

Cross-Party Group on Sustainable Transport

20 June 2023, 18:00

Topic: Ferry decarbonisation

Held as a hybrid meeting in person at the Scottish Parliament and online

Present

MSPs

Graham Simpson MSP (Convener, chairing)

Ariane Burgess MSP

Invited guests

Guest speaker: Asbjørn Torvanger (Senior Research Fellow at Centre for International Climate and Environmental Research Oslo, CICERO)

Guest speaker: Neil Kermod (Managing Director at European Marine Energy Centre, EMEC)

Non-MSP Group Members

In-person

Josh Hill (Office of Graham Simpson MSP)

Ian Budd (Friends of the Far North Line)

David Giles (Scottish Association for Public Transport)

Laura Hyde-White (Transform Scotland)

Colin Howden (Transform Scotland)

Aaron McHale (Individual)

Paul Tetlaw (Transform Scotland)

Vic MacKinlay (Light Rail UK)

Online

Lara Fahey (EAUC Scotland)

Brian Fulton (CMAL)

Mike Harrison (SATA)

Sara Collier (Confederation for Passenger Transport)

Douglas Bryce (Disability Equality Scotland)

Hillary Stubbs (MACS)

Craig Laws (Enterprise Holdings)

Jenny Milne (Scottish Rural and Islands Transport Community)

Apologies

Jane Ann Liston (Railfuture Scotland)
Allison Cosgrove (Railfuture Scotland)
Brian Whittle MSP
Mark Ruskell MSP

Welcome and introductions

The Convener, Graham Simpson MSP, welcomed the in-person and online attendees and noted that as part of the short inquiry into the decarbonisation of transport, this session will consider the topic of decarbonising ferries.

Speakers

Asbjørn Torvanger delivered a presentation on the success of electric car ferries in Norway. He advised that the first battery-electric ferry began operating in 2015 with a fossil fuel emergency back-up engine. He noted that in June 2023, 49 out of 132 car ferry connections were electric. Routes are put out to tender by central and local government, specifying climate-friendly fuels. Passenger-only ferries are not converting as quickly as car ferries, because routes are more demanding. By 2030, 1.5% of Norway's carbon emissions will be affected by switching to low/zero-carbon ferry fuels. Asbjørn noted that hydrogen/ammonia may be an alternative for longer distances, but there are energy losses along the supply chain and need big infrastructure investment. However, some experimental vessels currently use hydrogen.

Neil Kermode delivered a presentation titled 'Why ferry fuels matter' in which he outlined EMEC's work in renewable energy in Orkney and how an excess of renewable energy prompted a turn to work on hydrogen as a means of storage. He noted that EMEC had conducted some hydrogen experiments on ferries which were not completed due to safety considerations and difficulty obtaining necessary authorisations. This led them to the consideration of using synthetic fuels — creating synthetic hydrocarbons from green hydrogen (hydrogen made from renewable sources). Neil highlighted that there is no fuel that uses less space and is lighter than diesel and that EMEC's position is that, in vessels that have space and weight limitations, synthetic diesel is the answer to cutting fossil fuel emissions. He also added that there is a need to convert the right fleet i.e. start with smaller vessels which are easy to electrify, before tackling the bigger ships. In summary: electrify whatever is possible now, and address non-fossil but liquid fuels for the rest.

Q&A

The Convener opened the meeting to questions.

Q: Brian Fulton (CMAL) asked about how electricity supply in remote areas can be addressed.

Asbjørn Torvanger advised that most battery electric ferry services tend to be short e.g. 30 minute fjord journeys and, in Norway, the government takes the lead in developing the local grid and charging stations. He highlighted that efficient ship design and reducing speeds saves a lot of energy.

Neil Kermode stated that grid capacity on the mainland end of connections is better than on the islands. He noted that charging technology will advance quickly i.e. there is a potential for onshore battery charging while the ship is away. He added, however, that diesel back-up is needed at present as the lifeline service of ferries is critical to island populations.

Q: Brian Fulton (CMAL) asked whether funding is the barrier to moving forward.

Neil Kermode advised that it's as much the uncertainty around permissions for hydrogen needed onshore, and how quickly hydrogen can be loaded onto vessels.

Q: Colin Howden (Transform Scotland) asked about economic opportunities and where the production chains are located.

Asbjørn Torvanger advised that final work on ferries is done in Norway (shipyards), but hulls are built in Turkey because of cost savings. Meanwhile, the hydrogen express boats are built in Norway and are made from carbon fibre.

Neil Kermode stated that it is unlikely that there is battery manufacturing capacity in Scotland, but Scotland is used to installing electric equipment.

Q: Paul Tetlaw (Transform Scotland) asked what proportion of Scotland's total carbon emissions come from ferries.

Neil Kermode stated that, for Orkney, internal ferries comprise about 1.5% of total, and carriage of goods is about 4%. The Aberdeen-Orkney-Shetland ship uses as much energy as all the islands.

Q: David Giles (SAPT) asked whether the speakers could characterise crossings which can use batteries by distance/time.

Asbjørn Torvanger suggested that ferries running for a 1 hour commute is probably OK. He also noted that bigger vessels are not necessarily harder to decarbonise — they have more space for batteries.

Neil Kermode agreed that ferries performing approximately 1 hour trips is correct but noted that battery capabilities may improve over time.

Asbjørn Torvanger added that fishing vessels in Norway are hybrid.

Q: Graham Simpson asked whether synthetic fuel is produced in Scotland.

Neil Kermode advised that these fuels are still in the R&D phase. The advantage of synthetics is they make the energy much denser. Capturing carbon is an unknown quantity; green hydrogen is key.

Q: Lara Fahey (EAUC) asked whether there are benefits other than emissions savings.

Neil Kermode noted that vessels are quieter if electric, and that there's no oil spill risk. He added that it is very difficult to handle liquid hydrogen, especially in a marine environment.

Close of meeting

The Convener thanked the presenters and contributors and closed the meeting at 19:08. There are no further meetings scheduled before Parliament goes into summer recess.

Minutes

Draft minutes prepared by Chris Day (Transform Scotland) on 22 June 2023.