**APPG on Microplastics
Virtual Roundtable on Microfibre Filtration in Washing Machines
19.01.21
Minutes of the APPG**

**Attendees**

Alberto Costa MP, APPG Chair
Harriet Main, Parliamentary Assistant to Alberto Costa MP
Fiona Thomas, APPG Secretariat, the National Federation of Women’s Institutes
Alexandra Barker, National Federation of Women’s Institutes
Aanchal Mann, National Federation of Women’s Institutes
Tobias Arno, National Federation of Women’s Institutes
Scott Mann MP
Carol Monaghan MP
Lord Brennan QC
Dr Imogen Napper, University of Plymouth
Dr Natalie Welden, University of Glasgow
Dr Mark Taylor, University of Leeds
Dr Priscilla Carrillo-Barragan, Dove Marine Laboratory, University of Newcastle
Leah Riley Brown, British Retail Consortium
Sophie Mather, The Microfibre Consortium
Felicity Bone, Nutmeg, Morrisons PLC
Jennifer Trittschuh, Fisher and Paykel
Kevin Considine, Samsung PLC
Ian Moverley, Whirlpool Corporation
Gianluca Cecchinato, Whirlpool Corporation
Professor Andrej Krzan, Planetcare
Gemma Austin, BSH Home Appliances
Karl Ullrich, BSH Home Appliances
Kagan Kurtkaya, Arcelik
Frank Thomas, AMDEA
Christian Cullinane, Xeros Technology PLC
Martin Grieg, Xeros Technology PLC
Avril Sainsbury, Cleaner Seas Group
Andrew Mullen, Beko PLC
Rachael Miller, Cora Ball/Rozalia Project
Robyn Lockyer, Industry Acting on Microfibres
Rupali Nahar-Williams, Keep Britain Tidy
Richard McIlwain, Keep Britain Tidy
Dr Laura Foster, Marine Conservation Society

**Minutes**

The Chair welcomed all attendees to the meeting and invited stakeholders to give an update on their ongoing projects.

Dr Laura Foster from the Marine Conservation Society outlined the work of the MCS on washing machine filters and on sludge. Laura outlined the problems associated with the use of sludge from the waste water treatment process in agriculture, including the problems caused by spreading sludge containing microfibres onto agricultural land and products. Laura outlined that it was imperative that the sludge coming from waste water treatment works is ‘fit for purpose.’

Christian Cullinane, Xeros Technology PLC, outlined the work of Xeros on their washing machine filter, designed to capture microfibre emissions from laundry loads. The device has been tested by the University of Plymouth. Christian emphasised the need for a holistic solution to reduce microplastic fibre emissions. Xeros have partnered with a significant washing machine manufacturer to develop a solution to microplastic fibre emissions in commercial washing machines. Christian outlined that Xeros have been involved in conversations with the French Government (on mandatory washing machine filtration systems in all new for purchase washing machines by 2025.) Christian concluded by outlining that any solution to the problem needs to be cost-effective to the consumer, and that his belief that there is a part for legislation to play in this to help reduce microfibre emissions generated from laundry.

Dr Imogen Napper, University of Plymouth, gave an overview of her work at the University of Plymouth to study fibre fragmentation and microfibre emissions from washing machines. Imogen outlined that the University of Plymouth found up to seven hundred thousand fibres could come off a typical clothes horse. Dr Imogen outlined her and the University of Plymouth’s work on the issue with National Geographic and Sky Rescue to test washing machine microfibre filtration devices. Dr Imogen outlined that despite her work on microfibre washing machine filtration, there is no one quick, easy fix to this problem, and stakeholders from different sectors and industries need to find collective solutions to the problem.

Dr Natalie Welden, University of Glasgow, outlined her work with the organisation ‘Inheriting Earth’ and ‘Matter.’ With those organisations, Dr Natalie had applied for Innovate UK grants in order further explore how to build a regenerative microplastics washing machine filter. Dr Natalie outlined that her role in this was to provide in-house testing for each of the new models of microfibre filter produced. Dr Natalie outlined that the project is now moving forward with the next series of tests, working collaboratively with ‘Earth Echo’ and Arcelik. Dr Natalie echoed Dr Imogen’s comments, outlining that there was no one unique solution or pathway to take to solve microplastic fibre pollution.

