

116TH CONGRESS
1ST SESSION

H. R. 2051

AN ACT

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,*

1 **SECTION 1. SHORT TITLE.**

2 This Act may be cited as the “Sustainable Chemistry
3 Research and Development Act of 2019”.

4 **SEC. 2. FINDINGS.**

5 Congress finds that—

6 (1) Congress recognized the importance and
7 value of sustainable chemistry and the role of the
8 Federal Government in section 114 of the American
9 Innovation and Competitiveness Act (Public Law
10 114–329);

11 (2) sustainable chemistry and materials trans-
12 formation is a key value contributor to business
13 competitiveness across many industrial and con-
14 sumer sectors;

15 (3) companies across hundreds of supply chains
16 critical to the American economy are seeking to re-
17 duce costs and open new markets through innova-
18 tions in manufacturing and materials, and are in
19 need of new innovations in chemistry, including sus-
20 tainable chemistry;

21 (4) sustainable chemistry can improve the effi-
22 ciency with which natural resources are used to meet
23 human needs for chemical products while avoiding
24 environmental harm, reduce or eliminate the emis-
25 sions of and exposures to hazardous substances,

1 minimize the use of resources, and benefit the econ-
2 omy, people, and the environment; and

3 (5) a recent report by the Government Account-
4 ability Office (GAO–18–307) found that the Federal
5 Government could play an important role in helping
6 realize the full innovation and market potential of
7 sustainable chemistry technologies, including
8 through a coordinated national effort on sustainable
9 chemistry and standardized tools and definitions to
10 support sustainable chemistry research, development,
11 demonstration, and commercialization.

12 **SEC. 3. NATIONAL COORDINATING ENTITY FOR SUSTAIN-**
13 **ABLE CHEMISTRY.**

14 (a) ESTABLISHMENT.—Not later than 180 days after
15 the date of enactment of this Act, the Director of the Of-
16 fice of Science and Technology Policy shall convene an
17 interagency entity (referred to in this Act as the “Entity”)
18 under the National Science and Technology Council with
19 the responsibility to coordinate Federal programs and ac-
20 tivities in support of sustainable chemistry, including
21 those described in sections 5 and 6.

22 (b) COORDINATION WITH EXISTING GROUPS.—In
23 convening the Entity, the Director of the Office of Science
24 and Technology Policy shall consider overlap and possible
25 coordination with existing committees, subcommittees, or

1 other groups of the National Science and Technology
2 Council, such as—

- 3 (1) the Committee on Environment;
- 4 (2) the Committee on Technology;
- 5 (3) the Committee on Science; or
- 6 (4) related groups or subcommittees.

7 (c) CO-CHAIRS.—The Entity shall be co-chaired by
8 the Office of Science and Technology Policy and a rep-
9 resentative from the Environmental Protection Agency,
10 the National Institute of Standards and Technology, the
11 National Science Foundation, or the Department of En-
12 ergy, as selected by the Director of the Office of Science
13 and Technology Policy.

14 (d) AGENCY PARTICIPATION.—The Entity shall in-
15 clude representatives, including subject matter experts,
16 from the Environmental Protection Agency, the National
17 Institute of Standards and Technology, the National
18 Science Foundation, the Department of Energy, the De-
19 partment of Agriculture, the Department of Defense, the
20 National Institutes of Health, the Centers for Disease
21 Control and Prevention, the Food and Drug Administra-
22 tion, the Office of Management and Budget, and other re-
23 lated Federal agencies, as appropriate.

1 (e) TERMINATION.—The Entity shall terminate on
2 the date that is 10 years after the date of enactment of
3 this Act.

