

Cross-Party Group on the Circular Economy

5th February 2025, 6:00-8:00 pm, on Zoom

Minutes

Present

MSPs

Maurice Golden MSP, MSP, Lorna Slater MSP

Invited guests

Catherine Gunby (Fidra), Dr Jake Lane, Jim McNulty, Dr David Tomkins, Eilidh O'Connor

Non-MSP Group Members and Guests

Alex Morrison (Keep Scotland Beautiful), Bruce McLean, Catherine Gemmel (Marine conservation Society), Catherine Gunby (Fidra), Zoe Clegg, Daniel Hale, Daniel Stunell, Efthalia Chatzisy, Max Folkett, Kenzo Harper-Wang, Jamie Clarkson, Jamie Page, Jannik Gieseckam, Joanna Cloy, Kathryn Gill, Kim Pratt (Friends of the Earth Scotland), Melissa Marques-McEwan, Natasha Kitching, Rowan Stanforth, Sheila Best, Victoria Darbyshire

Apologies

Bruce Reekie, James Trolland, James Mackenzie, Izzie Eriksen,

1 Welcome

- Group convener Maurice Golden MSP welcomed everyone and highlighted the theme for the evening as "Safe and Circular: How controls on chemicals and sustainable by design can enable a clean and safe circular economy".
- Minutes from the previous meeting were proposed by Catherine Gunby and seconded by Paul Smith.

2 Presentations

2.1 Dr Jake Lane: Sustainability Manager, Silentnight: A manufacturing / retailer perspective

- Dr Lane noted that Silentnight was the UK's largest mattress production facility, and that he would be focusing on flame retardants this evening.
- Dr Lane noted end of life issues with mattresses due to quilted panels which have to go to incineration due to minor failings on flammability tests - costing £120,000 a year with recyclers also facing the same issue.
- Not all flame retardants are equal according to a knowledge transfer partnership with the University of Central Lancashire to assess chemicals flame retardants for their smoke toxicity and environmental sustainability.
- In UK fire regulation tests for furniture, both the filling and the fabric have to be tested separately - the fabric has to be tested over a very combustible form that was used back in the 1980s – Silentnight was now on a journey to remove brominated flame retardants from headboards.
- Support needed on changes to furniture and furnishing fire safety regulations, including removal of defined standards that test individual components rather than the finished item, and it was explained that under chemical labelling there needed to be 'active ingredient' labelling.
- Dr Lane also noted support was needed with Extended Producer Responsibility (EPR) - an EPR scheme should encourage eco-design principles (like mono-materials, durability and recyclability) – Dr Lane further noted that there was support for EPR from the National Bed Federation and its members.
- Dr Lane provided statistics showing seven million mattresses were disposed of every year with only twenty four per cent of those recycled.
- Digital Product Passports would allow recyclers to identify which components of the mattress are chemically treated and which parts need to go to what level of waste management.
- In summation: Silentnight aim for safe by design; not all flame retardants are equal; changes to regulations would facilitate safe by design; regulatory help was required to ensure chemical labelling was fit for purpose and there needed to be industry and regulatory collaboration on EPR and digital passports.

Maurice Golden thanked Dr Lane for his presentation and highlighted the fact that many of the recommendations could be applied to other products.

2.2 Catherine Gunby: Executive Director, Fidra: An environmental perspective of chemicals and the circular economy

- An overview of Fidra and its work was provided before the main presentation.

- Chemical pollution has been identified as a key driver of biodiversity loss and also creates a barrier to a safe circular economy.
- Forever chemicals - also known as PFAS – are a persistent group of chemicals, being found in otters, drinking water and human blood amongst other things. For example, flame retardants found in gannets in eggshells on Bass Rock. Such chemical have been linked to serious health conditions, such as cancer, auto-immune diseases and more.
- The cost of cleaning up just PFAS alone has been estimated at as much as £9.9 billion per year, but this figure does not account for loss of resources to the circular economy.
- Chemicals get into the environment in multiple ways from wash off, contaminated sewage, landfill leaching, recycling and circular economy, chemical and product manufacturing and product use.
- A key question then is where the chemicals in the circular economy model are. But currently it isn't known where they are or where they are in the supply chain – such answers are hard to provide given a lack of transparency.
- The EU has estimated that three quarters of chemicals produced are considered hazardous to human health and the environment.
- Chemical regulation is set up to look at a particular chemical, examining it in a linear fashion e.g. a plastic cable could become cutlery, but this could include flame retardants which would not be appropriate for food contact.
- If we are to recycle safely, then we must know where the chemicals are.
- Valuable resources, such as treated sewage sludge, are being contaminated, and we recently witnessed Water UK call on the UK Government for better source control of PFAS.
- There is also the issue of non-essential chemicals in every-day items e.g. food packaging, receipts and school uniforms.
- There exist opportunities for policy to help address these issues, such as through production reduction targets, alternatives to harmful chemicals, safe and sustainable by design, traceability and transparency of chemicals and materials, chemical regulation that considers whole life cycle and group restrictions via EU alignment.
- The presentation concluded with a note that a new report would be released in the week following the meeting.

Maurice Golden thanked Catherine Gunby for the presentation and highlighted that the report could be shared with the CPG and encouraged those attending to share it on social media.

2.3 Jim McNulty: Managing Director, Optimum Eco Group (specialist company Restructa Ltd): A recycling perspective and technologies for managing chemicals in waste

- Optimum Eco Group had recently established two recycling facilities in Irvine, Scotland with both focused on WEEE. Since these were established, the market for electronics

has declined so Optimum Eco Group (OEG) have expanded their remit to cover a wider group of electronics.

