Calendar No. 513

116TH CONGRESS
2D SESSION

S. 999

[Report No. 116–251]

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

IN THE SENATE OF THE UNITED STATES

APRIL 3, 2019

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

AUGUST 12, 2020

Reported by Mr. WICKER, with an amendment

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

A BILL

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

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

~~**SECTION 1. SHORT TITLE.**~~

~~This Act may be cited as the "Sustainable Chemistry Research and Development Act of 2019".~~

SEC. 2. FINDINGS.

Congress finds that—

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

(2) sustainable chemistry and materials transformation is a key value contributor to business competitiveness across many industrial and consumer sectors;

(3) companies across hundreds of supply chains critical to the American economy are seeking to reduce costs and open new markets through innovations in manufacturing and materials, and are in need of new innovations in chemistry, including sustainable chemistry;

(4) sustainable chemistry can improve the efficiency with which natural resources are used to meet human needs for chemical products while avoiding environmental harm, reduce or eliminate the emissions of and exposures to hazardous substances, minimize the use of resources, and benefit the economy, people, and the environment; and

(5) a recent report by the Government Accountability Office (GAO–18–307) found that the Federal

Government could play an important role in helping realize the full innovation and market potential of sustainable chemistry technologies, including through a coordinated national effort on sustainable chemistry and standardized tools and definitions to support sustainable chemistry research, development, demonstration, and commercialization.

SEC. 3. NATIONAL COORDINATING ENTITY FOR SUSTAINABLE CHEMISTRY.

(a) ESTABLISHMENT.—Not later than 180 days after the date of enactment of this Act, the Director of the Office of Science and Technology Policy shall convene an interagency entity (referred to in this Act as the ''Entity'') under the National Science and Technology Council with the responsibility to coordinate Federal programs and activities in support of sustainable chemistry, including those described in sections 5 and 6.

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

(1) the Committee on Environment, Natural Resources, and Sustainability;

(2) the Committee on Technology;

(3) the Committee on Science; or

(4) related groups or subcommittees.

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

(d) AGENCY PARTICIPATION.—The Entity shall include representatives, including subject matter experts, from the Environmental Protection Agency, the National Institute of Standards and Technology, the National Science Foundation, the Department of Energy, the Department of Agriculture, the Department of Defense, the National Institutes of Health, the Centers for Disease Control and Prevention, the Food and Drug Administration, and other related Federal agencies, as appropriate.

SEC. 4. ROADMAP FOR SUSTAINABLE CHEMISTRY.

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

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

(2) assess the state of sustainable chemistry in the United States as a key benchmark from which progress under the activities described in this Act

can be measured, including assessing key sectors of the United States economy, key technology platforms, and barriers to innovation;

(3) coordinate and support Federal research, development, demonstration, technology transfer, commercialization, education, and training efforts in sustainable chemistry, including budget coordination and support for public-private partnerships, as appropriate;

(4) identify methods by which the Federal agencies can facilitate the development of incentives for development, consideration and use of sustainable chemistry processes and products, including innovative financing mechanisms;

(5) identify major scientific challenges, roadblocks, or hurdles to transformational progress in improving the sustainability of the chemical sciences; and

(6) identify other opportunities for expanding Federal efforts in support of sustainable chemistry.

(b) ATTRIBUTES CHARACTERIZING SUSTAINABLE CHEMISTRY.—The Entity shall develop a working framework of attributes characterizing sustainable chemistry for the purposes of carrying out the Act. In developing this framework, the Entity shall—

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

(2) consider existing definitions of or frameworks characterizing sustainable or green chemistry already in use at Federal agencies;

(3) consider existing definitions of or frameworks characterizing sustainable or green chemistry already in use by international organizations of which the United States is a member, such as the Organisation for Economic Co-operation and Development; and

(4) consider any other appropriate existing definitions of or frameworks characterizing sustainable or green chemistry.

(c) CONSULTATION.—In carrying out the duties described in subsections (a) and (b), the Entity shall consult and coordinate with stakeholders qualified to provide advice and information to guide Federal activities related to sustainable chemistry through workshops, requests for information, and other mechanisms as necessary. The stakeholders shall include representatives from—

(1) business and industry (including trade associations and small- and medium-sized enterprises from across the value chain);

(2) the scientific community (including the National Academies of Sciences, Engineering, and Medicine, scientific professional societies, and academia);

(3) the defense community;

(4) State, tribal, and local governments, including nonregulatory State or regional sustainable chemistry programs, as appropriate;

(5) nongovernmental organizations; and

(6) other appropriate organizations.

