

Cross-Party Group on Renewable Energy and Energy Efficiency

21 November 2023, 18:30

Minute

Present

MSPs

Sarah Boyack MSP
Brian Whittle MSP
Audrey Nicoll MSP

Invited Guests

Professor Elisabeth Holland (University of South Pacific)
Neil Kermode OBE (EMEC)
David Hogg (Arup)

Non-MSP Group Members

Jack Norquoy
Ella Field
Adam Wilson
Anna Gardiner
Alan Beal
Carolyn Burch
Colin Pritchard,
David Cowdrey
Fiona Riddoch
Graeme Robertson
Joan Pisanek
Laerke Salhauge
Lynn Galbraith
Mark Winskel
Pete Roche
Antonie Reguis
Ronan Doyle
Atzin Madrid
Chris Cook
Paul Gill
Ruxandra Cazan
Laura Fordyce
Mark Winskel
Marcus Saul

Anne Grethe Eckmann
Maximilian Munch
Zaki Hasan
Bill Rodger
Tariq Muneer

Apologies

Elaine Waterson
Liam McArthur MSP
Mark Ruskell MSP
Jackie Dunbar MSP
Beatrice Wishart MSP
Professor Jan Webb
Euan Ingram
Tom Ockendon

Agenda Item 1: Welcome By Chair

Sarah Boyack MSP welcomed everyone to the first in-person meeting of SPREEE since prior to the pandemic.

Agenda Item 2: Approval Of Minutes From Last Meeting

No amendments were submitted in advance of the meeting for the minutes of June 13. The minutes were not approved at the meeting of November 21 due to no-one being present at the previous meeting. The minutes were subsequently approved by the Secretariat.

Agenda Item 3: Opening Remarks By Professor Holland

Professor Elisabeth Holland is the Director of the Pacific Centre for Environment and Sustainable Development the University of the South Pacific. Professor Holland has more than 30 years of climate change research experience, including her participation in all six cycles of the United Nations' Intergovernmental Panel on Climate Change (IPCC) reports.

Ahead of her attendance to COP28 in the UAE, Professor Holland paid tribute to Scotland's leadership at COP26 in Glasgow and highlighted Alok Sharma's recent visit to the Pacific region. Professor Holland outlined that COP28 will be the first global stocktake following the successful efforts by the Pacific nations to implement a five-year review at COP.

Professor Holland highlighted the role of the ocean, the ongoing negotiations on loss and damage and the existential threat to island nations will feature heavily at COP28 where the International Resilience Network will be launched. The network will aim to create community resilience through energy, food, water independence and security as well as supporting academic, philanthropic, public and private collaboration.

Professor Holland also outlined the development of a 'bottom-up' model of climate finance and island community alliances as part of the International Resilience Network for climate mitigations and the development of low-carbon energy systems. Professor

Holland provided examples of the vulnerabilities of energy systems in the Pacific region and the work underway to develop micro-grid solutions through the International Resilience Network.

Professor Holland closed her remarks by emphasising the importance of involving young people as part of global efforts to tackle the climate emergency.

Agenda Item 4: Presentation By Neil Kermode OBE (EMEC)

Neil Kermode, Managing Director of the European Marine Energy Centre in Orkney since 2005, will now provide a presentation on EMEC's pioneering work to develop green hydrogen at the world's first facility for demonstrating wave and tidal converters.

Neil began his presentation by outlining Orkney's long-standing history of energy innovation, from early "electro-aero generators" tests in the 1950s, the establishment of Flotta Oil Terminal in the 1970s to the operation of the world's largest wind turbine (3MW) from 1984-97. Neil highlighted that Orkney had the highest level of CO₂ per person in the UK during the 1990s which led to the establishment of the Orkney Renewable Energy Forum in 1998, followed by the establishment of the European Marine Energy Centre.

By 2013, Orkney had become a net exporter of electricity generated by renewable energy. This led EMEC to explore energy storage opportunities with hydrogen from excess tidal generation to support the decarbonisation of transport. Neil outlined research by Xodus/Element Energy in 2016 which revealed the value of hydrogen was 30p/per kg turned back into electricity while it jumps to £4.60/per kg when propelling a ferry. This has led to EMEC's preference of hydrogen production for industrial and transportation decarbonisation as opposed to decarbonising domestic heating or electricity to the point of use.

