

THE ENDLESS FRONTIER ACT

Introduced as S. 1260 on April 20, 2021

Sponsored by Senators Schumer, Young, Hassan, Collins, Coons, Portman, Baldwin, Graham, Peters, Blunt, Daines, Van Hollen, Romney, Kelly

Senate Commerce Committee Consideration

- On April 14, 2021, the Senate Commerce Committee held a [hearing](#) on relevant legislative topics and the innovation ecosystem.
- On May 12, 2021, the Senate Commerce Committee [voted](#) 24-4 to advance the Endless Frontier Act to the Senate floor.
- The Committee approved over 100 total amendments.
- The reported bill includes more than 20 bipartisan, separately introduced bills.

Overview:

The Endless Frontier Act, as reported by the Senate Commerce Committee, seeks to maintain and build on U.S. science and technology leadership through investments in research and development and strengthening regional economic development, manufacturing, and supply chains. The legislation would authorize roughly \$120 billion over 5 years for activities at the National Science Foundation (“NSF”), Department of Commerce (“DOC”), the Department of Energy (“DOE”), and the National Aeronautics and Space Administration (“NASA”). The Endless Frontier Act advances priorities including to reduce undue geographic concentration of R&D funding, encourage broader participation of populations underrepresented in STEM, and increase collaboration across federal agencies and with non-governmental partners on innovation.

Notable Provisions:

Technology Directorate (Title I)

The Endless Frontier Act would create a new Directorate of Technology and Innovation at the NSF to support research and technology development in key technology focus areas, such as artificial intelligence and quantum science, in order to strengthen the global leadership of the United States in innovation. Major activities would include funding research and development at collaborative institutes, supporting academic technology transfer and intellectual property protection, establishing technology testbeds, and awarding scholarships and fellowships to build the relevant workforce. The Directorate would be authorized at \$29B over fiscal years 2022 to 2026, including a transfer of \$2.9B to existing NSF divisions to support basic research collaboration.

Existing NSF Divisions (Title II)

The NSF is the gold standard for basic research around the world. The Endless Frontier Act would authorize \$52.0B over fiscal years 2022 to 2026 for existing NSF activities (before the \$2.9B transfer from the Directorate), representing a seven percent increase each year. The legislation would also create a Chief Diversity Officer at NSF and increase STEM education to enhance the domestic STEM workforce. The legislation would also incorporate a series of

Commerce Committee member priorities for NSF, including programs for precision agriculture, rural STEM education, quantum information science, skilled technical education, critical minerals, and bioeconomy R&D. It would also develop policies to combat sexual harassment in science and provide flexibilities for researchers with caregiver responsibilities.

Research Security (Title III)

The Endless Frontier Act would take strong steps to secure research from adversaries. It would authorize NSF's research security office, provide NIST cybersecurity assistance for universities, and set up an information sharing and analysis organization to exchange information on research security risks. It would also require policies to prohibit participation in state-sponsored foreign talent programs that unethically or illegally transfer U.S. knowledge to adversaries.

Capacity Building (Title I and II) and Technology Hubs (Title IV)

The Endless Frontier Act would take steps to build capacity across the nation and increase the participation of those underrepresented in STEM, including through support for early-career researchers, emerging research institutions, minority serving institutions, rural institutions, and institutions that participate in the Established Program to Stimulate Competitive Research, to reduce geographic concentration of R&D and education.

It would also create a regional technology hub program at DOC to support regional economic development in innovation. Technology hubs would carry out workforce development activities, business and entrepreneur development activities, technology maturation activities, and infrastructure activities related to the technology development. The technology hubs program would be authorized at \$8B over fiscal years 2022 to 2026.

Manufacturing (Title IV)

The Endless Frontier Act would authorize a quadrupling of the DOC Manufacturing Extension Partnership and create a new track within the program for public benefit activities like workforce development and cybersecurity services. The Manufacturing Extension Partnership would be funded at \$2.4B over fiscal years 2022 to 2026. The substitute would also authorize the Manufacturing USA program, at \$1.2B over fiscal years 2022 to 2026, and add workforce and coordination provisions.

Supply Chain Resiliency (Title V)

The Endless Frontier Act would establish a supply chain resiliency program at the Department of Commerce to work with the private sector, for the purpose of identifying and recommending opportunities to mitigate or address supply chain vulnerabilities in the United States and in allied and partner countries. It would also amend the recently-enacted CHIPS Act to provide \$2 billion in incentives for domestic production of mature semiconductor technologies, such as for the automotive industry.

