

# Union Calendar No. 253

116TH CONGRESS  
1ST SESSION

# H. R. 2051

**[Report No. 116–312, Part I]**

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

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## IN THE HOUSE OF REPRESENTATIVES

APRIL 3, 2019

Mr. LIPINSKI (for himself and Mr. MOOLENAAR) introduced the following bill; which was referred to the Committee on Science, Space, and Technology, and in addition to the Committee on the Budget, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

NOVEMBER 26, 2019

Additional sponsors: Mr. BALDERSON, Mr. CASTEN of Illinois, Mr. TONKO, Ms. STEVENS, Mr. FITZPATRICK, Mr. FOSTER, Mr. VAN DREW, Mr. COX of California, Ms. JOHNSON of Texas, Ms. SHERRILL, Mr. FLEISCHMANN, Ms. KENDRA S. HORN of Oklahoma, Mrs. DINGELL, Mr. BYRNE, Ms. SLOTKIN, and Mr. SUOZZI

NOVEMBER 26, 2019

Reported from the Committee on Science, Space, and Technology with an amendment

[Strike out all after the enacting clause and insert the part printed in *italie*]

NOVEMBER 26, 2019

Committee on the Budget discharged; committed to the Committee of the Whole House on the State of the Union and ordered to be printed

[For text of introduced bill, see copy of bill as introduced on April 3, 2019]

# **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 2019”.*

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 Fed-*  
10 *eral Government in section 114 of the American Inno-*  
11 *vation and Competitiveness Act (Public Law 114–*  
12 *329);*

13 *(2) sustainable chemistry and materials trans-*  
14 *formation is a key value contributor to business com-*  
15 *petitiveness across many industrial and consumer sec-*  
16 *tors;*

17 *(3) companies across hundreds of supply chains*  
18 *critical to the American economy are seeking to re-*  
19 *duce costs and open new markets through innovations*  
20 *in manufacturing and materials, and are in need of*  
21 *new innovations in chemistry, including sustainable*  
22 *chemistry;*

23 *(4) sustainable chemistry can improve the effi-*  
24 *ciency with which natural resources are used to meet*  
25 *human needs for chemical products while avoiding*

1        *environmental harm, reduce or eliminate the emis-*  
2        *sions of and exposures to hazardous substances, mini-*  
3        *mize the use of resources, and benefit the economy,*  
4        *people, and the environment; and*

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

14    **SEC. 3. NATIONAL COORDINATING ENTITY FOR SUSTAIN-**  
15            **ABLE CHEMISTRY.**

16        *(a) ESTABLISHMENT.—Not later than 180 days after*  
17        *the date of enactment of this Act, the Director of the Office*  
18        *of Science and Technology Policy shall convene an inter-*  
19        *agency entity (referred to in this Act as the “Entity”) under*  
20        *the National Science and Technology Council with the re-*  
21        *sponsibility to coordinate Federal programs and activities*  
22        *in support of sustainable chemistry, including those de-*  
23        *scribed in sections 5 and 6.*

24        *(b) COORDINATION WITH EXISTING GROUPS.—In con-*  
25        *vening the Entity, the Director of the Office of Science and*

1 *Technology Policy shall consider overlap and possible co-*  
2 *ordination with existing committees, subcommittees, or*  
3 *other groups of the National Science and Technology Coun-*  
4 *cil, such as—*

5 *(1) the Committee on Environment;*

6 *(2) the Committee on Technology;*

7 *(3) the Committee on Science; or*

8 *(4) related groups or subcommittees.*

9 *(c) CO-CHAIRS.—The Entity shall be co-chaired by the*  
10 *Office of Science and Technology Policy and a representa-*  
11 *tive from the Environmental Protection Agency, the Na-*  
12 *tional Institute of Standards and Technology, the National*  
13 *Science Foundation, or the Department of Energy, as se-*  
14 *lected by the Director of the Office of Science and Tech-*  
15 *nology Policy.*

16 *(d) AGENCY PARTICIPATION.—The Entity shall in-*  
17 *clude representatives, including subject matter experts, from*  
18 *the Environmental Protection Agency, the National Insti-*  
19 *tute of Standards and Technology, the National Science*  
20 *Foundation, the Department of Energy, the Department of*  
21 *Agriculture, the Department of Defense, the National Insti-*  
22 *tutes of Health, the Centers for Disease Control and Preven-*  
23 *tion, the Food and Drug Administration, and other related*  
24 *Federal agencies, as appropriate.*

1       (e) *TERMINATION.*—*The Entity shall terminate on the*  
2 *date that is 10 years after the date of enactment of this*  
3 *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 can*  
19 *be measured, including assessing key sectors of the*  
20 *United States economy, key technology platforms,*  
21 *commercial priorities, and barriers to innovation;*