Neil went on to outline the Eday tidal substation, Surf 'n' Turf project and BigHit project, HyDime project by EMEC in Orkney. Neil also discussed the HyFlyer project by EMEC with ZeroAvia to develop an integrated hydrogen-electric powered aircraft and the tidal generated green hydrogen by EMEC used for jet engine tests with Rolls-Royce. Finally, Neil outlined EMEC's work with IGTL to demonstrate the creation of synthetic gasoline with wave energy, using hydrogen produced from water by electrolysis. The Royal Air Force successfully tested this synthetic gasoline by EMEC for a full flight.

Agenda Item 5: Presentation By David Hogg (Arup)

David Hogg, Senior Energy Systems Consultant at Arup's Edinburgh office.

David began his presentation by outlining Arup's work to support the Scottish Government's Scottish Hydrogen Assessment Project which sought to determine a baseline for hydrogen of where and how it can be produced in Scotland. This led to the creation of the Hydrogen Action Plan and Hydrogen Policy Statement.

David ran through the hydrogen ecosystem in Scotland produced in the Scottish Hydrogen Assessment Project and outlined the roadmap for growth towards large-scale production of green hydrogen by the late 2020s and increasing the range of methods for green hydrogen into the 2030s.

David then outlined the role of hydrogen networks, highlighting the SGN H100 project in Buckhaven, Fife which focuses on hydrogen for domestic heating. David also highlighted the InchDairnie Distillery which used bioenergy to create hydrogen for the power of their boilers. However, this project has not proceeded due to commercial risk of gas networks not being converted for hydrogen transmission at this time, but Arup believes there are significant opportunities for the decarbonisation of Scotland's distilleries and wider industries with hydrogen. Arup also supported the assessment of electrolyzers for the Scottish Government to determine where the supply chain for hydrogen is in Scotland, with Forsyth Group, Hydrasun, Ames Goldsmith Ceimig, Aqualution and Howden identified as key players.

David concluded his presentation outlining key takeaways: 1) to think about hydrogen as moving energy through pipelines as opposed to electricity transmission to save cost. 2) to prioritise planning and consenting quickly with necessary resources. 3) to expand the economic opportunities for the supply chain with green hydrogen by exporting our skills.

AGENDA ITEM 6: Q&A ON PRESENTATIONS

Brian Whittle MSP thanked the three presenters and outlined how he believes hydrogen has huge potential across domestic and industrial use if we create the need which business will respond to cost effectively. David Hogg responded by outlining the need to drive down the cost of electricity/hydrogen and improve public perceptions of hydrogen. Neil Kermode added the need to always try through innovation and be prepared to accept risk.

Ronan Doyle appealed for hydrogen to be used where it is most effective, such as transportation and fuel-cell technology, and asked how Scotland can capitalise on Germany's investment in hydrogen market. David Cowdrey added that he agrees hydrogen is not suitable for domestic use and believes it could risk the rollout of heat pumps and distract from the strategic opportunities in uses such as energy storage and carbon capture.

David Hogg responded to confirm the recent Memorandum of Understanding signed between Scotland and Germany. David added that hydrogen won't be a solution for heating in every home similar to heat pumps, but that it shouldn't be ruled out as part of an energy mix.

Atzin Madrid asked about opportunities and implications of blue hydrogen. Paul Gill asked about opportunities to use hydrogen for decarbonising cement factories and opportunities to transport NH₃/ammonia. Chris Cook outlined the opportunity to send thermal power through heat networks to make Scotland more resilient.

Neil Kermode supported the comments by Chris Cook and agreed with Paul Gill that ammonia will have a use for shipping. Neil concluded by appealing for accelerated climate action. David Hogg added that Mitsubishi have heat pump manufacturing facilities in Scotland. In response to Atzin Madrid's question, David believes we need to continue blue hydrogen innovation with an acceleration of carbon capture technologies. Finally, David Hogg added the complications of the UK's gas networks incomplete records on what the network is made of.

Sarah Boyack MSP offered Professor Holland to provide some closing remarks. Professor Holland appealed for acceleration climate action and collaboration between Scotland and the Pacific. Audrey Nicoll MSP added that we face a challenge on exporting skills whilst retaining talent in Scotland.

Agenda Item 7: Next Meetings and AOB

The CPG agreed to the Secretariat's proposals for hosting the next meeting on the Heat in Buildings Bill followed by a joint meeting with the Circular Economy CPG on renewable energy circularity opportunities.

There was no AOB and Sarah Boyack MSP closed the meeting by thanking the presenters, all attendees and appealed for continued collaboration on the issues raised.