

Congress of the United States House of Representatives

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

2321 RAYBURN HOUSE OFFICE BUILDING

WASHINGTON, DC 20515-6301

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www.science.house.gov

December 15, 2022

Director General Pietro Barabaschi
ITER Organization Headquarters
Route de Vinon-sur-Verdon, CS 90 046
13067 St. Paul-lez-Durance (France)

Dear Director General Barabaschi:

On October 27, 2022 Representative Jerry McNerney, a Member of the Science, Space, and Technology Committee (the Committee), visited ITER, an international fusion experiment under construction in southern France. The U.S. is an ITER Member along with China, the European Union, India, Japan, Korea, and Russia. During this visit, Representative McNerney learned about a stress corrosion cracking issue in thermal shield modules that may result in a significant delay to the project schedule. This was the first time that the Science Committee had heard about the issue, and staff could not identify any mention of it in the press.

During the visit, ITER Organization leadership explained that “the requisite silver coating of the tokamak thermal shields had first needed a nickel coating that required hydrochloride acid, which was not sufficiently cleaned off before application of the ensuing coating, causing a leak that led to stress corrosion in the piping” and speculated that “at best, the issue would delay ITER's first phase goal of achieving first plasma; at worst, it could be ‘project-ending.’” ITER Organization leadership shared that they currently think this issue could cause a two-year delay to the schedule, though “an assessment of the full extent of the thermal shield module repairs or replacement will be part of ITER’s baseline update that may be determined as early as the end of 2023” and “ITER is assessing whether the thermal shield repairs or replacements could be done in parallel with actions to address the ITER project’s existing 35-month delay caused by other technical, supply chain, and COVID-19-related issues, or whether the repairs or replacements would be done partially in series, creating a cumulative five-year delay.” (Attachment 1).

Representative McNerney was told that ITER leadership first learned of the issue in April 2022, that they began speaking publicly about it in June 2022, and the first formal discussion of the issue with ITER members occurred during an August 2022 meeting. ITER Organization leadership explained that “the ITER Council directed the ITER Organization to not speak about

its plan to solve the corrosion issue until the Council granted permission”, and that the “U.S. has a seat on the Council via the Department of Energy.” (Attachment 1).

Over the years, the Committee has provided the ITER project with significant bipartisan support. In addition to the many hearings in which Committee Members have discussed the project at length, bipartisan legislation that supports the project has been advanced by the Committee and ultimately been signed into law. The Energy Act of 2020 (Public Law 116-260, Division Z) and the Chips and Science Act (Public Law 117-167) authorized funding through 2027 for the U.S. contribution to ITER based on the best estimates provided to the Committee from the Department of Energy at the time.

While we understand that unexpected issues can occur in projects of this magnitude and complexity, especially in a first-of-its-kind project, it is our expectation that the Committee will be notified in a timely manner of issues that have significant implications for the ITER project scope, cost, and schedule. We have appreciated the transparency of the ITER Organization in recent years and look forward to receiving the updated schedule baseline for the project after a path forward has been identified to address the thermal shield issue. Science Committee staff spoke with U.S. ITER Office staff about the issue and these expectations on November 10, 2022.

Committee Members continue to strongly support robust funding for the project in the Administration’s budget process and in annual appropriations requests (Attachments 2 through 10). However, that support requires continued transparency from the ITER Organization and U.S. ITER.

Thank you for your attention to these important matters. We look forward to working with you as we all strive to see ITER achieve fusion.

Sincerely,



Eddie Bernice Johnson
Chairwoman
Committee on Science, Space, and
Technology



Frank D. Lucas
Ranking Member
Committee on Science, Space, and
Technology

Cc: Jennifer M. Granholm
Secretary of the Department of Energy
1000 Independence Ave. SW
Washington, DC 20585

Kathy McCarthy
US ITER Project Office
1055 Commerce Park
Oak Ridge, TN 37380

Attachment 1: State Department cable transmission, “ITER Faces Technical and Materials Challenge with Thermal Shield Stress Corrosion.”