22           (4) *coordinate and support Federal research, de-*  
23 *velopment, demonstration, technology transfer, com-*  
24 *mercialization, education, and training efforts in sus-*  
25 *tainable chemistry, including budget coordination*

1       and support for public-private partnerships, as ap-  
2       propriate;

3               (5) identify methods by which the Federal agen-  
4       cies can facilitate the development of incentives for  
5       development, consideration and use of sustainable  
6       chemistry processes and products, including innova-  
7       tive financing mechanisms;

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

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

14      (b) CHARACTERIZING AND ASSESSING SUSTAINABLE  
15      CHEMISTRY.—The Entity shall develop a working frame-  
16      work of attributes characterizing and metrics for assessing  
17      sustainable chemistry for the purposes of carrying out the  
18      Act. In developing this 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 frameworks  
22      characterizing and metrics for assessing sustainable  
23      chemistry already in use at Federal agencies;

24              (3) consider existing definitions of or frameworks  
25      characterizing and metrics for assessing sustainable

1        *chemistry already in use by international organiza-*  
2        *tions of which the United States is a member, such*  
3        *as the Organisation for Economic Co-operation and*  
4        *Development; and*

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

8        *(c) CONSULTATION.—In carrying out the duties de-*  
9        *scribed in subsections (a) and (b), the Entity shall consult*  
10       *with stakeholders qualified to provide advice and informa-*  
11       *tion to guide Federal activities related to sustainable chem-*  
12       *istry through workshops, requests for information, and other*  
13       *mechanisms as necessary. The stakeholders shall include*  
14       *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 Medi-*  
20        *cine, 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 chem-*  
24        *istry 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 Appro-*  
11          *priations of the House of Representatives. In addition*  
12          *to the elements described in subsections (a) and (b),*  
13          *the report shall include—*

14                (A) *a summary of federally funded, sustain-*  
15                *able chemistry research, development, demonstra-*  
16                *tion, technology transfer, commercialization,*  
17                *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 expand-*  
 4       *ing existing, federally supported, regional inno-*  
 5       *vation and manufacturing hubs, centers, and in-*  
 6       *stitutes to include sustainable chemistry and the*  
 7       *value of directing the creation of 1 or more dedi-*  
 8       *cated sustainable chemistry centers of excellence,*  
 9       *hubs, or institutes; and*

10              *(F) an evaluation of steps taken and future*  
 11       *strategies to avoid duplication of efforts, stream-*  
 12       *line interagency coordination, facilitate informa-*  
 13       *tion sharing, and spread best practices among*  
 14       *participating agencies.*

15              *(2) SUBMISSION TO GAO.—The Entity shall also*  
 16       *submit the report described in paragraph (1) to the*  
 17       *Comptroller General of the United States for consider-*  
 18       *ation 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 subsection*  
2   (a) *shall—*

3           (1) *incorporate sustainable chemistry into exist-*  
4       *ing research, development, demonstration, technology*  
5       *transfer, commercialization, education, and training*  
6       *programs, that the agency determines to be relevant,*  
7       *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 laboratories*  
18       *and agencies;*

19          (D) *incentive prize competitions and chal-*  
20       *lenges in coordination with such existing Federal*  
21       *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) raise awareness of sustainable chemistry con-  
6       cepts through public outreach activities;

7           (4) expand the education and training of stu-  
8       dents at all levels of education, professional scientists  
9       and engineers, and other professionals involved in all  
10      aspects of sustainable chemistry and engineering ap-  
11      propriate to that level of education and training, in-  
12      cluding through—

13           (A) partnerships with industry as described  
14      in section 6;

15           (B) support for the integration of sustain-  
16      able chemistry principles into elementary, sec-  
17      ondary, undergraduate, and graduate chemistry  
18      and chemical engineering curriculum and re-  
19      search training, as appropriate to that level of  
20      education and training; and

21           (C) support for integration of sustainable  
22      chemistry principles into existing or new profes-  
23      sional development opportunities for profes-  
24      sionals including teachers, faculty, and individ-  
25      uals involved in laboratory research, (product

1           *development, materials specification and testing,*  
2           *life cycle analysis, and management);*

3           *(5) as relevant to an agency's programs, examine*  
4           *methods by which the Federal agencies, in collabora-*  
5           *tion and consultation with the National Institute of*  
6           *Standards and Technology, may facilitate the devel-*  
7           *opment or recognition of validated, standardized tools*  
8           *for performing sustainability assessments of chemistry*  
9           *processes or products;*