(d) REPORT TO CONGRESS.—

(1) IN GENERAL.—Not later than 3 years after the date of enactment of this Act, the Entity shall submit a report to the Committee on Environment and Public Works, the Committee on Commerce, Science, and Transportation, and the Committee on Appropriations of the Senate, and the Committee on Science, Space, and Technology, the Committee on Energy and Commerce, and the Committee on Appropriations of the House of Representatives. In addition to the elements described in subsections (a) and (b), the report shall include—

(A) a summary of federally funded, sustainable chemistry research, development, demonstration, technology transfer, commercialization, education, and training activities;

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

(C) an assessment of the current state of sustainable chemistry in the United States, including the role that Federal agencies are playing in supporting it;

(D) an analysis of the progress made toward achieving the goals and priorities of this Act, and recommendations for future program activities;

(E) an assessment of the benefits of expanding existing, federally supported, regional innovation and manufacturing hubs to include sustainable chemistry and the value of directing the creation of 1 or more dedicated sustainable chemistry centers of excellence or hubs; and

(F) an evaluation of steps taken and future strategies to avoid duplication of efforts, streamline interagency coordination, facilitate information sharing, and spread best practices among participating agencies.

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

SEC. 5. AGENCY ACTIVITIES IN SUPPORT OF SUSTAINABLE CHEMISTRY.

(a) IN GENERAL.—The agencies participating in the Entity shall carry out activities in support of sustainable chemistry, as appropriate to the specific mission and programs of each agency.

(b) ACTIVITIES.—The activities described in subsection (a) shall—

(1) incorporate sustainable chemistry into existing research, development, demonstration, technology transfer, commercialization, education, and training programs, that the agency determines to be relevant, including consideration of—

(A) merit-based competitive grants to individual investigators and teams of investigators, including, to the extent practicable, early career investigators for research and development;

(B) grants to fund collaborative research and development partnerships among universities, industry, and nonprofit organizations;

(C) coordination of sustainable chemistry research, development, demonstration, and technology transfer conducted at Federal laboratories and agencies;

(D) incentive prize competitions and challenges in coordination with such existing Federal agency programs; and

(E) grants, loans, and loan guarantees to aid in the technology transfer and commercialization of sustainable chemicals, materials, processes, and products;

(2) collect and disseminate information on sustainable chemistry research, development, technology transfer, and commercialization, including information on accomplishments and best practices;

(3) within education and training programs, expand the education and training of undergraduate and graduate students and professional scientists and engineers, and other professionals involved in materials specification in sustainable chemistry and engineering, including through partnerships with industry as described in section 6;

(4) as relevant to an agency's programs, examine methods by which the Federal agencies, in collaboration and consultation with the National Institute of Standards and Technology, can facilitate the development or recognition of validated, standardized tools for performing sustainability assessments of chemistry processes or products;

(5) through programs identified by an agency, support (including through technical assistance, participation, financial support, communications tools, awards, or other forms of support) outreach and dissemination of sustainable chemistry advances such as non-Federal symposia, forums, conferences, and publications in collaboration with, as appropriate, industry, academia, scientific and professional societies, and other relevant groups;

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

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

(8) incentivize or recognize actions that advance sustainable chemistry products, processes, or initiatives, including through the establishment of a nationally recognized awards program through the Environmental Protection Agency to identify, publicize, and celebrate innovations in sustainable chemistry and chemical technologies.

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

(1) be available only for pre-competitive activities; and

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

(d) AGENCY BUDGET REQUESTS.—

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

(A) identifies the activities of the agency or department that contribute directly to these activities; and

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

(2) ANNUAL BUDGET REQUEST TO CONGRESS.—The President shall include in the annual budget request to Congress a statement of the portion of the annual budget request for each agency or

department that will be allocated to activities undertaken pursuant to this section.

SEC. 6. PARTNERSHIPS IN SUSTAINABLE CHEMISTRY.

(a) IN GENERAL.—The agencies participating in the Entity may facilitate and support, through financial, technical, or other assistance, the creation of partnerships between institutions of higher education, nongovernmental organizations, consortia, or companies across the value chain in the chemical industry, including small- and medium-sized enterprises, to—

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

(2) train students and retrain professional scientists, engineers, and others involved in materials specification on the use of sustainable chemistry concepts and strategies by methods, including—

(A) developing or recognizing curricular materials and courses for undergraduate and graduate levels and for the professional development of scientists, engineers, and others involved in materials specification; and

(B) publicizing the availability of professional development courses in sustainable chem-

istry and recruiting professionals to pursue such courses.

(b) PRIVATE SECTOR PARTICIPATION.—To be eligible for support under this section, a partnership in sustainable chemistry shall include at least one private sector organization.

(c) SELECTION OF PARTNERSHIPS.—In selecting partnerships for support under this section, the agencies participating in the Entity shall also consider the extent to which the applicants are willing and able to demonstrate evidence of support for, and commitment to, the goals outlined in the roadmap and report described in section 4.