Attachment 2: Chairwoman Johnson and Ranking Member Lucas letter to the Appropriations Committee supporting ITER and fusion energy funding for Fiscal Year 2020.

Attachment 3: Committee letter to the Department of Energy, White House Office of Management and Budget, and White House Office of Science and Technology Policy supporting DOE Office of Science funding for Fiscal Year 2024.

Attachment 4: Chairwoman Johnson letter to the Appropriations Committee regarding funding priorities for Fiscal Year 2023.

Attachment 5: Chairwoman Johnson letter to the Appropriations Committee regarding funding priorities for Fiscal Year 2022.

Attachment 6: Chairwoman Johnson letter to the Appropriations Committee regarding funding priorities for Fiscal Year 2021.

Attachment 7: Chairwoman Johnson letter to the Appropriations Committee regarding funding priorities for Fiscal Year 2020.

Attachment 8: Chairwoman Johnson letter to the Appropriations Committee regarding funding priorities for Fiscal Year 2019.

Attachment 9: Chairwoman Johnson letter to the Appropriations Committee regarding funding priorities for Fiscal Year 2018.

Attachment 10: Chairwoman Johnson letter to the Appropriations Committee regarding funding CHIPS and Science Act activities for Fiscal Year 2023.

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October 17, 2019

The Honorable Nita Lowey
Chairwoman
Committee on Appropriations
H-307, The Capitol
U.S. House of Representatives
Washington, DC 20515

The Honorable Kay Granger
Ranking Member
Committee on Appropriations
1016 Longworth House Office Building
U.S. House of Representatives
Washington, DC 20515

The Honorable Richard Shelby
Chairman
Committee on Appropriations
S-128, The Capitol
U.S. Senate
Washington, DC 20510

The Honorable Patrick Leahy
Vice Chairman
Committee on Appropriations
S-128, The Capitol
U.S. Senate
Washington, DC 20510

Dear Chairwoman Lowey, Chairman Shelby, Ranking Member Granger, and Vice Chairman Leahy,

As the Chairwoman and Ranking Member of the House Committee on Science, Space, and Technology, we are writing to encourage your continued support for the Fusion Energy Sciences (FES) program at the Department of Energy (DOE), and specifically to encourage support for the guidance and FY 2020 appropriation levels for this program that were approved by the House of Representatives in June.

Fusion energy has the potential to deliver clean, abundant energy to the world, all while producing essentially no greenhouse gas emissions. The FES program within the DOE Office of Science is working to make this energy source a reality by providing funding to a wide variety of fusion laboratories, experiments, and research programs throughout the U.S., and by contributing to the ITER international fusion project. ITER will be the largest fusion experiment in the world and, if successful, enable substantial progress in achieving a commercial fusion reactor.

Since concerns about the ITER project were raised in the 2013 ITER Management Assessment, its progress and management have improved considerably. To our knowledge, including that

from hearing testimony the Committee received in June from Secretary Perry, a National Academies *Final Report of the Committee on a Strategic Plan for U.S. Burning Plasma Research* released earlier this year, a May 2016 *Report on U.S. Participation in the ITER Project* from DOE, and a trip we personally took to the ITER construction site in 2015, ITER's current leadership team under Dr. Bernard Bigot took the 2013 Management Assessment very seriously. They have adopted essentially all of the Assessment's recommendations and largely addressed the issues that the review identified. One of the first major milestones that Dr. Bigot promised at the beginning of his tenure and delivered to the ITER Council in November 2015 was to produce an updated, comprehensive schedule for the project. The Council established an independent review panel with significant U.S. participation to assess the credibility of this new schedule. This panel, found "substantial improvement in project performance, a high degree of motivation, and considerable progress during the past 12 months."

Two months ago, ITER announced that the project was now 65% complete and reaffirmed the schedule of achieving First Plasma by December 2025. Given the importance of ITER to determining the viability of fusion as a clean energy source, the key contributions of U.S. researchers to advancing the science and engineering of the field to this point, and the project's substantial management improvements under Dr. Bigot's leadership, continued support for ITER is now strongly justified.

