

The SAFER Research Project

What is the SAFER project? The SAFER research project is a collaboration between the School of Physics at the National University of Ireland Galway (NUIG) and the University of Birmingham's School of Geography, Earth, and Environmental Sciences. It is funded by the Environmental Protection Agency of Ireland (EPA) and runs from February 2019 to end of January 2022.

What does SAFER stand for? SAFER stands for Screening of the Irish Waste Stream for Persistent Organic Chemicals

What is the background to the SAFER project? Ireland is working towards establishing a Circular Economy in which resources are kept in use for as long as possible. Maximum value is extracted from resources whilst in use, with products and materials (such as plastics) recovered and regenerated at the end of each service life. For example, this means that the plastic from the TV set, or the foam from the sofa that you throw out, is recycled to make new products. Recent research has shown that plastic and foam from these old products are being recycled to make items such as childrens' toys. This can present a problem as some of these old products contain chemical additives that are now banned and thus the presence of these additives in new products are of concern.

What are the objectives of the SAFER project? To prevent waste products that contain these banned additives from being recycled, legal limits are now set on the concentrations of such additives in waste. Waste articles that contain concentrations of additives above these limits cannot be recycled. So far, so good... The problem is that measuring concentrations of these additives to check whether they comply with the limits is costly and time-consuming and will likely prevent recycling of usable materials. In a previous EPA-funded project (WAFER), the project team tested a quicker and cheaper method of measuring these additives. While they found this method to be broadly effective, they highlighted that in a substantial number of cases, it incorrectly identified an article as unsuitable for recycling. One of the key objectives of the SAFER project is thus to evaluate a possible approach to minimise this problem and thereby maximise the quantity of waste that can safely be recycled. The WAFER project focused on one specific type of chemical additive (brominated flame retardants - BFRs). Unfortunately, there are other classes of chemical additives that may also prevent recycling of waste plastics if present at levels that are too high. The SAFER project thus extends the range of chemical additives further to include others that are likely to be present in waste plastics. This information will help the EPA develop policies to maximise recycling of waste plastics in ways that prevent unwanted chemical additives contaminating new products made from recycled material.

Where can I find out more about this project? To gain more understanding of the background to the SAFER project, we recommend reading the WAFER project report that is free to download. If you're pressed for time, then we recommend reading the Executive Summary first.

Please check back regularly to the SAFER project website to keep up to date with progress.