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

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

7 (1) consult with relevant stakeholders including
8 representatives from industry, academia, the Federal
9 Government, and international entities to develop
10 and update as needed a consensus definition of “sus-
11 tainable chemistry” to guide the activities under this
12 Act;

13 (2) develop a working framework of attributes
14 characterizing and metrics for assessing sustainable
15 chemistry, as described in subsection (b);

16 (3) assess the state of sustainable chemistry in
17 the United States as a key benchmark from which
18 progress under the activities described in this Act
19 can be measured, including assessing key sectors of
20 the United States economy, key technology plat-
21 forms, commercial priorities, and barriers to innova-
22 tion;

23 (4) coordinate and support Federal research,
24 development, demonstration, technology transfer,
25 commercialization, education, and training efforts in

1 sustainable chemistry, including budget coordination
2 and support for public-private partnerships, as ap-
3 propriate;

4 (5) identify methods by which the Federal
5 agencies can facilitate the development of incentives
6 for development, consideration and use of sustain-
7 able chemistry processes and products, including in-
8 novative financing mechanisms;

9 (6) identify major scientific challenges, road-
10 blocks, or hurdles to transformational progress in
11 improving the sustainability of the chemical sciences;
12 and

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

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

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

22 (2) consider existing definitions of or frame-
23 works characterizing and metrics for assessing sus-
24 tainable chemistry already in use at Federal agen-
25 cies;

1 (3) consider existing definitions of or frame-
2 works characterizing and metrics for assessing sus-
3 tainable chemistry already in use by international
4 organizations of which the United States is a mem-
5 ber, such as the Organisation for Economic Co-oper-
6 ation and Development; and

7 (4) consider any other appropriate existing defi-
8 nitions of or frameworks characterizing and metrics
9 for assessing sustainable chemistry.

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

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

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

23 (3) the defense community;

1 (4) State, tribal, and local governments, includ-
2 ing nonregulatory State or regional sustainable
3 chemistry programs, as appropriate;

4 (5) nongovernmental organizations; and

5 (6) other appropriate organizations.

6 (d) REPORT TO CONGRESS.—

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

18 (A) a summary of federally funded, sus-
19 tainable chemistry research, development, dem-
20 onstration, technology transfer, commercializa-
21 tion, education, and training activities;

22 (B) a summary of the financial resources
23 allocated to sustainable chemistry initiatives;

24 (C) an assessment of the current state of
25 sustainable chemistry in the United States, in-

1 including the role that Federal agencies are play-
2 ing in supporting it;

3 (D) an analysis of the progress made to-
4 ward achieving the goals and priorities of this
5 Act, and recommendations for future program
6 activities;

7 (E) an assessment of the benefits of ex-
8 panding existing, federally supported, regional
9 innovation and manufacturing hubs, centers,
10 and institutes to include sustainable chemistry
11 and the value of directing the creation of one or
12 more dedicated sustainable chemistry centers of
13 excellence, hubs, or institutes; and

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

19 (2) SUBMISSION TO GAO.—The Entity shall
20 also submit the report described in paragraph (1) to
21 the Comptroller General of the United States for
22 consideration in future Congressional inquiries.

1 **SEC. 5. AGENCY ACTIVITIES IN SUPPORT OF SUSTAINABLE**
2 **CHEMISTRY.**

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

7 (b) ACTIVITIES.—The activities described in sub-
8 section (a) shall—

9 (1) incorporate sustainable chemistry into exist-
10 ing research, development, demonstration, tech-
11 nology transfer, commercialization, education, and
12 training programs, that the agency determines to be
13 relevant, including consideration of—

14 (A) merit-based competitive grants to indi-
15 vidual investigators and teams of investigators,
16 including, to the extent practicable, early career
17 investigators for research and development;

18 (B) grants to fund collaborative research
19 and development partnerships among univer-
20 sities, industry, and nonprofit organizations;

21 (C) coordination of sustainable chemistry
22 research, development, demonstration, and tech-
23 nology transfer conducted at Federal labora-
24 tories and agencies;

1 (D) incentive prize competitions and chal-
2 lenges in coordination with such existing Fed-
3 eral agency programs; and

4 (E) grants, loans, and loan guarantees to
5 aid in the technology transfer and commer-
6 cialization of sustainable chemicals, materials,
7 processes, and products;

8 (2) collect and disseminate information on sus-
9 tainable chemistry research, development, technology
10 transfer, and commercialization, including informa-
11 tion on accomplishments and best practices;

12 (3) raise awareness of sustainable chemistry
13 concepts through public outreach activities;