Unfortunately, due to previous shortfalls over several years in meeting the U.S. commitments to this project, per the baseline funding profile for the U.S. contribution to ITER that was established by the Department of Energy in 2017 as well as current information provided by the ITER Organization, a substantial increase that is consistent with the House-passed level is now essential in FY 2020 to ensure that the project remains on schedule and thus avoid unnecessary, associated cost increases to U.S. taxpayers as well as the project's other international partners. To fully pursue fusion's immense opportunities, we must provide ITER with the resources that we already know are needed to honor our international commitment and avert any adverse financial, diplomatic, and scientific impacts to its continued progress.

We also strongly support the full range of non-ITER fusion energy research pathways that must be pursued to ultimately determine the viability of this potentially transformational resource. This is why, as House and Senate lawmakers negotiate final FY 2020 appropriations, we encourage you to maintain the funding levels and supporting language included in the House-passed Energy and Water Development Appropriations bill for the entire FES program.

We are grateful to Chairwoman Kaptur, Ranking Member Simpson, and our other colleagues on the House Appropriations Committee for working closely with our Committee to provide the FES program, and projects like ITER, with the resources they deserve, and we look forward to working with all of you to ensure that sustained investments for this critical clean energy program are signed into law.

Thank you for your consideration,

Sincerely,



Eddie Bernice Johnson
Chairwoman
Committee on Science, Space, and
Technology



Frank D. Lucas
Ranking Member
Committee on Science, Space, and
Technology

cc: Rep. Marcy Kaptur
Chairwoman
Subcommittee on Energy and Water Development, and Related Agencies
Committee on Appropriations
U.S. House of Representatives

Rep. Mike Simpson
Ranking Member
Subcommittee on Energy and Water Development, and Related Agencies
Committee on Appropriations
U.S. House of Representatives

Sen. Lamar Alexander
Chairman
Subcommittee on Energy and Water Development
Committee on Appropriations
U.S. Senate

Sen. Dianne Feinstein
Ranking Member
Subcommittee on Energy and Water Development
Committee on Appropriations
U.S. Senate

EDDIE BERNICE JOHNSON, Texas
CHAIRWOMAN

FRANK D. LUCAS, Oklahoma
RANKING MEMBER

Congress of the United States

House of Representatives

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

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August 11, 2022

The Honorable Jennifer M. Granholm
Secretary of the Department of Energy
1000 Independence Ave. SW
Washington, DC 20585

The Honorable Shalanda Young
Director
White House Office of Management and Budget
1600 Pennsylvania Ave NW
Washington, DC 20500

The Honorable Alondra Nelson
Director
White House Office of Science and Technology Policy
1600 Pennsylvania Ave NW
Washington, DC 20500

Dear Secretary Granholm, Director Young, and Director Nelson:

As you begin formulating the Administration's request for Fiscal Year (FY) 2024, we urge you to develop a robust budget proposal for the U.S. Department of Energy's (DOE) Office of Science. The bipartisan Department of Energy Science for the Future legislation, developed by the Committee on Science, Space, and Technology (the Committee) and passed by the House, articulates for the first time a comprehensive authorization for DOE's Office of Science – and we were pleased to see bicameral support for its inclusion in the landmark *CHIPS and Science Act* that President Biden just signed into law. We urge that the Administration's FY2024 budget request for the Office of Science reflect the robust scale and scope of investment outlined in the enacted *CHIPS and Science Act*. It is imperative that we meet this historical moment with transformative investments in science and innovation, and that process begins with the President's Budget Request.

In his [first press conference](#), President Biden said that “we used to invest a little over 2 percent of our entire GDP in pure research and investment in science. Today, it's 0.7 percent...And so what

I'm going to do is make sure we invest closer to 2 percent." Yet the FY 2023 administration budgetary proposal for the DOE Office of Science fell short of that goal. Instead, it proposed shrinking the Office's budget both in real (inflation-adjusted) terms, and as a fraction of GDP.