Professor Andrej Krzan, Planetcare, outlined the recent work of Planetcare on microplastic fibre filters, and discussed that Planetcare were the overall winners of the Zero Plastics Challenge, organised by the Rise Institute in Sweden. Planetcare have also begun working on a project with the European Innovation Council to develop a built-in washing machine microplastic fibre filter.

The Chair outlined that as a legislator, his predominant interest is to ascertain whether or not there is a need or requirement to change the law to improve on the existing and upcoming environmental regulations. The Chair outlined that manufacturers themselves may want to improve on the offer they have to consumers without the need for legislation. The Chair invited stakeholders to outline whether they thought that legislation is required, and their views on the tabled French microplastic fibre legislation.

Sophie Mather, The Microfibre Consortium, reiterated that microplastic fibre filters within washing machines are not the complete answer, and there are many other elements to the microfibre problem. Sophie outlined that she thought it would be useful for the group to look at the immediate/short-term, where she thought the filtration conversation could fit, and then longer term identify areas that we need to assess and take responsibility on this issue in a number of other ways.

The Chair thanked Sophie for her comments and outlined that the focus of the ongoing APPG on Microplastics session was to assess the need for microfibre filtration, and whether there’s a need to legislate on this. The Chair moved to the second part of the agenda, and invited reflections on the associated impacts of recent French circular economy laws on microplastic fibre emissions from laundry.

Frank Thomas, AMDEA, outlined that in addition to the upcoming French legislation on mandatory microfibre filtration systems in all new-purchase washing machines by 2025, there is also upcoming draft legislation in Luxembourg that would require the same. Frank outlined that within an EU single market context, there is an EU requirement not to have technical barriers for trade. Frank outlined his concerns that if these changes are made, they may not be compatible with EU single market legislation.
Frank outlined that APPLiA- a pan-European trade association for domestic appliance manufacturers- have raised these concerns with the European Commission.

The Chair outlined due to his background as a solicitor, he has previously considered Frank’s concerns. The Chair outlined that within the European Union, member states can also have their own legislation, using the UK’s requirement for a ‘three pin plug’ as an example. Alberto outlined that he believed that varying technical requirements between EU member states would not be an insurmountable problem.

Frank Thomas, AMDEA, outlined that for manufacturers of a washing machine choose to demonstrate compliance with CE safety marking by having a third party to report it, the third party report can include alternative constructions of varying plugs. Frank suggested that this would be a different requirement to a microplastic fibre washing machine filter, which may require for the tool to be redone for different models and manufacturer, just within Luxembourg. Frank suspected that the European Commission may invest the matter.

Ian Moverley, Whirlpool, outlined that manufacturers and the European Commission would have to work together to find a solution on any associated impacts to any varying compliance schemes between EU member states and third countries. On the legislation question, Ian outlined that some legislation may be beneficial in order to provide consistency and clarity for producers of domestic appliances. However, Ian outlined that ahead of any legislation being put in place, more work would need to be done on the definition of what it is people are looking to do. Ian outlined that as Whirlpool Corporation’s trade association, the AMDEA had been leading on this work on behalf of Whirlpool Corporation in order for clarity and consistency in communications with consumers. Ian outlined that there needs to be a clear, evidenced benefit to consumers before they adopt any additional technologies.

Kevin Considine, Samsung Electronics, echoed the previous comments made by Frank and Ian. Kevin discussed the legislative developments in France and Luxembourg, and how there is already a framework in place under eco-design regulations to look at non-energy related issues. Kevin outlined that as one of the largest investors in research and development in the world, Samsung is already innovative with many of its products, especially in their domestic appliances. Kevin outlined his concerns that addressing microplastic fibre emission from laundry would only be a small part of the microplastic problem. Kevin outlined his concerns that the full environmental impact and potential knock-on effects of dealing with microplastic fibres would cause greater problems than a filter would solve, including effects on water and energy use. Kevin outlined that he would like to see more research and evidence developed on these broader environmental issues stemming from the work of the APPG on Microplastics.