Space (Title VI)

The Endless Frontier Act incorporates the bipartisan NASA Authorization Act of 2019, which passed the Senate unanimously last Congress, and would authorize NASA's activities, including the agency's exploration, science, aeronautics, STEM education, and technology missions. It also incorporates the bipartisan SPACE Act, which would provide the authorities necessary for

DOC to perform certain space situational awareness activities and authorize centers of excellence for space situational awareness. The space title would authorize just over \$10B for these activities between fiscal years 2022 and 2026.

Telecommunications (Title V)

The Endless Frontier Act would authorize \$100M to establish the Telecommunications Workforce Training Grant Program Fund at the National Telecommunications and Information Administration (NTIA). It would also authorize \$35M to NTIA to expand internet access to rural areas and tribal lands through the establishment of internet exchanges facilities and submarine cable landing station grants. The substitute would authorize \$50M to NTIA to create a testbed to develop open network architecture technologies and applications and increase U.S. participation in international standards-setting bodies.

DOE (Title I)

The Endless Frontier Act would authorize \$16.9B in supplemental amounts for DOE over 5 years for research and development in the key technology focus areas. It also would establish robust coordinating mechanisms to ensure that activities authorized in the legislation are not duplicative of other federal agency activities.

Bipartisan Bills Included in the Endless Frontier Act, as reported by the Commerce Committee

1. S. 289, Research Investment to Spark the Economy (RISE) Act (Markey, Tillis, Collins, Peters, Warren, Brown, Stabenow, Coons, Rosen, Van Hollen, Baldwin, Cardin, Kelly) (Section 507)
2. S. 637, Supporting Early-Career Researchers Act (Blumenthal, Merkley, Coons, Brown, Van Hollen, Klobuchar, Hirono) (Section 212)
3. S. 710, Sister City Transparency Act (Blackburn, Hawley, Cramer, Tillis, Rubio, Marshall, Daines)
4. S. 725, Advanced Technological Manufacturing Act (Wicker, Cantwell, Rosen) (Sections 205 and 206)
5. S. 996, Improving Minority Participation and Careers in Telecommunications (IMPACT) Act (Wicker, Sinema, Tim Scott) (Section 509)
6. S. 997, Office of Manufacturing and Industrial Innovation Policy Act (Klobuchar, Wicker, Coons, Portman) (Section 508)
7. S. 1044, National Manufacturing Advisory Council for the 21st Century Act (Peters, Rubio) (Section 404)
8. S. 1106, Shark Fin Sales Elimination Act of 2021 (Booker, Capito, Cantwell, Portman, Blumenthal, Collins, Braun, Duckworth, Schatz, Whitehouse) (Section 518)
9. S. 1161, Quantum Network Infrastructure and Workforce Development Act (Thune, Hassan) (Section 211)
10. S. 1213, National Strategy to Ensure American Leadership (SEAL) Act (Van Hollen, Blunt) (Section 503)
11. S. 1240, Manufacturing USA Expansion Act of 2021 (Brown, Blunt) (Section 402)
12. S. 1257, AI Scholarship for Service Act (Peters, Thune) (Section 208)
13. S. 1374, Rural STEM Education Act (Wicker, Rosen, Cornyn, Hassan) (Section 210)

14. S. 1395, Advancing Precision Agriculture Capabilities Act (Fischer, Klobuchar) (Section 213)
15. S. 1379, Combatting Sexual Harassment in Science (Blumenthal, Smith, Reed, Van Hollen, Klobuchar, Hirono, Shaheen, Sanders, Wyden, Markey, Rosen, Brown, Padilla) (Section 521)
16. S. 1418, Bioeconomy Research and Development Act (Markey, Gillibrand, Rubio, Capito) (Section 217)
17. S. 1563, Telecommunications Supply Chain Diversity Promotion Act (Wicker, Hickenlooper) (Section 520)
18. S. 4827 (116th), Space Preservation And Conjunction Emergency Act (SPACE) Act (Wicker) (Subtitle A of Title VI)
19. S. 2800 (116th), National Aeronautics and Space Administration Act (Cruz, Sinema, Wicker, Cantwell) (Subtitle B of Title VI)
20. S. 3707 (115th), Country of Origin Labeling Online Act (COOL) Online Act (Baldwin, Rick Scott, Murphy, Loeffler)
21. S. 1166 (115th), Internet Exchanges and Submarine Cable Act of 2020 (Blackburn, Baldwin, Duckworth, Blunt)