

All-Party Parliamentary Group for the Waterways

Waterways and Net Zero – Sustainable Propulsion

Tuesday 10th November, 2020

Minutes

The Webinar was opened by **Michael Fabricant MP** at 9:45am

There were forty people in attendance.

Bowman Bradley Chairman of the Inland Waterways Association's Sustainable Propulsion Group, presented on the work of IWA in identifying sustainable methods of propulsion. He began by noting the large scale of navigable canals and waterways within Great Britain, with the network supporting 80,000 powered craft, 45,000 jobs and contributing £1.5 billion to the national economy. Mr Bradley then discussed the challenges associated with updating the existing fleet of boats on the waterways, and building new craft, in a way that would meet the demands associated with a carbon-neutral future. He presented IWA's vision for a "future narrowboat", including the opportunities associated with moving to battery and hydrogen fuel cells as a replacement for traditional hydrocarbons.

Mr Bradley moved on to debate the challenges involved with regard to upgrading the existing fleet of boats upon the inland waterways, currently dependent on oil and diesel. He noted proposed solutions such as moving towards sustainable biodiesels, as well as upgrading to electric and hydrogen engines. He emphasised the serious approach being taken by IWA, but that to be successful, policy makers would need to develop a legislative framework to meet the sector's vision. This would demand investment in recharging infrastructure, more support for biodiesels, and investment in hydrogen technologies.

The second speaker was Jonathan Collins of Cadent Gas. Mr Collins began by noting the growing importance of hydrogen-based technologies in driving the future of the economy. He highlighted the developments being made by the sector at the present time as part of the ambition of reaching 100 percent use of carbon-neutral sources, including a trial plastic to hydrogen plant being developed at Ellesmere Port.

Mr Collins added that hydrogen technologies had a significant role to play across the economy, especially with regard to reducing emissions from the residential and transport sectors. He said that traditional issues associated with capturing energy via hydrogen cells were being looked into, and that

long-term storage of energy is increasingly possible. He also noted that such developments in fuel cells were particularly relevant for larger forms of transport, such as trains and maritime vehicles.

The third speaker was Philip Whiffin, Head of Advanced Propulsion Systems at the WMG within the University of Warwick. Mr Whiffin discussed his background in engineering, particularly with regard to developing new electrification solutions and infrastructure. He also noted the WMG's forty year history in development new research methods to meet market needs, increasingly looking at areas such as emerging technologies in the transport sector.

Mr Whiffin spoke about the challenges and solutions associated with moving to carbon-zero transport on inland waterways, with a particular focus on canal boats. He noted that the low energy and low power requirements for the majority of canal-based pleasure craft rendered battery-based solutions as being a feasible replacement for traditional hydrocarbon-based engines. However, the usual risks associated with failing to recharge before the battery range was reached, also offered the possibility of a hybrid solution of batteries and fuel cell being used.

He discussed the costs associated with these two possibilities being retrofitted onto existing craft. A battery-based system would have a likely total cost of around £10,000 at the present market rate, whilst a fuel cell system would be around £6000. However, he noted that the costs of both of these systems would be projected to fall significantly over the following decade, probably by around 60 percent by 2030.

Mr Whiffin added that the daily costs of a battery solution would be preferable to those of a conventional boat, being £4.50 per day rather than the current average of £12 per day. A purely hydrogen-based solution would be more expensive than conventional solution at around £20 per day, but that this would also be likely to fall to under £5 by the end of the decade. He concluded by noting the challenges associated with developing new charging and hydrogen technologies to meet these demands, but that both had clear opportunities for the British electrification supply chain.

The final speakers were Paul Gambrill and Graham Stanley of Oxfordshire County Council (OCC), who presented on the principles of canal boat electrification from a local authority perspective. He noted that the scheme was being supported by the OCC Innovation Hub, an incentive focused on developing partnership approaches to meet sustainable, low and zero-carbon solutions for the area, especially in areas such as transport. Mr Gambrill noted the unique position for Oxfordshire to take a lead in meeting these challenges, thanks in part to its central location, automotive industry, and high-level technology and academic heritage.

He said how discussions regarding sustainability had helped to spearhead the development of a feasibility study for projects to install electric charging points on the Oxford Canal at the waterfront at Banbury. By engaging with user and stakeholder groups such as marine engine manufacturers, electric vehicle and infrastructure providers, and members of the public, OCC was now developing a strategy to install a full network for electric charging across the inland waterways in Oxfordshire. He noted that the

current feasibility study was focused on ensuring that these proposals would ensure maximum value for money and allow for any installed infrastructure to be future proofed.

Mr Stanley concluded by noting the missing element of the current study, funding. He reiterated the commitment to building a consortium to develop the proposals, but emphasised the need for central government funding to establish the study and subsequent pilot scheme.

Mr Fabricant thanked the speakers for their contributions and opened the meeting up to questions from the floor.

There were questions to the panel and comments from Simon Baynes MP, John McDonnell MP. Rt Hon Sir Robert Atkins, John Packman, Nick Brown, Emrhys Barrell, Phil Horton and Peter Birch

John McDonnell proposed and was supported by **Sir Robert Atkins** about the idea of a scrappage scheme for boat engines/propulsion units. **John Packman** CEO of the Broads Authority noted that the Broads has a well-developed network of electric charging points that had been installed many years ago with the original intention of charging electric boats. He added that the current situation was now focused more towards charging batteries for domestic use and running domestic appliances, which demonstrates the dual use of charging points. He added that the Authority is current undertaking work with Hethel Innovation into developing charging stations in remote areas, away from electricity sources. These would be initially powered by diesel generator with scope for them to be converted to hydrogen in the future. **Nick Brown** of the National Bargee Travellers Association said that it was important that any grant scheme should avoid being postcode related. He noted the example of the federal government in Canada having recently introduced an online computation system to monitor energy use. He added that the carbon footprints of people living on boats is considerably lower than those living in housing. In response to this, **Michael Fabricant** suggested that boat registration with navigation authority would be a better way to meet the demands of grant schemes than postcodes. **Emrhys Barrell** discussed the current trials associated with an electric-powered boat. He noted that a number of trials had been taken with British Waterways, the Environment Agency and The Broads Authority. He said that only the latter have continued to use the one in question. For this reason, he started that a retrofit hybrid system was the most likely solution to meeting future demand. **Phil Horton**, Sustainability Manager for the Royal Yachting Association, said that it would also be important to expand the discussion to developing powered solution for sailing boats. **Peter Birch** of the Canal and River Trust noted the increased use of “green” diesel and other sustainable fuels such as hydrotreated vegetable oils. He noted that discussions about replacing diesel and other hydrocarbons represented a short term solution and that the Chancellor had failed to move beyond this in his recent economic policy statements.

Mr Fabricant concluded the meeting by reaffirming the Group’s engagement with Government. In terms of matters arising, he said that the Group would write a letter to the Chancellor raising the key issues discussed at the meeting:

- **Investment in infrastructure:** Electric charging points (proposal for 300 charging sites initially on the connected inland waterway system) to be funded by grants from central Government to navigation authorities

- **Boat engine scrappage scheme:** To encourage conversion of existing fleet (any grants to be administered using navigation authority boat licence or registration number, not postcode as this would preclude many residential boaters from being eligible)
- **Fuel Duty:** The current proposals by HMRC and HM Treasury to move from red diesel to white for inland waterways craft is seen as being short-sighted in the context of moving towards zero carbon by 2050. Instead, moving towards increased use of biodiesel would be more effective in the longer term in reducing emissions, with red diesel being retained until there is wider distribution and use of biofuels.

The meeting closed at 11:15.