Andrew Mullen, Beko, stated that he agreed with the comments made by Whirlpool and Samsung. Andrew outlined the work of Beko on this issue and the upcoming launch of their washing machine with an integrated washing machine filter in the first half of 2021. Andrew outlined Beko’s concerns of the consumer disposal of microplastic fibres when they are captured by washing machine filters as an incorrect method of disposal could result in microfibres being released back into the environment. Andrew also agreed with the reflections made by Samsung around what happens to microplastic fibre emissions in commercial settings, like laundrettes. Andrew also agreed with Samsung’s reflections on the associated environmental impacts of using washing machine filtration devices, and the potential cost consideration to consumers.

Frank Thomas, AMDEA, outlined the recent research paper from AHAM, the US Trade Association for Domestic Appliances which outlined that the most commonly used microfibre filters in America have caused a roughly 80% increase in energy use during a wash cycle, and a significant increase in water during a wash cycle.

Avril Sainsbury, Cleaner Seas Group, gave an overview on the work of the Cleaner Seas Group on microplastic fibre filters. Avril outlined that among other solutions, Cleaner Seas Group have developed both a retrofit and integrated washing machine filter. Avril stated that the filters are nearing completion of a second round of research at the University of Plymouth, and the filters will last for 100 washes. Avril agreed that whilst microplastic fibre filters are part of the solution, they are not the whole solution, and Cleaner Seas Group have been working with a variety of stakeholders and would be interested in engaging further stakeholders, including textile manufacturers.

Scott Mann MP outlined that he was keen to support the work of the Cleaner Seas Group as it was a business in his parliamentary constituency, and he wanted to see a clean ocean due to his constituency proximity to the sea.

Lord Brennan QC outlined that whilst he was in general agreement with the progress of the meeting thus far, he believed that it was right to concentrate on one specific area at a time. Lord Brennan QC suggested that on this issue, legislation should be very carefully considered and taken one step at a time.

Rachael Miller, Cora Ball/Rozalia Project addressed the policy makers and legislators present and asked whether or not legislation designed to eliminate microplastic fibre emissions from dryers should be considered as part of the same conversation as microplastic fibre emissions from washing machines, or whether it should be a next step following legislation on microplastic fibre emissions from washing machines?

The Chair referred to a previous point made by Kevin at Samsung in which it was stated that microplastic fibre filters in washing machines would only be addressing a small part of the microplastic fibre problem. The Chair outlined that by the very nature of the discussion, the APPG on Microplastic meeting is working to identify one form of microplastic in one industry that is known to be causing pollution. The Chair reflected that the APPG on Microplastics still needs to start somewhere. The Chair discussed the recent developments on the 5p levy on plastic bags, and outlined that whilst plastic bags are not the cause of all plastic pollution, they have become recognisably totemic of plastic pollution. The Chair outlined that he would advise to start with washing machine filtration systems, and then move onto microfibre filters onto electric dryers, and then consider other forms of filtration mechanisms. The conversation could then move upstream onto the production of the original textile. The Chair outlined that what he didn’t know currently is the extent of the microplastic pollution problem through washing machines, commercial, or domestic appliances. The Chair outlined that the APPG on Microplastics could start in a humble fashion by targeting the issue with manufacturers on board, and use existing industry examples to help businesses identify the appropriate filtration that they should be adopting at the manufacturing stage rather than the problem worsening away from the legislative process.

Rachael Miller, Cora Ball/Rozalia Project, outlined that starting with microplastic fibre filtration in washing machines would provide a blueprint for other domestic appliance manufacturers to use should they want to include microfibre filters in their own machines, like in electric dryers.

Carol Monaghan MP outlined that whilst legislation can be used to force things forward, it’s often public pressure that causes things to actually shift. Carol reflected her thoughts that legislation should almost be a last resort in this context. Carol asked about what sorts of work has been done to raise awareness amongst members of the public, and the extent to which manufacturers are looking to help solve the microfibre plastic emission problem themselves, including through washing machine filters and through the types of fabrics they are using in clothes, and promoting themselves as an environmental alternative to their competitors.

