

115TH CONGRESS
2D SESSION

S. 3296

To provide for Federal coordination of activities supporting sustainable chemistry, and for other purposes.

IN THE SENATE OF THE UNITED STATES

JULY 30, 2018

Mr. COONS (for himself and Ms. COLLINS) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

A BILL

To provide for Federal coordination of activities supporting sustainable chemistry, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Sustainable Chemistry
5 Research and Development Act of 2018”.

6 **SEC. 2. FINDINGS.**

7 Congress finds that—

8 (1) Congress recognized the importance and
9 value of sustainable chemistry and the role of the
10 Federal Government in section 114 of the American

1 Innovation and Competitiveness Act (Public Law
2 114–329);

3 (2) sustainable chemistry and materials trans-
4 formation is a key value contributor to business
5 competitiveness across many industrial and con-
6 sumer sectors;

7 (3) companies across hundreds of supply chains
8 critical to the American economy are seeking to re-
9 duce costs and open new markets through innova-
10 tions in manufacturing and materials, and are in
11 need of new innovations in chemistry, including sus-
12 tainable chemistry;

13 (4) sustainable chemistry can improve the effi-
14 ciency with which natural resources are used to meet
15 human needs for chemical products while avoiding
16 environmental harm, reduce or eliminate the emis-
17 sions of and exposures to hazardous substances,
18 minimize the use of resources, and benefit the econ-
19 omy, people, and the environment; and

20 (5) a recent report by the Government Account-
21 ability Office (GAO–18–307) found that the Federal
22 Government could play an important role in helping
23 realize the full innovation and market potential of
24 sustainable chemistry technologies, including
25 through a coordinated national effort on sustainable

1 chemistry and standardized tools and definitions to
2 support sustainable chemistry research, development,
3 demonstration, and commercialization.

4 **SEC. 3. NATIONAL COORDINATING ENTITY FOR SUSTAIN-**
5 **ABLE CHEMISTRY.**

6 (a) ESTABLISHMENT.—Not later than 180 days after
7 the date of enactment of this Act, the Director of the Of-
8 fice of Science and Technology Policy shall convene an
9 interagency entity (referred to in this Act as the “Entity”)
10 under the National Science and Technology Council with
11 the responsibility to coordinate Federal programs and ac-
12 tivities in support of sustainable chemistry, including
13 those described in sections 5 and 6.

14 (b) COORDINATION WITH EXISTING GROUPS.—In
15 convening the Entity, the Director of the Office of Science
16 and Technology Policy shall consider overlap and possible
17 coordination with existing committees, subcommittees, or
18 other groups of the National Science and Technology
19 Council, such as—

- 20 (1) the Committee on Environment, Natural
21 Resources, and Sustainability;
- 22 (2) the Committee on Technology;
- 23 (3) the Committee on Science; or
- 24 (4) related groups or subcommittees.

1 (c) CO-CHAIRS.—The Entity shall be co-chaired by
2 representatives from the Environmental Protection Agen-
3 cy, the National Institute of Standards and Technology,
4 and the National Science Foundation.

5 (d) AGENCY PARTICIPATION.—The Entity shall in-
6 clude representatives, including subject matter experts,
7 from the Environmental Protection Agency, the National
8 Institute of Standards and Technology, the National
9 Science Foundation, the Department of Energy, the De-
10 partment of Agriculture, the Department of Defense, the
11 National Institutes of Health, the Centers for Disease
12 Control and Prevention, the Food and Drug Administra-
13 tion, and other related Federal agencies, as appropriate.

14 **SEC. 4. ROADMAP FOR SUSTAINABLE CHEMISTRY.**

15 (a) ROADMAP.—Not later than 2 years after the date
16 of enactment of this Act, the Entity shall—

17 (1) develop a working framework of attributes
18 characterizing sustainable chemistry, as described in
19 subsection (b);

20 (2) assess the state of sustainable chemistry in
21 the United States as a key benchmark from which
22 progress under the activities described in this Act
23 can be measured, including assessing key sectors of
24 the United States economy, key technology plat-
25 forms, and barriers to innovation;

1 (3) coordinate and support Federal research,
2 development, demonstration, technology transfer,
3 commercialization, education, and training efforts in
4 sustainable chemistry, including budget coordination
5 and support for public-private partnerships, as ap-
6 propriate;

7 (4) identify methods by which the Federal
8 agencies can facilitate the development of incentives
9 for consideration and use of sustainable chemistry
10 processes and products, including innovative financ-
11 ing mechanisms; and

12 (5) identify other opportunities for expanding
13 Federal efforts in support of sustainable chemistry.

