or charge for parking spaces are very successful at achieving modal shift. Nottingham City Council has a worked-based parking levy in place whereby it , in effect, taxes workplaces that provide work-based parking, and that is often passed on to the employees, who have to pay for parking at their workplace or else they cannot park. That has been very successful in increasing public transport use for commuting into the city. Again, any money made from that is ring-fenced for public transport investment in the area.

There are a number of pull measures. It is a well-rehearsed point that the amount of investment that you put into things such as public transport, bicycle lanes and walking infrastructure will increase usage and make that very attractive to people. I have gone into some of the issues in the paper.

I will move on to a more recent development — Mobility as a Service (MaaS) — whereby all the various forms of transport available to people are integrated and made accessible to consumers on demand. It uses information technology to provide a one-stop-shop for all the transport options available, from public transport and bicycles to car share, bike share, taxis and Ubers — the whole thing. The key benefit is that it is just one app that provides one pay point, and it allows people to navigate, most commonly, through a city and across regions.

The development of a MaaS service is at a very early stage. Cities such as Gothenburg and Madrid, which have high levels of service providers for car share, e-scooters and bicycle shares, have made massive strides in developing their MaaS service. It has been shown to be very beneficial in achieving modal shift, and that is probably true for improving the passenger experience, for example. We have talked, over a number of years, about integrating ticketing in Northern Ireland and about the attractiveness of that to public transport users, and this is just one step on from that.

One of the major benefits of a MaaS service, from a transport planner's perspective, is that it provides a lot of data; it gives you an idea of how, when and where people are travelling. It can be used for better planning in the future as well. It has benefits for the consumer and for the Government planning transport.

The National Transport Authority (NTA) in the South has already started working on the introduction of a MaaS service. It views its role as a transport authority and a regulator as providing the correct regulatory operating environment for MaaS to take off by introducing the right legislation and creating the right environment so that private, and public, transport companies can share information and services on one app. At the end of the day, the NTA hopes that it will have a single app that gives access to a range of services across the Republic.

The House of Commons Transport Committee has said something similar to what the NTA said in the South. It realises that the UK Government's main role is to ensure that they set out their vision for MaaS and how they can be an important part of the overall transport provision in the country. It said that the Government's role is to provide financial support and to create a sustainable legislative and regulatory environment in which MaaS can operate. Again, that is just one example of the way in which the types of public transport services, and even personal mobility, are changing. I am happy to take any questions now.

The Chairperson (Miss McIlveen): Thank you. That is a weighty piece of research that you carried out for us; it is much appreciated. Members, are there any comments?

Mr Boylan: Des, it is a good piece of work. I do not want to do it an injustice. I have a couple of points. There is a heavy reliance on single-occupancy vehicles in rural areas. Given that we are talking about decarbonisation, how do we encourage people to move away from that? Are there any other ways in which we can influence them such as encouraging working from home if we are serious about the overall plan? As you know, most of the cars travelling to Belfast on the motorways are travelling 30, 40 or 50 miles. Those are generally cars with just a driver. I ask that question from a rural perspective.

Mr McKibbin: The park-and-share facilities installed by the Department over the past number of years have been successful. I come from Newry and have availed of that service. The car parks in and around the town are overcrowded in the mornings and, in fact, have been extended on a number of occasions by the Department to try to accommodate people from a rural area who come into the town, or somewhere, where it is easier to meet up with their counterparts and drive to work. There has been a meteoric rise in the number of people working from home since the lockdown started, and it remains to be seen how long that will continue. There are a number of issues around that, such as the impact

that it has on city centres. I read research by the Belfast chamber suggesting that only 5% to 10% of office workers have returned. That could have long-term impacts that need to be monitored.

Mr Boylan: Only 0.3% of cars here are electric, but there are over one million vehicles on the road. There is a big challenge with regard to the infrastructure, if we are serious about getting people to use electric vehicles. Can you expand on that or provide any ideas that you have found in your research?

Mr McKibbin: Work by the Committee on Climate Change suggests that one of the biggest barriers to electric vehicle uptake is the fear of running out of fuel. Northern Ireland is a small area, and electric vehicles have a range of nearly 300 miles. When people realise that the likelihood of their not being able to complete their journey has reduced, they may begin to avail themselves of them.

The other significant challenge is the cost of the vehicle. Again, we will have to see significant investment by the UK Government in providing access to those vehicles. As manufacturers move away from producing diesel and petrol cars to producing more electric cars, costs will surely go down. Research shows that, by 2028, there will be more of a parity in the cost of electric vehicles, and, by then, we will start to see a much higher uptake.

Mr Boylan: I have one final point. You mentioned active travel and cycling. How can we get people on to cycles and encourage them into active travel?

Mr McKibbin: Copenhagen is a good example of how a city has got more people to cycle. The building of cycle lanes, by itself, will not get people to cycle into the city, although it will create a certain demand. We require a suite of measures. There needs to be an integrated approach of using push measures, such as parking costs or restricting the level of parking in the city centre, to put people off driving into it and make them think twice about taking the car for a two- or three-mile commute. Some travel to work statistics show that 70% of people who live within five miles of work use a car. There is traction to be made from targeting those people and making cycling more attractive or a better option than driving.

Mr Boylan: Thank you very much for your paper.

Mr Muir: Thanks, Des, for such a comprehensive paper and presentation. A lot of work has gone into it; it has been very useful. There is a lot of focus on moving towards electric cars, e-cars and the charging infrastructure. There is also a discussion about hydrogen, so there are just two technologies. Some discussions about electric cars and vehicles have been on the environmental consequences of the disposal of batteries because they have to be replaced after a while.

Do you have any information on that or on emerging discussions? Some are now saying that battery-based electricity is going out of fashion and that we are moving towards hydrogen.

Mr McKibbin: I am sorry, but I have not done any research on the disposal of batteries. However, I can come back to you on it.

Most of the research that I looked at talks about hydrogen as being the most viable technology for freight and public transport — for larger vehicles, basically. A lot of people feel that small battery-powered cars are the way forward for personal mobility. I can look at that issue and provide more detail on the problems with those technologies, if the member is content.

Mr Muir: That would be appreciated. I agree with your point on hydrogen. There have been a lot of media reports about the disposal of batteries, particularly in the developing world, to where people are exporting the problem, which is not fair.

Mr McKibbin: OK, no problem. I will look into that.

The Chairperson (Miss McIlveen): This was a comprehensive piece of work. If members are content, we will look at it again and return to it next week, maybe with suggestions as to how we move forward. We may want to drill down into some aspects of it and, perhaps, do a micro-inquiry.

Mr Boylan: Is he back next week?

The Chairperson (Miss McIlveen): The Committee may need to have a discussion of our next steps in approaching this issue and then speak to Des about where we want him to take the research.

Thank you very much again.

Mr McKibbin: OK, no problem. Thank you.