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Dear Michelle

Thank you for your letter dated 25 March seeking the views of NI Water and giving us the opportunity to provide our thoughts on the decarbonisation of road transport, particularly the move to electric and/or hydrogen vehicles.

Given NI Water's commitment to Health, Environment and the Economy, our use of alternative fuel vehicles is under continual review. The decarbonisation of fleet is of critical importance to NI Water as our fleet consists of c.600 internal combustion engine (ICE), both light commercial vehicles (LCVs) and heavy goods vehicles (HGVs). We have been actively considering how, when and where to upgrade to the various forms of alternative fuel technology as part of our fleet decarbonisation programme in taking action on the climate emergency ahead of the ban on the sale of new petrol and diesel cars from 2030

NI Water have recently introduced our first four electric vehicles within our current fleet, which is a major and exciting step as we embrace new vehicle technology, demonstrate our commitment to nature and our ambition to reduce our operational impact to enhance and protect the natural environment. These vehicles will be operational early in 2021/22.

We are also considering the possibility of hydrogen powered vehicles, solely or as an extender option for EVs, once the technology is available in Northern Ireland. NI Water plans to use hydrogen to fuel a small number of its vehicles as part of a pilot to explore its suitability as a viable long term fleet option. There may also be the opportunity to reach out to other major organisations with vehicle fleets to demonstrate the use of hydrogen and build confidence in its use. In addition NI Water is keen to explore if there is an opportunity to supply other public sector organisations e.g. Translink or indeed to partner with a company in jointly owning and operating electrolyzers to fuel hydrogen vehicles.



Hydrogen may also be suitable in fuelling the long distance fuel cell HGVs that will become vital to Northern Ireland's food exports, as well as to shipping and eventually aviation.

In the first phase of decarbonising transport, fast-charging services for electric vehicles will be limited by electricity network constraints. NI Water's major grid-connected sites, located near all our major towns and benefiting from low electricity costs, could provide the fast charging necessary for NI Water's fleet. These sites may also be able to offer fast-charging facilities to other essential service vehicles e.g. local council vehicles.

As we approach a tipping point in the adoption of EVs, bringing a number of essential service providers together to plan how their fleets will operate in the future may be beneficial. As part of this process it may be helpful to consider not only if NI Water's sites could be relevant to their future needs in accessing fast charging and low cost electricity but also in sharing learning on how to optimally transition to an EV fleet.

Northern Ireland will face a learning curve in the operation of EV fleets. As public sector bodies are likely to be expected by policy to be early adopters, a specially funded pathfinder project could be undertaken by NI Water to gain experience in the management systems and charging infrastructure necessary to optimise EV fleet charging costs. This could also consider the income generation potential from using their batteries to provide NIE Networks with network flexibility and resilience (vehicle to grid). If funded NI Water could host such a project with other essential service fleet operators in optimally transitioning to EVs in effectiveness and efficiency.

### **What are the main challenges to the uptake of ULEV?**

One of the fundamental challenges NI Water has been considering for the uptake of ULEV is to understand the direction of future technology and how it is supported by infrastructure and supply chains.

- For LCVs this appears to be electric and for HGVs this may be hydrogen, although the latter is more economically viable for longer range HGVs and so further consideration needs to be given to the solution for lower mileage HGVs.
- NI Water are also considering the opportunity to add hydrogen extenders to the electric fleet (EV+H) which provides a greater range. We envisage running a pilot of a number of these vehicles in line with the vehicle technology becoming available in Northern Ireland.
- Given that the majority of our current fleet consists of small/medium LCVs the main challenges encountered by NI Water in using ULEVs relate to the EV charging infrastructure and vehicle specifications, such as range, payload, charge time and current purchase costs.



### *Charging Infrastructure*

The current EV charging network does not match the convenience and availability provided by traditional fossil fuel stations, raising a number of issues which will need to be considered.

- NI Water drivers operate a start/finish from home policy under normal working practices. Providing charging at home has been considered but raises issues, including; health & safety requirements of an employer in a home environment, longer time to charge on trickle charger, charging leads over footpaths or shared areas, responsibility for the charge point (if property is rented or common parking in apartments), cost recovery for electricity units used, availability of electricity in area for charge points, etc.
- Several drivers participate in standby/on call rotas where they need to mobilise without delay e.g. not being able to wait for their vehicle to complete charging.

From an operational perspective,

- It is essential that vehicles can be charged quickly and local to the operating area, to minimise any impact charging may have on our daily service operations.
- There are currently a limited number of the fast/rapid chargers (43kW+) within Northern Ireland and not all would be conveniently located to all our vehicles, with drivers possibly having to travel further (and associated time) to charge their vehicle.
- NI Water is seeking to investigate how rapid charging facilities can be incorporated into its operating model in relation to the decarbonisation of fleet.
- Publicly available charge points and their future availability/cost will also be considered as part of the operating model.

