

United States Senate

WASHINGTON, DC 20510

May 22, 2015

The Honorable Gene L. Dodaro
Comptroller General of the United States
U.S. Government Accountability Office
441 G Street NW
Washington, DC 20548

Dear Mr. Dodaro:

Modern chemistry has afforded us technologies which have had transformative effects on American society. From health care to electronics to agriculture, modern chemicals vastly improve almost every aspect of our lives. Sustainable chemistry is an emerging, innovative field within the chemical sciences that promises to create jobs, inspire new products and processes, and enhance benefits to human health and the environment.

Sustainable chemistry is defined by a broad set of goals including: reducing chemical risk, preventing waste, increasing energy efficiency, increasing use of renewable chemical and material feedstocks, and designing products and processes with consideration of the entire product lifecycle. Not only is sustainable chemistry beneficial to the environment and human health, but it can save companies money as well. A Pike Research report from 2011 concluded that sustainable chemistry could save the broader chemical industry \$65.5 billion in direct costs by 2020.

As such, sustainable chemistry's emergence promises benefits such as the creation of jobs, the spurring of manufacturing, economic development, and increasing the competitiveness of American companies in the global marketplace. Nevertheless, challenges and barriers to the design, development, and commercialization of sustainable chemicals, materials, products, and processes remain. Moreover, the nascent nature of this field and the relative lack of a research base pose a challenge to industry and academia alike.

Therefore, we request that GAO's Center for Science, Technology, and Engineering conduct a forward-looking technology assessment on this topic to explore the following questions:

- What are the new and anticipated future opportunities and markets presented by sustainable chemistry for U.S. innovation and competitiveness?
- What are the key challenges and barriers to innovation, technology transfer, implementation, commercialization and growth in sustainable chemistry, across the entire life cycle of chemicals and products?
- What kinds of collaboration and partnership are needed to strengthen public-private partnerships and/or coordinated federal activities, including those with the national labs, to advance sustainable chemistry innovation, technology transfer, and implementation in government, industry and academia?

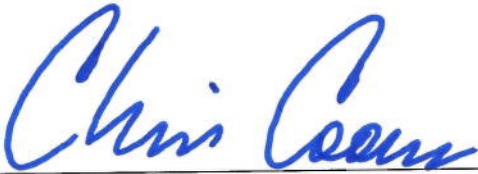
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- What types of training and education will be required to prepare a new generation of chemists, scientists, engineers and business leaders to work in these emerging fields?
- What are the key economic, environmental, ethical, legal, and social implications of the emergence of sustainable chemistry?
- How might the Federal government effectively promote the adoption, transition to, and implementation of sustainable chemistry in government, industry and academia (to include technology transition efforts, standards development, metrology, and analytical methods, among others)?

Thank you for your consideration of this request. If you have questions, please have your staff contact Blaise Sheridan (Blaise_Sheridan@coons.senate.gov or 202-224-0423) or Allison Schwier (Allison_Schwier@coons.senate.gov or 202-224-0378) with Senator Coons to clarify the scope and objectives of your study.

Sincerely,



Senator Chris Coons



Senator Susan M. Collins



Senator Edward J. Markey