



U.S. HOUSE OF REPRESENTATIVES COMMITTEE ON
SCIENCE, SPACE, & TECHNOLOGY

Opening Statement

Chairwoman Haley Stevens (D-MI)
of the Subcommittee on Research and Technology

Research and Technology Subcommittee Hearing:
Benign by Design: Innovations in Sustainable Chemistry
Thursday, July 25, 2019

Good morning and welcome to our distinguished panelists. We are here to discuss a very important topic, one that has enormous potential to change the way we protect human health and the environment.

This hearing is an opportunity to discuss the opportunities and challenges for expanding the use of more sustainable chemicals and processes throughout the chemical science and engineering enterprise. I look forward to a discussion about the market drivers for sustainability in the chemical industry, the integration of sustainability in chemistry education, and the role of the Federal government in supporting research and commercialization of these innovations.

Chemistry touches every aspect of modern society. Nearly every object you see contains materials derived from or processed by industrial chemicals. Innovations in chemistry have improved the performance of countless products we use every day – including cars, kitchen appliances, and clothing. These improvements have increased our productivity and our quality of life immeasurably.

Unfortunately, many of the most widely used industrial chemicals are potentially hazardous to human health and the environment. PFAS, for example, has become an environmental and public health crisis in my home state of Michigan, which may have more than 11,000 sites contaminated with PFAS and PFOA chemicals. These chemicals have been linked to cancer and other disastrous health side effects, particularly for children and pregnant women.

Chemical companies and the public are rightly concerned about risks of industrial accidents like chemical spills, explosions, or fires. Another concern is the reliance on fossil fuels in the production process and the chemical industry's contribution to greenhouse gas emissions. Manufacturers use oil and natural gas as the starting material for many of the chemicals they produce. Fossil fuels are also the primary source of energy for production.

Sustainable chemistry is a new paradigm for chemical research and innovation that is motivated by environmental stewardship and protecting human health and welfare. Instead of focusing on

the containment and safe disposal of toxic waste products at the middle or end of the lifecycle, sustainable chemistry emphasizes the design of safer, more sustainable chemicals and processes at the beginning. Careful consideration of the life-cycle implications of new chemicals and manufacturing processes can reduce or eliminate hazards to both human health and the environment. Reducing the amount of raw materials and energy used in the manufacturing process is also good for the company's bottom line. It's a win-win proposition.

However, the widespread adoption of sustainable chemistry principles has been hindered by a number of challenges. Chief among these are a need for more research, a lack of coordination across the Federal government, the need for large up-front investments, and a lack of consensus among stakeholders about how to characterize and assess sustainability in the chemical industry.

We will also hear our expert panel's input on the bipartisan *Sustainable Chemistry Research and Development Act*, introduced by Congressman Lipinski. The bill provides for improved coordination of Federal activities, including research and development of more sustainable chemicals, processes, and systems. The bill also supports improved education and training in sustainable chemistry and expands opportunities for the Federal government to partner with industry to bring innovations to market.

I look forward to the testimony and discussion.