14 (4) expand the education and training of stu-
15 dents at all levels of education, professional sci-
16 entists and engineers, and other professionals in-
17 volved in all aspects of sustainable chemistry and en-
18 gineering appropriate to that level of education and
19 training, including through—

20 (A) partnerships with industry as de-
21 scribed in section 6;

22 (B) support for the integration of sustain-
23 able chemistry principles into elementary, sec-
24 ondary, undergraduate, and graduate chemistry
25 and chemical engineering curriculum and re-

1 search training, as appropriate to that level of
2 education and training; and

3 (C) support for integration of sustainable
4 chemistry principles into existing or new profes-
5 sional development opportunities for profes-
6 sionals including teachers, faculty, and individ-
7 uals involved in laboratory research, (product
8 development, materials specification and test-
9 ing, life cycle analysis, and management);

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

17 (6) through programs identified by an agency,
18 support (including through technical assistance, par-
19 ticipation, financial support, communications tools,
20 awards, or other forms of support) outreach and dis-
21 semination of sustainable chemistry advances such
22 as non-Federal symposia, forums, conferences, and
23 publications in collaboration with, as appropriate, in-
24 dustry, academia, scientific and professional soci-
25 eties, and other relevant groups;

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

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

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

16 (c) LIMITATIONS.—Financial support provided under
17 this section shall—

18 (1) be available only for pre-competitive activi-
19 ties; and

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

23 (d) AGENCY BUDGET REPORT.—For each of fiscal
24 years 2021 through 2030, not later than 90 days after
25 submission of the President’s annual budget request, the

1 Entity shall prepare and submit to the Committee on En-
2 vironment and Public Works, the Committee on Com-
3 merce, Science, and Transportation, and the Committee
4 on Appropriations of the Senate, and the Committee on
5 Science, Space, and Technology, the Committee on Energy
6 and Commerce, and the Committee on Appropriations of
7 the House of Representatives a report that includes a
8 summarized agency budget in support of the activities
9 under this Act for the fiscal year to which such budget
10 request applies, and for the then current fiscal year, in-
11 cluding a breakout of spending for each agency partici-
12 pating in such activities.

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

14 (a) IN GENERAL.—The agencies participating in the
15 Entity may facilitate and support, through financial, tech-
16 nical, or other assistance, the creation of partnerships be-
17 tween institutions of higher education, nongovernmental
18 organizations, consortia, or companies across the value
19 chain in the chemical industry, including small- and me-
20 dium-sized enterprises, to—

21 (1) create collaborative sustainable chemistry
22 research, development, demonstration, technology
23 transfer, and commercialization programs; and

24 (2) train students and retrain professional sci-
25 entists, engineers, and others involved in materials

1 specification on the use of sustainable chemistry con-
2 cepts and strategies by methods, including—

3 (A) developing or recognizing curricular
4 materials and courses for undergraduate and
5 graduate levels and for the professional develop-
6 ment of scientists, engineers, and others in-
7 volved in materials specification; and

8 (B) publicizing the availability of profes-
9 sional development courses in sustainable chem-
10 istry and recruiting professionals to pursue
11 such courses.

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

16 (c) SELECTION OF PARTNERSHIPS.—In selecting
17 partnerships for support under this section, the agencies
18 participating in the Entity shall also consider the extent
19 to which the applicants are willing and able to dem-
20 onstrate evidence of support for, and commitment to, the
21 goals outlined in the roadmap and report described in sec-
22 tion 4.

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

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

4 (2) to construct or renovate a building or struc-
5 ture; or

6 (3) to promote the sale of a specific product,
7 process, or technology, or to disparage a specific
8 product, process, or technology.

9 **SEC. 7. PRIORITIZATION.**

10 In carrying out this Act, the Entity shall focus its
11 support for sustainable chemistry activities on those that
12 achieve, to the highest extent practicable, the goals out-
13 lined in the Act.

14 **SEC. 8. RULE OF CONSTRUCTION.**

15 Nothing in this Act shall be construed to alter or
16 amend any State law or action with regard to sustainable
17 chemistry, as defined by the State.

 Passed the House of Representatives December 9,
2019.

Attest:

Clerk.

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