10          *(6) through programs identified by an agency,*  
11          *support (including through technical assistance, par-*  
12          *ticipation, financial support, communications tools,*  
13          *awards, or other forms of support) outreach and dis-*  
14          *semination of sustainable chemistry advances such as*  
15          *non-Federal symposia, forums, conferences, and publi-*  
16          *cations in collaboration with, as appropriate, indus-*  
17          *try, academia, scientific and professional societies,*  
18          *and other relevant groups;*

19          *(7) provide for public input and outreach to be*  
20          *integrated into the activities described in this section*  
21          *by the convening of public discussions, through mech-*  
22          *anisms such as public meetings, consensus con-*  
23          *ferences, and educational events, as appropriate;*

1           (8) *within each agency, develop metrics to track*  
2           *the outputs and outcomes of the programs supported*  
3           *by that agency; and*

4           (9) *incentivize or recognize actions that advance*  
5           *sustainable chemistry products, processes, or initia-*  
6           *tives, including through the establishment of a nation-*  
7           *ally recognized awards program through the Environ-*  
8           *mental Protection Agency to identify, publicize, and*  
9           *celebrate innovations in sustainable chemistry and*  
10          *chemical technologies.*

11          (c) *LIMITATIONS.—Financial support provided under*  
12          *this section shall—*

13               (1) *be available only for pre-competitive activi-*  
14               *ties; and*

15               (2) *not be used to promote the sale of a specific*  
16               *product, process, or technology, or to disparage a spe-*  
17               *cific product, process, or technology.*

18          (d) *AGENCY BUDGET REPORT.—For each of fiscal*  
19          *years 2021 through 2030, not later than 90 days after sub-*  
20          *mission of the President’s annual budget request, the Entity*  
21          *shall prepare and submit to the Committee on Environment*  
22          *and Public Works, the Committee on Commerce, Science,*  
23          *and Transportation, and the Committee on Appropriations*  
24          *of the Senate, and the Committee on Science, Space, and*  
25          *Technology, the Committee on Energy and Commerce, and*

1 *the Committee on Appropriations of the House of Rep-*  
2 *resentatives a report that includes a summarized agency*  
3 *budget in support of the activities under this Act for the*  
4 *fiscal year to which such budget request applies, and for*  
5 *the then current fiscal year, including a breakout of spend-*  
6 *ing for each agency participating in such activities.*

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

8       (a) *IN GENERAL.*—*The agencies participating in the*  
9 *Entity may facilitate and support, through financial, tech-*  
10 *nical, or other assistance, the creation of partnerships be-*  
11 *tween institutions of higher education, nongovernmental or-*  
12 *ganizations, consortia, or companies across the value chain*  
13 *in the chemical industry, including small- and medium-*  
14 *sized enterprises, to—*

15               (1) *create collaborative sustainable chemistry re-*  
16 *search, development, demonstration, technology trans-*  
17 *fer, and commercialization programs; and*

18               (2) *train students and retrain professional sci-*  
19 *entists, engineers, and others involved in materials*  
20 *specification on the use of sustainable chemistry con-*  
21 *cepts and strategies by methods, including—*

22                       (A) *developing or recognizing curricular*  
23 *materials and courses for undergraduate and*  
24 *graduate levels and for the professional develop-*

1           *ment of scientists, engineers, and others involved*  
2           *in materials specification; and*

3                     *(B) publicizing the availability of profes-*  
4           *sional development courses in sustainable chem-*  
5           *istry and recruiting professionals to pursue such*  
6           *courses.*

7           *(b) PRIVATE SECTOR PARTICIPATION.—To be eligible*  
8           *for support under this section, a partnership in sustainable*  
9           *chemistry shall include at least one private sector organiza-*  
10          *tion.*

11          *(c) SELECTION OF PARTNERSHIPS.—In selecting part-*  
12          *nerships for support under this section, the agencies partici-*  
13          *pating in the Entity shall also consider the extent to which*  
14          *the applicants are willing and able to demonstrate evidence*  
15          *of support for, and commitment to, the goals outlined in*  
16          *the roadmap and report described in section 4.*

17          *(d) PROHIBITED USE OF FUNDS.—Financial support*  
18          *provided under this section may not be used—*

19                     *(1) to support or expand a regulatory chemical*  
20           *management program at an implementing agency*  
21           *under a State law;*

22                     *(2) to construct or renovate a building or struc-*  
23           *ture; or*

1           (3) to promote the sale of a specific product,  
2           process, or technology, or to disparage a specific prod-  
3           uct, process, or technology.

4   **SEC. 7. PRIORITIZATION.**

5           In carrying out this Act, the Entity shall focus its sup-  
6           port for sustainable chemistry activities on those that  
7           achieve, to the highest extent practicable, the goals outlined  
8           in the Act.

9   **SEC. 8. RULE OF CONSTRUCTION.**

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

Union Calendar No. 253

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1ST Session

**H. R. 2051**

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