- Discussing managing televisions, it was explained that once they were unable to be sent to landfill after 2005, there then needed to be a recycling market.
- One of the key problems is that everything is dismantled by hand to maximise recovery and ensure no cross contamination.
- It was possible to recycle plastic until 2019 legislation around POPs with a warning from SEPA coming very late. Overnight, all the plastics had to be classified as hazardous and incinerated, and guidance points recyclers towards incineration.
- Around forty tonnes of plastics were generated each month with a value of approximately £100,000. The removal of this due to the legislative changes has created a cost rather than a benefit for the business.
- Sink and float was also proposed to separate plastics, but this assumes that POPs will be in heavy plastics, but OEG haven't found this to be the case. It means that plastics contaminated by POPs mix with others and end up back in the supply chain.
- OEG had brought in an XRF gun for analysing bales of plastic for retardants. It allowed for a lot of data to be gathered but it was found to be incorrect. In addition, the gun wasn't considered safe due to the radiation being emitted.
- Refining how the XRF gun was used took three months, but OEG can now accurately determine TV waste categories. How to use the information gathered was the next step, and an app was developed to determine TV models based on label.
- The result is that OEG can now recover 72% of plastics as they are below the POPs threshold, and the pp can be used by other recyclers.
- OEG worked with a university to work on this solution and this has also allowed for academic as well as commercial outputs.

2.4 Dr David Tompkins: (Associate Director, WSP): A water sector perspective

- Dr Tompkins explained WSP was a global environmental consultancy, and that he would be discussing chemicals in bioresources, such as sewage sludge (both treated and untreated).
- Applying sewage sludge to land is very contentious and becoming more so. Science does not allow us to model the risks at the moment, which means using proxies, assumptions and constantly managing gaps.
- Biosolids are a significant contributor to phosphorus in soils. Phosphorus is not a renewable resource, so it must be used wisely. This creates a bind in recognising the risks and benefits of using this resource, and there needs to be a solution for removing hazards out of the resources upstream.
- Looking at Water UK and PFAS, there is considerable risk and cost of treating and contaminating biosolids. Solutions will be costly, and, ultimately, source control of PFAS is required.

- Dr Tomkins provided a snapshot of water recovery options in the water cycle. Opportunities exist across the cycle e.g. dosing with iron salts during flocculation and treating water discharge. But opportunities are not being realised because of commercial and regulatory challenges. It was noted though that many opportunities are yet to be realised, and some will be easier and cheaper to apply than others.
- Source control depends on the pressure asked of the system. There are different sources of wastewater e.g. households, industry, and tankage leachate. But if we don't know where the water is coming from, it makes it difficult to correct the problem. PFAS comes in and goes through the process and into biosolid products.
- 60,000 tonnes of dry solids go to farmland in Scotland every year; with some going to land restoration and incineration too. There are lots of water treatment and sludge centres across Scotland. The sludge centres operate on a hub and spoke model, with them being moved by road from water treatment sites. In the near future, anaerobic digestion will start replacing incineration, and there are opportunities for community ownership and management of water treatment sites.
- Assessing the current agricultural route, sewage sludges account for around 5% of the phosphorus going to Scottish farming. Unfortunately, there isn't robust data to show where to intervene to remove certain pollutants.
- Main source of PFAS in water system might be landfill leachate, but again, the data isn't strong enough in this area.
- In the EU, EPR for wastewater will see 80% of costs passed back to producers, but the impacts are, as yet, unknown.
- Some types of incineration won't remove all chemicals. Cellulose recovery is an interesting area of research, as is biopolymers, and there is also scope for looking at heat recovery from sewers. However, potential chemical hazards and where they arise must be determined.

2.5 Eilidh O'Conner and Kenzo Harper-Wang, Vegeware: A Business Case Study - designing out forever chemicals from compostable food packaging

A brand of certified compostable food service packaging, which is distributed in over eighty countries. Everything is certified compostable, so there is only a very slim chance that it will be recycled.

- This way all the food scraps and product can be composted together.
- Vegeware has run their own waste collection service, Close the Loop, since 2016 with collections across central Scotland.

How Vegeware removed PFAS:

- These are substances that resist grease, oil, water and heat and which won't break down in the environment for tens of thousands of years.
- The EU will ban PFAs in food packaging above a certain threshold by mid 2026, but there no plans for such limitation of PFAS in food packaging in the UK.
- Vegeware began in 2019 in the US amidst consumer concerns with the company subsequently being brought over to the UK. At the start of their R&D journey, they tested more than thirty materials with only two coming out without PFAS. Vegeware changed the chemistry and added vision cues to alert consumers that there's was a different product with the company absorbing the price to ensure consumers would not be priced out.
- A number of challenges exist, such as low consumer awareness in the UK market and there is customer reluctance to change products. Also, the products are not PFAS free, it's just that PFAS have not been added in, and there is no standardised term for advertising not including PFAS. Additionally, the performance of PFAS products is better, and other strains of fluorinated compounds have started to appear, but it takes years to discover the negative consequences of new compounds on humans.
- There has been genuine interest from consumers with a lower barrier to conversion, and Vegeware is focused on the 80% who are interested in converting. A lot of work goes into making sure PFAs are not included, such as carrying out spot-checks., and ultimately demand pushes R&D forward.

3 Audience questions

- Kim Pratt asked about the lack of regulations in this area for those innovating, and what might be driving innovation e.g. consumer awareness, potential regulation? She asked what regulation would help.
- Kenzo Harper-Wang explained that, for Vegeware, it was a case of wanting to do the right thing when they heard about PFAS.
- Dr Lane said that Silentnight wanted to be good custodians for the planet. He pointed to the example of eco-designs in Europe, saying they were the regulatory champions. In terms of what was needed, Dr Lane mentioned the inflammatory regs, saying they wer outdated and needed to change.

The meeting was then brought to a close with a note that details of the next meeting would follow in due course.