14 (b) ATTRIBUTES CHARACTERIZING SUSTAINABLE
15 CHEMISTRY.—The Entity shall develop a working frame-
16 work of attributes characterizing sustainable chemistry for
17 the purposes of carrying out the Act. In developing this
18 framework, the Entity shall—

19 (1) seek advice and input from stakeholders as
20 described in subsection (c);

21 (2) consider existing definitions of or frame-
22 works characterizing sustainable or green chemistry
23 already in use at Federal agencies;

24 (3) consider existing definitions of or frame-
25 works characterizing sustainable or green chemistry

1 already in use by international organizations of
2 which the United States is a member, such as the
3 Organisation for Economic Co-operation and Devel-
4 opment; and

5 (4) consider any other appropriate existing defi-
6 nitions of or frameworks characterizing sustainable
7 or green chemistry.

8 (c) CONSULTATION.—In carrying out the duties de-
9 scribed in subsections (a) and (b), the Entity shall consult
10 and coordinate with stakeholders qualified to provide ad-
11 vice and information to guide Federal activities related to
12 sustainable chemistry through workshops, requests for in-
13 formation, and other mechanisms as necessary. The stake-
14 holders shall include representatives from—

15 (1) business and industry (including trade asso-
16 ciations and small- and medium-sized enterprises
17 from across the value chain);

18 (2) the scientific community (including the Na-
19 tional Academies of Sciences, Engineering, and Med-
20 icine, scientific professional societies, and academia);

21 (3) the defense community;

22 (4) State, tribal, and local governments, includ-
23 ing nonregulatory State or regional sustainable
24 chemistry programs, as appropriate;

25 (5) nongovernmental organizations; and

1 (6) other appropriate organizations.

2 (d) REPORT TO CONGRESS.—

3 (1) IN GENERAL.—Not later than 3 years after
4 the date of enactment of this Act, the Entity shall
5 submit a report to the Committee on Environment
6 and Public Works, the Committee on Commerce,
7 Science, and Transportation, and the Committee on
8 Appropriations of the Senate, and the Committee on
9 Science, Space, and Technology, the Committee on
10 Energy and Commerce, and the Committee on Ap-
11 propriations of the House of Representatives. In ad-
12 dition to the elements described in subsections (a)
13 and (b), the report shall include—

14 (A) a summary of federally funded, sus-
15 tainable chemistry research, development, dem-
16 onstration, technology transfer, commercializa-
17 tion, education, and training activities;

18 (B) a summary of the financial resources
19 allocated to sustainable chemistry initiatives;

20 (C) an assessment of the current state of
21 sustainable chemistry in the United States, in-
22 cluding the role that Federal agencies are play-
23 ing in supporting it;

24 (D) an analysis of the progress made to-
25 ward achieving the goals and priorities of this

1 Act, and recommendations for future program
2 activities;

3 (E) an assessment of the benefits of ex-
4 panding existing, federally supported, regional
5 innovation and manufacturing hubs to include
6 sustainable chemistry and the value of directing
7 the creation of one or more dedicated sustain-
8 able chemistry centers of excellence or hubs;
9 and

10 (F) an evaluation of steps taken and fu-
11 ture strategies to avoid duplication of efforts,
12 streamline interagency coordination, facilitate
13 information sharing, and spread best practices
14 among participating agencies.

15 (2) SUBMISSION TO GAO.—The Entity shall
16 also submit the report described in paragraph (1) to
17 the Comptroller General of the United States for
18 consideration in future Congressional inquiries.

19 **SEC. 5. AGENCY ACTIVITIES IN SUPPORT OF SUSTAINABLE**
20 **CHEMISTRY.**

21 (a) IN GENERAL.—The agencies participating in the
22 Entity shall carry out activities in support of sustainable
23 chemistry, as appropriate to the specific mission and pro-
24 grams of each agency.

1 (b) ACTIVITIES.—The activities described in sub-
2 section (a) shall—

3 (1) incorporate sustainable chemistry into exist-
4 ing research, development, demonstration, tech-
5 nology transfer, commercialization, education, and
6 training programs, that the agency determines to be
7 relevant, including consideration of—

8 (A) merit-based competitive grants to indi-
9 vidual investigators and teams of investigators,
10 including, to the extent practicable, early career
11 investigators for research and development;

12 (B) grants to fund collaborative research
13 and development partnerships among univer-
14 sities, industry, and nonprofit organizations;

15 (C) coordination of sustainable chemistry
16 research, development, demonstration, and tech-
17 nology transfer conducted at Federal labora-
18 tories and agencies;

19 (D) incentive prize competitions and chal-
20 lenges in coordination with such existing Fed-
21 eral agency programs; and

22 (E) grants, loans, and loan guarantees to
23 aid in the technology transfer and commer-
24 cialization of sustainable chemicals, materials,
25 processes, and products;

1 (2) collect and disseminate information on sus-
2 tainable chemistry research, development, technology
3 transfer, and commercialization, including informa-
4 tion on accomplishments and best practices;

5 (3) within education and training programs, ex-
6 pand the education and training of undergraduate
7 and graduate students and professional scientists
8 and engineers, and other professionals involved in
9 materials specification in sustainable chemistry and
10 engineering, including through partnerships with in-
11 dustry as described in section 6;