Dr Natalie Welden, University of Glasgow, asked attending stakeholders to consider the timelines involved in legislative change, and for all attendees to keep advocating for behavioural change. Dr Natalie reflected that even with legislation in force by 2025 on microplastic fibre filters in new purchase washing machines it is likely to take a longer time for these changes to be reflected in people’s homes. Dr Natalie outlined that during her lifetime she had never bought a new washing machine. Using this example, Dr Natalie felt that there would be an extended period of time over which microplastic fibre filter legislation would not generate coverage.

Dr Natalie discussed that even if every home in the UK had a microfibre filter in their washing machines, the UK does not yet have the infrastructure to cope with the correct disposal of the captured microfibres. Dr Natalie illustrated her point with the example of agricultural waste disposal in the Dumfries and Galloway region of Scotland, and the lack of infrastructure support present to assist farmers in getting rid of agricultural waste.

Dr Natalie outlined that focussing on elements of the microfibre filtration process without consideration of the waste disposal network and infrastructure is insufficient. Dr Natalie reflected that should microplastic fibre filters be made mandatory in law, there needs to be plenty of pre-work with consumers to move people into a position where they accept the use of microplastic fibre filters. Dr Natalie outlined that whilst we have expertise within the APPG to help create practical changes, the APPG on Microplastics also needs to consider public behaviour and education projects on microplastic fibre emissions. Dr Natalie discussed a recent report that Professor Thompson, the University of Plymouth, Dr Mark Sumner (University of Leeds) and Dr Natalie had put together with WRAP focusing on the production of fibres from the UK during a year.

Carol Monaghan MP outlined that work on the issue of plastic bags and cotton buds was driven by public pressure for change. Carol outlined that as a washing machine isn’t an item that households buy frequently, she would personally consider paying £50 more for a washing machine with an embedded microplastic fibre filter if she knew that the filter would help cut her emissions into the sea. Carol asked if there was any appetite amongst manufacturers to bill themselves as an environmental alternative?

Andrew Mullen, Beko, outlined that there was consumer demand for microplastic washing machine filters. Andrew reflected on the points previously made by Dr Natalie, and outlined that in meetings with DEFRA, domestic appliance manufacturers are being told that they need to make products for sale last longer, and there should be more reuse than recycling. However, Andrew reflected that people don’t change washing machines that often. Andrew outlined that current and future legislation is encouraging a change in washing machine even less often, and many washing machines will have a second or third life. As such, legislation should be a very, very long term solution. Andrew reflected that what drives change is consumer demand, and giving people the opportunity to buy something and the belief that what they’re buying is so important that they must do it. Andrew reflected that there will still be the demand for second-hand products, but the market would drive that. Andrew concluded by saying that things would get done much quicker if the consumer demand is generated as opposed to relying on legislation.

Kevin Considine, Samsung Electronics, outlined that the energy label plays little to no part on influencing consumer purchasing, and so Kevin would be reluctant to make the leap of faith to say that consumers who may be buying a product under distressed conditions would be prepared to spend more money to include a washing machine microplastic fibre filter.

Felicity Bone, Morrisons PLC echoed Kevin’s comments, reflecting that consumer answers on ethical purchasing can vary depending on the situation they are in when they are asked. Felicity outlined her concerns on sending consumers mixed messages on fabrics and textiles to opt for to help eliminate the microfibre plastic problem.

Dr Mark Taylor, University of Leeds, outlined his work and the work of the University of Leeds on microplastic fibres, including work with The Microfibre Consortium. Dr Mark also outlined his work with Working Group 37, the Senate Committee, on producing a measurable standard for measuring microfibre release in laundry.