### *Vehicle Specifications*

The provision of fit for purpose, reliable fleet is essential in ensuring an effective, efficient mobilised frontline workforce in NI Water to deliver our core services.

- The majority of our current fleet consists of small/medium light commercial vehicles (LCVs) and the opportunity to move to EV equivalents has been limited to date based on the practical range of vehicles, additional required payload carried by NI Water vehicles and the impact of this on available vehicle range and, as stated previously, the charge time.
- There are currently a limited range of LCVs which meet our payload and range requirements.
- In our first transition, we will target vehicles with lower payload and range requirements, working in conurbation areas where air quality may be subject to clear air policies.



### *Comparative costs of ICE vs EV.*

Electric vehicles currently have significantly higher capital cost than conventional combustion engine alternatives, however they benefit from lower operating costs, as reported by several vehicle manufacturers.

### **What are the main benefits to the uptake of ULEV?**

Given our commitment to nature and our ambition to reduce our operational impact to enhance and protect the natural environment, as part of the Water Industry ambition to achieve net zero by 2030, we recognise that there are benefits to the uptake of ULEVs.

- The decarbonisation of transport is a priority in our NI Water environmental journey in the support and implementation of clean air zones and air quality action plans where the air has been affected by pollution, principally nitrogen dioxide (NO<sub>2</sub>) and carbon dioxide (CO<sub>2</sub>) from road transport emissions.
- Any reduction should deliver health benefits as a result of less pollutants and particulate matter emissions.
- Vehicle to Grid - the uptake of ULEV enables the vehicle to communicate with the power grid to respond to demand by either returning electricity to the grid or by throttling the charging rate.

### **What support to assist a move to ULEV would you like to see from the NI Executive?**

There are several areas where we believe the NI Executive could assist a move to ULEV, based on our experience to date:

- Appropriate support mechanism to facilitate transition to emerging technology
- Support for ULEV and associated infrastructure
- Roll out of more and faster ultra-rapid charging points
- Developing electricity infrastructure to facilitate charging points
- Joined up NI wide approach, enabling thought sharing and common resources

### **Do you believe there should be official targets for your sector and have you any views on the potential timescale this could take?**

We would need to further develop our knowledge through pilots/demonstrator projects before being able to comment on the need for targets, although any targets would possibly need to;

- Align with the ban on ICE vehicles from 2030 and be more national rather than specific sector level.
- Reflect the direction of future technology and specifications of the vehicles,
- Supported by the availability and convenience of sufficient charging infrastructure.



## **Have you begun to plan for decarbonising your fleet and if so could you provide some detail on this?**

The decarbonisation of fleet is of critical importance to NI Water as our fleet consists of c.600 internal combustion engine (ICE), both light commercial vehicles (LCVs) and heavy goods vehicles (HGVs).

- NI Water have recently introduced our first four electric vehicles within our current fleet, which is a major and exciting step as we embrace new vehicle technology, demonstrate our commitment to nature and our ambition to reduce our operational impact to enhance and protect the natural environment. These vehicles will be operational early in 2021/22.
- Our PC21 business plan, our strategic plan for the next six years, sets out our approach to the introduction of alternative fuel vehicles.
- Vehicles in the first three years of PC21 are on a like-for-like fuel basis, with targeted pilots of emerging vehicle technologies.
- We will look to wider adoption of alternative fuel vehicles in the second half of PC21 (from the mid-point - April 2024 onwards) allowing time for pilots and anticipated price parity of ULEVs
  - 25% of new vehicles in 2024/25 to be alternative fuel,
  - 50% of new vehicles in 2025/26, and
  - 100% of new vehicles in 2026/27.
- By the end of PC21, NI Water anticipates having 200 alternative fuel vehicles within its fleet.
- We are also considering the possibility of hydrogen powered vehicles (solely or as an extender option for EVs) once the technology is available in Northern Ireland.

## **Have you estimated the cost of decarbonising your fleet?**

Our PC21 business plan has estimated the cost to start to decarbonise our fleet over the next 6 years, with c200 vehicles moving from ICE to EV by 2027.

- Costs are based on base year prices but the capital cost differential may reduce for some EVs as they gain a greater market share and as the ban on fossil fuels in 2030 gets nearer.
- We are currently in the process of estimating the cost and timeline to fully decarbonise our fleet in terms of capital vehicle and infrastructure costs, in parallel with estimating the time to charge, impact on productivity and operating cost reduction for alternative fuel vehicles.



I hope you have found this letter informative. We would be happy to discuss in more detail with Committee staff as necessary.

Yours Sincerely

A handwritten signature in black ink, appearing to read "Sara Venning".

Sara Venning  
**CEO**