12 (4) as relevant to an agency's programs, exam-
13 ine methods by which the Federal agencies, in col-
14 laboration and consultation with the National Insti-
15 tute of Standards and Technology, can facilitate the
16 development or recognition of validated, standard-
17 ized tools for performing sustainability assessments
18 of chemistry processes or products;

19 (5) through programs identified by an agency,
20 support (including through technical assistance, par-
21 ticipation, financial support, communications tools,
22 awards, or other forms of support) outreach and dis-
23 semination of sustainable chemistry advances such
24 as non-Federal symposia, forums, conferences, and
25 publications in collaboration with, as appropriate, in-

1 industry, academia, scientific and professional soci-
2 eties, and other relevant groups;

3 (6) provide for public input and outreach to be
4 integrated into the activities described in this section
5 by the convening of public discussions, through
6 mechanisms such as public meetings, consensus con-
7 ferences, and educational events, as appropriate;

8 (7) within each agency, develop metrics to track
9 the outputs and outcomes of the programs supported
10 by that agency; and

11 (8) incentivize or recognize actions that advance
12 sustainable chemistry products, processes, or initia-
13 tives, including through the establishment of a na-
14 tionally recognized awards program through the En-
15 vironmental Protection Agency to identify, publicize,
16 and celebrate innovations in sustainable chemistry
17 and chemical technologies.

18 (c) LIMITATIONS.—Financial support provided under
19 this section shall—

20 (1) be available only for pre-competitive activi-
21 ties; and

22 (2) not be used to promote the sale of a specific
23 product, process, or technology, or to disparage a
24 specific product, process, or technology.

25 (d) AGENCY BUDGET REQUESTS.—

1 (1) IN GENERAL.—Each Federal agency and
2 department participating in the activities described
3 in this section shall, as part of its annual request for
4 appropriations to the Office of Management and
5 Budget, submit a report to the Office of Manage-
6 ment and Budget that—

7 (A) identifies the activities of the agency or
8 department that contribute directly to these ac-
9 tivities; and

10 (B) estimates the portion of the agency or
11 department’s request for appropriations that is
12 intended to be allocated to those activities.

13 (2) ANNUAL BUDGET REQUEST TO CON-
14 GRESS.—The President shall include in the annual
15 budget request to Congress a statement of the por-
16 tion of the annual budget request for each agency or
17 department that will be allocated to activities under-
18 taken pursuant to this section.

19 **SEC. 6. PARTNERSHIPS IN SUSTAINABLE CHEMISTRY.**

20 (a) IN GENERAL.—The agencies participating in the
21 Entity may facilitate and support, through financial, tech-
22 nical, or other assistance, the creation of partnerships be-
23 tween institutions of higher education, nongovernmental
24 organizations, consortia, or companies across the value

1 chain in the chemical industry, including small- and me-
2 dium-sized enterprises, to—

3 (1) create collaborative sustainable chemistry
4 research, development, demonstration, technology
5 transfer, and commercialization programs; and

6 (2) train students and retrain professional sci-
7 entists, engineers, and others involved in materials
8 specification on the use of sustainable chemistry con-
9 cepts and strategies by methods, including—

10 (A) developing or recognizing curricular
11 materials and courses for undergraduate and
12 graduate levels and for the professional develop-
13 ment of scientists, engineers, and others in-
14 volved in materials specification; and

15 (B) publicizing the availability of profes-
16 sional development courses in sustainable chem-
17 istry and recruiting professionals to pursue
18 such courses.

19 (b) PRIVATE SECTOR PARTICIPATION.—To be eligi-
20 ble for support under this section, a partnership in sus-
21 tainable chemistry shall include at least one private sector
22 organization.

23 (c) SELECTION OF PARTNERSHIPS.—In selecting
24 partnerships for support under this section, the agencies
25 participating in the Entity shall also consider the extent

1 to which the applicants are willing and able to dem-
2 onstrate evidence of support for, and commitment to, the
3 goals outlined in the roadmap and report described in sec-
4 tion 4.

5 (d) PROHIBITED USE OF FUNDS.—Financial support
6 provided under this section may not be used—

7 (1) to support or expand a regulatory chemical
8 management program at an implementing agency
9 under a State law;

10 (2) to construct or renovate a building or struc-
11 ture; or

12 (3) to promote the sale of a specific product,
13 process, or technology, or to disparage a specific
14 product, process, or technology.

15 **SEC. 7. PRIORITIZATION.**

16 In carrying out this Act, the Entity shall prioritize
17 support for activities that achieve, to the highest extent
18 practicable, the goals outlined in the Act.

19 **SEC. 8. RULE OF CONSTRUCTION.**

20 Nothing in this Act shall be construed to alter or
21 amend any State law or action with regard to sustainable
22 chemistry or green chemistry, as defined by the State.

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