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

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

(2) to construct or renovate a building or structure; or

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

~~SEC. 7. PRIORITIZATION.~~

~~In carrying out this Act, the Entity shall focus its support for sustainable chemistry activities on those that achieve, to the highest extent practicable, the goals outlined in the Act.~~

~~SEC. 8. RULE OF CONSTRUCTION.~~

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

SECTION 1. SHORT TITLE.

This Act may be cited as the "Sustainable Chemistry Research and Development Act of 2019".

SEC. 2. FINDINGS.

Congress finds that—

(1) Congress recognized the importance and value of sustainable chemistry in section 114 of the American Innovation and Competitiveness Act (Public Law 114–329);

(2) sustainable chemistry and materials transformation is a key value contributor to business competitiveness across many industrial and consumer sectors;

(3) companies across hundreds of supply chains critical to the American economy are seeking to reduce costs and open new markets through innovations in manufacturing and materials, and are in need of

new innovations in chemistry, including sustainable chemistry;

(4) sustainable chemistry can improve the efficiency with which natural resources are used to meet human needs for chemical products while avoiding environmental harm, reduce or eliminate the emissions of and exposures to hazardous substances, minimize the use of resources, and benefit the economy, people, and the environment; and

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

SEC. 3. NATIONAL COORDINATING ENTITY FOR SUSTAINABLE CHEMISTRY.

(a) ESTABLISHMENT.—Not later than 180 days after the date of enactment of this Act, the Director of the Office of Science and Technology Policy shall convene an interagency entity (referred to in this Act as the "Entity") under the National Science and Technology Council with the re-

sponsibility to coordinate Federal programs and activities in support of sustainable chemistry, including those described in sections 5 and 6.

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

(1) the Committee on Environment;

(2) the Committee on Technology;

(3) the Committee on Science; or

(4) related groups or subcommittees.

(c) CO-CHAIRS.—The Entity shall be co-chaired by the Director of the Office of Science and Technology Policy and a representative from the Environmental Protection Agency, the National Institute of Standards and Technology, the National Science Foundation, or the Department of Energy, as selected by the Director of the Office of Science and Technology Policy.

(d) AGENCY PARTICIPATION.—The Entity shall include representatives, including subject matter experts, from the Environmental Protection Agency, the National Institute of Standards and Technology, the National Science Foundation, the Department of Energy, the Department of

Agriculture, the Department of Defense, the National Institutes of Health, the Centers for Disease Control and Prevention, the Food and Drug Administration, and other related Federal agencies, as appropriate.

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

SEC. 4. STRATEGIC PLAN FOR SUSTAINABLE CHEMISTRY.

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

(1) consult with relevant stakeholders, including representatives from industry, academia, national labs, the Federal Government, and international entities, to develop and update, as needed, a consensus definition of "sustainable chemistry" to guide the activities under this Act;

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

(3) assess the state of sustainable chemistry in the United States as a key benchmark from which progress under the activities described in this Act can be measured, including assessing key sectors of the United States economy, key technology platforms, commercial priorities, and barriers to innovation;

(4) coordinate and support Federal research, development, demonstration, technology transfer, commercialization, education, and training efforts in sustainable chemistry, including budget coordination and support for public-private partnerships, as appropriate;

(5) identify any Federal regulatory barriers to, and opportunities for, Federal agencies facilitating the development of incentives for development, consideration and use of sustainable chemistry processes and products;

(6) identify major scientific challenges, roadblocks, or hurdles to transformational progress in improving the sustainability of the chemical sciences; and

(7) review, identify, and make effort to eliminate duplicative Federal funding and duplicative Federal research in sustainable chemistry.

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

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

(2) consider existing definitions of, or frameworks characterizing and metrics for assessing, sustainable chemistry already in use at Federal agencies;

(3) consider existing definitions of, or frameworks characterizing and metrics for assessing, sustainable chemistry already in use by international organizations of which the United States is a member, such as the Organisation for Economic Co-operation and Development; and

(4) consider any other appropriate existing definitions of, or frameworks characterizing and metrics for assessing, sustainable chemistry.

(c) CONSULTATION.—In carrying out the duties described in subsections (a) and (b), the Entity shall consult and coordinate with stakeholders qualified to provide advice and information to guide Federal activities related to sustainable chemistry through workshops, requests for information, or other mechanisms as necessary. The stakeholders shall include representatives from—

(1) business and industry (including trade associations and small- and medium-sized enterprises from across the value chain);

(2) the scientific community (including the National Academies of Sciences, Engineering, and Medi-

cine, scientific professional societies, national labs, and academia);

(3) the defense community;

(4) State, tribal, and local governments, including nonregulatory State or regional sustainable chemistry programs, as appropriate;

(5) nongovernmental organizations; and

(6) other appropriate organizations.