Dr Mark reflected that in conversations with the three British water authorities, all three authorities have stated that they do not sell waste water treatment sludges for use in agriculture as they instead take them to aerobic digesters in order to turn them into solid energy cakes. These can act as soil stabilisers, rather than contributors to the microfibre problem. Dr Mark outlined that the UK water boards conducted a recent survey assessing the effectiveness of microplastic fibre filtration in waste water treatment plants, and despite the survey’s flaws, the survey found that the filtration processes were 99% effective, as opposed to the 95% effective rate that was quoted earlier. Dr Mark suggested that should this survey be correct, it is unclear whether microplastic fibres found in the oceans would be coming from washing machines. Dr Mark outlined that in Rachael Miller’s study of the Hudson River, lots of microfibres were found in the river upstream where there were no waste water treatment plants.

Dr Natalie Welden highlighted that although waste water treatment plants may capture 99% of microfibres, the 1% getting through the filtration systems is still a huge amount of fibres entering the environment. Dr Natalie referred a recent paper by Brain Quinn and Ffion Murphy that evidences this.

Dr Mark Taylor, Leeds University, stated that he didn’t think that Dr Natalie’s explanation explained the high concentration of microfibres found upstream from waste water treatment plants, and there must be other sources of microfibres.

Dr Natalie Welden agreed, and outlined that papers have been recently produced that evidence airborne contamination and transport and how the fibres move around. Dr Natalie outlined that as it’s a lot harder to filter the air around people and the fibres off people’s bodies, washing machine filters in laundry would be a good place to start.

Robyn Lockyer, Industry Acting on Microfibres, outlined the background and work of Industry Acting on Microfibres. Robyn outlined that the group exists to bring together co-ordinated industry action already occurring. Robyn listed some of the members of the Industry Acting on Microfibres, which included John Lewis, Tesco and Primark, and water groups like Severn Trent water, Water UK to ensure that the impacts of microfibres are assessed right across the supply chain.

Jennifer Trittschuh, from Fisher and Paykel, outlined that the information that she has picked up about the environmental impacts of microfibres would warrant upstream filtering at source at the appliances. Jennifer discussed that many of the microfibres emitted into the environment act as magnets for persistent organic compounds, once they enter the influent for waste water treatment plants and can cause environmental and chemical harm. Jennifer reflected that these twin harms are an even stronger driver for stopping microfibres from entering into the environment.

Dr Natalie Welden, University of Glasgow, outlined that it’s hard to tell all the effects of persistent organic pollutants from plastics as there are lots of different types of plastics and polymer types. Dr Natalie explained that persistent organic pollutants are of a similar construction to grease in a washing up bowl, with both substances wanting to cling to the plastic itself as opposed to being in the water. Dr Natalie reflected that if these plastics are going out into the environment and are fairly clean, they may be acting as a sponge and taking this out of the environment itself. Dr Natalie questioned whether we are generating the right conditions to cause chemicals to be raised from the plastics and to into environments where they may be ingested by organisms. Dr Natalie said that this is a difficult thing to judge, as it is difficult to model in the lab and to find evidence of in real world settings. Lab tests have shown mixed results depending on the plastic and depending on the pollutants, and there isn’t enough grant money available to scientists to do this work. Dr Natalie reflected that this is something for those working on microplastic fibre emission to bear in mind and consider in the long term.

Dr Mark Taylor outlined that different structures of fibre can make a fibre more or less likely to absorb chemical pollutants.

Dr Natalie Welden asked that if the chemical pollutants are not coming out of the fibre, do we mind that they have been absorbed?

Dr Mark Taylor outlined that fibres could be eaten by fish and other aquatic life, leaving contaminants in the fish’s stomach.

Dr Natalie Welden suggested that the contaminants left behind in the fish’s stomach may not be at a high enough levels to cause damage.

Dr Mark Taylor referred to a recent paper he had read on contaminants and pollutants passing through the digestive systems of cod without any sign of harm.

Dr Natalie Welden outlined that animals with an uncomplex gut structure will allow plastics and pollutants to pass through their systems easily, without causing any large scale damage to the aquatic life. Other organisms like invertebrates and smaller organisms including langoustines with complex gut structures are more likely to collect plastics to larger levels, and the longer the plastics are in there, the greater the chance of a direct effect.
Dr Natalie outlined that this is a very complex picture which includes a lot of variables including the concentration of the chemicals and plastic, what the organism has been exposed to, and this may make justification of any changes in laws and legislation tricky, especially when consumer groups without access to disposable income are being asked to spend further money on a microplastic fibre filter.

