

To the
Executive First Vice-President Frans Timmermans
Energy Commissioner Kadri Simson
Industry Commissioner Thierry Breton
Environment Commissioner Virginijus Sinkevičius
Rue de la Loi 200
BE-1049 Brussels

Brussels, July 2020

Subject: PFAs Call for Evidence and the Hydrogen Strategy

Dear Executive First Vice-President Timmermans,
Dear Commissioner Simson,
Dear Commissioner Breton,
Dear Commissioner Sinkevičius,

On July 8th, the European Commission published its Hydrogen Strategy for a climate-neutral Europe, putting Europe at the forefront of climate action as well as hydrogen deployment.

While the hydrogen sector is obviously thrilled about the Hydrogen Strategy and eager to implement it, we now learned about a policy initiative that could jeopardize it, if not enough attention is paid to its implications.

This initiative is the EU call for evidence to restrict all chemical substances called “per- and polyfluorinated alkyl substances” (PFAs in short), including fluoropolymers. This EU PFAS Strategy is a proposal of five countries (Germany, the Netherlands, Denmark, Sweden and Norway) to restrict and ultimately ban the manufacture and use of all PFAs in Europe.

While this is certainly not the intention of the promoters of the PFAs Strategy, it could seriously hamper the implementation of the Hydrogen Strategy. Indeed, the success of the Hydrogen Strategy relies essentially on two key technologies: electrolyzers that transform renewable electricity into hydrogen and fuel cells which transform hydrogen into electricity and heat. The core of both technologies is an electro-chemical reaction through a membrane. A very large proportion of electrolyzers and fuel cells (and in some applications 100%) are based on Polymer Electrolyte Membrane (PEM).

The unintended impact of an insufficiently considered ban on all PFAs would be to severely inhibit the manufacture and use of PEM fuel cells and electrolyzers, because at their heart they depend on gas-impermeable proton-conducting fluoropolymer membranes. Moreover, there are no alternatives.

The danger of this PFAs Strategy is that it envisages a ban on all PFAs without distinction. Within the very large family of PFAs, which includes around 4700 substances, it is useful to distinguish some sub-categories. Among PFAs, fluoropolymers, which are used in PEM electrolyzers and fuel cells, constitute a distinct category as they are solid, inert, stable, safe,

lasting, versatile, and don't degrade into other PFAs. They do not pose any significant threat to human life or to the environment.

Moreover, for electrolyzers and fuel cells there is an overwhelming economic imperative to recover PEM stacks at the end of the life cycle in order to reclaim and recycle the expensive PGM catalysts contained within the membrane/electrode assemblies; hence it is very unlikely that any associated fluoropolymer component will enter the general waste stream. In plain language, fluoropolymers are simply a speciality plastic that underpins PEM electrolyzers and fuel cells and could be put into the OECD "polymers of low concern" classification. Said fluoropolymers should be classed as such.

Let's remember what is at stake. First, the European Hydrogen Strategy fixes the ambitious objective of 40GW electrolyzers in 2030 and 10mt of renewable H₂ by then, which requires a rapid scaling up. Second, Europe is the industrial leader in hydrogen technologies and the European Commission identified hydrogen as a strategic value chain. We must ensure consistency across different EU policies and avoid undue barriers to the uptake of electrolyzers and fuel cells.

For these reasons, Hydrogen Europe urges the European Commission and the promoters of the PFAs strategy to consider the impact that such initiative could have on the Hydrogen Strategy and analyse the possibility to distinguish the treatment of PFAs on the basis of their environmental impact and the availability of alternatives.

Hydrogen Europe and its members are available to discuss further this complex topic.

Sincerely,



Secretary General



Managing Director