(d) REPORT TO CONGRESS.—

(1) IN GENERAL.—Not later than 3 years after the date of enactment of this Act, the Entity shall submit a report to the Committee on Environment and Public Works, the Committee on Commerce, Science, and Transportation, and the Committee on Appropriations of the Senate, and the Committee on Science, Space, and Technology, the Committee on Energy and Commerce, and the Committee on Appropriations of the House of Representatives. In addition to the elements described in subsections (a) and (b), the report shall include—

(A) a summary of federally funded, sustainable chemistry research, development, demonstration, technology transfer, commercialization, education, and training activities;

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

(C) an assessment of the current state of sustainable chemistry in the United States, including the role that Federal agencies are playing in supporting it;

(D) an analysis of the progress made toward achieving the goals and priorities of this Act, and any recommendations for future program activities;

(E) an evaluation of steps taken and future strategies to avoid duplication of efforts, streamline interagency coordination, facilitate information sharing, and spread best practices among participating agencies; and

(F) an evaluation of duplicative Federal funding and duplicative Federal research in sustainable chemistry, efforts undertaken by the Entity to eliminate duplicative funding and research, and recommendations on how to achieve these goals.

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

SEC. 5. AGENCY ACTIVITIES IN SUPPORT OF SUSTAINABLE CHEMISTRY.

(a) IN GENERAL.—The agencies participating in the Entity shall carry out activities in support of sustainable chemistry, as appropriate to the specific mission and programs of each agency.

(b) ACTIVITIES.—The activities described in subsection (a) shall—

(1) incorporate sustainable chemistry into existing basic and applied research, development, demonstration, technology transfer, commercialization, education, and training programs, that the agency determines to be relevant, including consideration of—

(A) merit-based competitive grants to individual investigators and teams of investigators, including, to the extent practicable, early career investigators for research and development;

(B) grants to fund collaborative research and development partnerships among universities, industry, and nonprofit organizations;

(C) coordination of sustainable chemistry research, development, demonstration, and technology transfer conducted at Federal laboratories and agencies;

(D) incentive prize competitions and challenges in coordination with such existing Federal agency programs; and

(E) grants, loans, and loan guarantees to aid in the technology transfer and commercialization of sustainable chemicals, materials, processes, and products;

(2) collect and disseminate information on sustainable chemistry research, development, technology transfer, and commercialization, including information on accomplishments and best practices;

(3) within education and training programs, expand the education and training of undergraduate and graduate students and professional scientists and engineers, and other professionals involved in all aspects of sustainable chemistry and engineering, including through partnerships with industry as described in section 6;

(4) as relevant to an agency's programs, examine methods by which the Federal agencies, in collaboration and consultation with the National Institute of Standards and Technology, can facilitate the development or recognition of validated, standardized tools for performing sustainability assessments of chemistry processes or products;

(5) through programs identified by an agency, support (including through technical assistance, participation, financial support, communications tools, awards, or other forms of support) outreach and dissemination of sustainable chemistry advances such as non-Federal symposia, forums, conferences, and publications in collaboration with, as appropriate, industry, academia, scientific and professional societies, and other relevant groups;

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

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

(8) incentivize or recognize actions that advance sustainable chemistry products, processes, or initiatives, including through the establishment of a nationally recognized awards program through the Environmental Protection Agency to identify, publicize, and celebrate innovations in sustainable chemistry and chemical technologies.

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

(1) be available only for pre-competitive activities; and

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

SEC. 6. PARTNERSHIPS IN SUSTAINABLE CHEMISTRY.

(a) IN GENERAL.—The agencies participating in the Entity may facilitate and support, through financial, technical, or other assistance, the creation of partnerships between institutions of higher education, nongovernmental organizations, consortia, or companies across the value chain in the chemical industry, including small- and medium-sized enterprises, to—

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

(2) train students and retrain professional scientists, engineers, and others involved in materials specification on the use of sustainable chemistry concepts and strategies by methods, including—

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

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

(B) publicizing the availability of professional development courses in sustainable chemistry and recruiting professionals to pursue such courses.

(b) PRIVATE SECTOR PARTICIPATION.—To be eligible for support under this section, a partnership in sustainable chemistry shall include at least one private sector organization.

(c) SELECTION OF PARTNERSHIPS.—In selecting partnerships for support under this section, the agencies participating in the Entity shall also consider the extent to which the applicants are willing and able to demonstrate evidence of support for, and commitment to, the goals outlined in the strategic plan and report described in section 4.

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

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

(2) to construct or renovate a building or structure; or

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

SEC. 7. PRIORITIZATION.

In carrying out this Act, the Entity shall focus its support for sustainable chemistry activities on those that achieve, to the highest extent practicable, the goals outlined in the Act.

SEC. 8. RULE OF CONSTRUCTION.

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

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

AUGUST 12, 2020

Reported with an amendment