As we have stated previously in numerous hearings, including one on [April 27](#) with Under Secretary Richmond, the climate emergency before us demands ambitious proposals that leverage every tool at the Federal government's disposal to accelerate our transition to a clean energy future. To that end, we greatly appreciate the increased level of support the Administration has pursued for other DOE programs that are focused on advancing clean energy technologies. To be clear: we do not wish to see those other programs reduced or pitted against the Office of Science. On the contrary, we hope to see further increases in ambition – and ask the Administration to recognize the equally vital importance of the Office of Science to the project of kickstarting a clean energy revolution, and to bolstering the health, well-being, and creative capacities of the American people.

The Office of Science is the lead federal agency supporting scientific research for energy applications and is the nation's largest supporter of research in the physical sciences. It is also by far the largest research agency within DOE. The Office supports tens of thousands of investigators across hundreds of different entities through direct research funding as well as the development and operation of large-scale experiments and unique scientific user facilities, both domestically and internationally. In doing so, it plays a pivotal role in driving advancements in transformative new clean energy technologies while also helping to unlock the science behind some of our most fundamental mysteries, including the very nature of matter, energy, space, and time. These activities are vital to improving our competitiveness and decarbonizing our country.

More specifically, the Office of Science:

- stewards research across a broad array of scientific areas, including chemical and materials science, geosciences, high-performance computing, mathematical and computational sciences, biological and environmental sciences, fusion energy, particle and nuclear physics, accelerator technology, and isotope production;
- leverages its research portfolio and user facilities to play a unique role in driving progress in crosscutting areas of geostrategic importance, such as quantum information science, artificial intelligence, microelectronics, the bioeconomy, and critical materials;
- supports experimental and observational research that informs leading climate models used by the worldwide research community;
- supplies the nation with critical isotopes that are essential for energy, medical, and national security research and applications;
- builds and manages several light source and neutron source facilities that enable transformative advancements in biology, chemistry, and materials sciences, such as detailed characterization of new materials that could lay the foundation for next-generation batteries;

- leads the U.S. contribution to the international ITER project as well the development of innovative new fusion energy technologies and systems, which could greatly accelerate progress toward the realization of fusion energy generation;
- is in the process of deploying two exascale computing systems, which will significantly expand its high-performance computing capacity and thus the nation's ability to produce high-fidelity models for the analysis of complex systems and phenomena, such as climatic and other Earth systems; and
- supports the construction of large-scale experiments like the Long Baseline Neutrino Facility/Deep Underground Neutrino Experiment and the Electron-Ion Collider, which will both lead global efforts to understand the frontiers of modern physics and constitute a major draw for international talent.

Contrary to recent statements by the Administration, neither the FY 2022 nor the FY 2023 budget requests would adequately support all the activities mentioned above. We know this thanks to contradictory information provided to the Committee by stakeholders as well as the Department itself. Instead, these requests would prevent numerous major construction projects from maintaining their project schedules (as provided to the Committee by the Department itself), which in turn would cause their total costs to grow. In addition, it is our understanding that the FY 2023 budget request does not account for the supply chain delays and other impacts these projects are facing due to the COVID-19 pandemic. We are also troubled by the fact that the Department has indicated that it is considering significantly decreasing the scientific scope of some of these projects because of budget constraints. Finally, many existing facilities would lack the resources necessary to maintain full operations or support the technical staff that sustain them.

These problems are pervasive, affecting projects and facilities relevant to many scientific fields—from solar power to particle physics to fusion energy—and at numerous national laboratories. The resultant delays and increased price tags caused by lackluster budgets impede scientific progress and deny DOE's internal and external research communities access to the most up-to-date instrumentation. Furthermore, they raise alarm among the Department's contractors and collaborators—both domestic and international—about its reliability as a partner. Budget requests that propose cuts, stagnation, or slow growth to the Office's topline also cause downward pressure on the research programs, which is leading to adverse long-term effects. The Office of Science's research portfolio plays a key role in advancing scientific discovery here and around the world and is a major contributor to the workforce pipeline that enables DOE to fulfill its mission. In addition, these research programs are a powerful tool for broadening participation and increasing equity in STEM, which are essential for maintaining U.S. scientific leadership.