The Chair outlined that the core debate on this issue is the one just displayed between Dr Mark and Dr Natalie. The Chair reflected that we can all reasonably conclude that we are polluting the environment with plastic and microplastic. The Chair highlighted that even the definition of the word ‘microplastic’ was contentious due to the different types of microfibres present.

The Chair outlined that as a legislator, he has to ask what proportionate, cost-effective and environmentally beneficial measures can be taken to push society in the right direction. The Chair summarised that there was a sufficiently strong enough argument for legislators to follow to put in place microfibre filters in washing machines. The Chair reiterated the precedent of regulating and legislating on disposable plastic bags, which are totemic of wider plastic pollution. The Chair reflected that the APPG on Microplastic stakeholders had accepted that there is an issue that we are not totally satisfied yet as to how big the issue is, and the complete negative environmental impacts.

The Chair asked the stakeholders whether it was sensible for the APPG on Microplastics to give some serious consideration on whether we should try and narrow down the issue temporarily to focus on the efficacy of microplastic fibre filtration in UK domestic and commercial washing machines.

Kevin Considine, Samsung Electronics outlined that whilst there is an issue with microfibres, the best solution to this is yet to be decided. Any solution must be underpinned with a strong evidence base looking across the various scenarios and pathways for microfibres to enter into the environment.
Kevin outlined the principle of Extended Producer Responsibility and the polluter pays principle, and suggested that the polluter has the responsibility to take action on microfibre release.
Whilst domestic appliance manufacturers are part of the solution, the wider impacts on the domestic appliance industry would have to be considered before action is taken.

Harriet Main, Parliamentary Assistant to Alberto Costa MP, outlined the Government will be extending Extended Producer Responsibility to plastic packaging in the next few years, and in future years will be extending this to textiles and tyres.

Christian Cullinane, Xeros Technology PLC, outlined that there is definitely a desire to address the microfibre problem. Whilst there are lots of nuances to the issue, we need to find a way to stop the flow of plastics into the oceans. Christian outlined that as research by people on the call has indicated that a third of the problem is coming from laundry, microfibre filtration in washing machines would be great initial way to cut into this problem very quickly. Christian reflected that legislation would bring clarity and a level of performance, and outlined that Xeros Technology are supportive of legislation on this issue. Christian outlined that behaviour change campaigns would have a major impact on microfibre emissions, but there is also a role for UK legislation on this, mandating microfibre filtration in washing machines.

Harriet Main, Parliamentary Assistant to Alberto Costa MP, outlined that the APPG Secretariat (the National Federation of Womens’ Institutes) raise WI member awareness of the problem of microplastic fibre pollution. Harriet mentioned the APPG on Microplastics Twitter account, and encouraged all stakeholders to share information posted on the Twitter account.

Dr Laura Foster, Head of Clean Seas at the Marine Conservation Society, outlined the Marine Conservation Society’s work on sludge from waste water treatment centres. Dr Laura Foster stated that the APPG discussion emphasises that we need to find the upstream solution to microplastic fibre pollution. Dr Laura outlined that as washing machines in people’s home are identifiable point sources, the use of a washing machine filter is a feasible, trackable source of reducing or eliminating microplastic fibre emissions.

Andrew Mullen, Beko, outlined the importance of legislation not being designed to make manufacturers seem to be a cause of the microplastic fibre problem. Referring to Christian’s point, Andrew suggested that a faster solution to microfibre pollution could be to legislate so that every new build house has to have an external filter fitted, or every householder has to fit an external filter for their home if they didn’t have a washing machine with a microfibre filter in it. Andrew reflected that this is unlikely to be popular with consumers.

The Chair summarised the APPG’s discussion, reiterating that he welcomed the views of manufacturers on this issue, and the purpose of the APPG is for all parties to come together to find a solution. The Chair outlined the APPG’s next steps, asking all attendees to send across a two page summary of their individual or organisational position on microfibre filters by the 5th of February 2021 to be summarised for use in a report.

The Chair thanked all attendees for their time and closed the meeting.