When questioned about the lack of support for the Office of Science, Administration officials have responded that they were operating under presumed funding constraints when crafting these requests. This is an unconvincing argument, especially when considering the sizeable gains being proposed for other DOE offices and other research agencies. We also expect the

Administration's request to be an ambitious statement of priorities that seeks to boldly meet pressing challenges, not a rigid balance sheet.

In FY 2024, we urge the Administration to employ the same approach taken by the Committee in the [Department of Energy Science for the Future Act](#), which formed one of the cornerstones of the [America COMPETES Act of 2022](#) and the [CHIPS and Science Act](#). Our top priority, executed in a bipartisan manner, was to provide policy direction and authorize funding levels that would empower the Office of Science to adequately meet the financial requirements inherent to both its research and construction portfolios that the nation has tasked it to undertake. We note with appreciation that the Administration wholeheartedly endorsed these bills and held a White House summit in March 2022 focused on the recent progress and potential benefits of improved support for fusion research and development. We call on the Administration to follow through on this support with a budget request that honors our shared commitment and the priorities authorized by Congress. The stakes are too high for incrementalism or austerity.

We welcome the opportunity to work with you to ensure that the FY2024 Budget Request does markedly better by the Department of Energy's Office of Science and the American people.

Sincerely,



Jamaal Bowman
Chairman
Subcommittee on Energy



Bill Foster
Chairman
Subcommittee on Investigations &
Oversight



Sean Casten
Member of Congress



Paul Tonko
Member of Congress



Deborah K. Ross
Member of Congress



Suzanne Bonamici
Member of Congress



Gwen Moore
Member of Congress



Melanie Stansbury
Member of Congress



Donald S. Beyer Jr.
Member of Congress



Mikie Sherrill
Member of Congress



Daniel T. Kildee
Member of Congress



Susan Wild
Member of Congress



Zoe Lofgren
Member of Congress



Jerry McNerney
Member of Congress



Ami Bera
Member of Congress



Ed Perlmutter
Member of Congress



Conor Lamb
Member of Congress



Haley Stevens
Member of Congress



Donald Norcross
Member of Congress



Brad Sherman
Member of Congress



Lizzie Fletcher
Member of Congress

cc: Rep. Frank Lucas, Ranking Member, Committee on Science, Space, and Technology
Rep. Randy Weber, Ranking Member, Subcommittee on Energy
Rep. Jay Obernolte, Ranking Member, Subcommittee on Investigations & Oversight

SENIOR DEMOCRATIC WHIP
DEAN
TEXAS CONGRESSIONAL DELEGATION, REGION VI

CHAIRWOMAN

COMMITTEE ON SCIENCE, SPACE,
AND TECHNOLOGY

COMMITTEE ON TRANSPORTATION
AND INFRASTRUCTURE
SUBCOMMITTEE ON HIGHWAYS AND TRANSIT
SUBCOMMITTEE ON WATER
RESOURCES AND ENVIRONMENT
SUBCOMMITTEE ON AVIATION
SUBCOMMITTEE ON RAILROADS,
PIPELINES, AND HAZARDOUS MATERIALS

CONGRESSIONAL BLACK CAUCUS
CHAIR, 107TH CONGRESS



Eddie Bernice Johnson

Congress of the United States
30th District, Texas

PLEASE RESPOND TO:

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April 27, 2022

The Honorable Marcy Kaptur
Chairwoman
Subcommittee on Energy and Water
Development, and Related Agencies
2362-B Rayburn House Office Building
Washington, DC 20515

The Honorable Michael K. Simpson
Ranking Member
Subcommittee on Energy and Water
Development, and Related Agencies
1036 Longworth House Office Building
Washington, DC 20515

Dear Chairwoman Kaptur and Ranking Member Simpson:

As you consider the Fiscal Year 2023 Appropriations Subcommittee on Energy and Water Development, and Related Agencies appropriations bill, I write to express my support for the following:

1. **\$3,000,000** for a Community Funding Project in the Department of Energy account for Solar Panels at the Martin Luther King, Jr. Community Center, a facility that is administered by the City of Dallas Office of Community Care. The funding would be used to install solar panels for general use and to provide resilience for the new emergency generator system at the Martin Luther King Jr. Community Center. The project will decrease the energy operating costs and increase the resilience of a critical facility that provides a wide array of services. In addition, it will expand the use of the facility by allowing it to serve as warming and cooling centers during extreme weather events.
2. **\$8.802 billion** for the Department of Energy's Office of Science. The Office of Science not only supports critical research activities directly, but also supports the development, construction, and operation of a broad portfolio of large-scale experiments and unique, open-access scientific user facilities. These facilities are vital to the development of new technologies and to exploring the frontiers of our scientific understanding for researchers all over the world, from academia to industry. Continued support for new scientific facilities currently under construction should be a key priority, as cuts below the previous

DOE-approved budget profiles to keep these projects on schedule and minimize their total costs will delay cutting edge research, and ultimately increase the cost of these facilities to taxpayers, largely due to the ongoing investment required to maintain facility construction personnel. \$8.802 billion is the FY 2022 authorization level for the DOE Office of Science included in the DOE Science for the Future Act, sponsored by myself and Ranking Member Lucas, which was endorsed by the Administration. This bill passed the House by a vote of 351-68 last June and was included in the America COMPETES Act of 2022. I am requesting this level rather than the FY 2023 authorization level in the bill as I recognize that the latter would likely be too aggressive given the since-appropriated funding for the Office in FY 2022. The Committee on Science, Space, and Technology has determined that \$8.802 billion in FY 2023 will be adequate to support the Office of Science's full portfolio of essential research, construction, and facility operation activities based on extensive outreach and feedback from DOE, the national laboratories, the academic community, and industrial stakeholders.

3. **\$1.003 billion** for the DOE Office of Science's Fusion Energy Sciences (FES) program. A substantial increase in investment in fusion energy research and development is warranted to carry out the high priority recommendations in a comprehensive, community-driven long range plan produced by the Fusion Energy Sciences Advisory Committee (FESAC) and those in a National Academies report entitled *Bringing Fusion to the U.S. Grid*, both released in February 2021. Such an increase was also previously authorized in the Energy Act of 2020, along with direction to the Department to establish programs in: alternative and enabling concepts; inertial fusion for energy applications; and milestone-based fusion concept development. The Energy Act of 2020 also authorized funds to fully support the U.S. role in the ITER Project. Further justification for this request was provided in a summit held by the White House on March 17th, 2022 to announce a new fusion energy initiative and discuss the progress and potential benefits of improved support for fusion energy R&D. In addition to the above reports, the event was spurred by several substantial breakthroughs in fusion made by government laboratories, universities, and the private sector, in the U.S. and overseas, over the past year. \$1.003 billion is the FY 2022 authorization level for FES included in the bipartisan DOE Science for the Future Act. I am requesting this level rather than the FY 2023 authorization level in the bill as I recognize that the latter would likely be too aggressive given the since-appropriated funding for FES and the Office of Science in FY 2022.
4. **\$700 million** for the Department of Energy's Advanced Research Projects Agency – Energy (ARPA-E). I strongly support the Administration's request for ARPA-E, which now has a proven track record that can be measured in the number of new companies, patents, amount of follow-on private sector funding, and follow-on partnerships with other government agencies that have all resulted from ARPA-E's investments since its establishment in 2009. As authorized in the ARPA-E Reauthorization Act of 2019, sponsored by myself and Ranking Member Lucas and enacted in the Energy Act of 2020, such an increase is warranted to better support the scale-up and demonstration of

promising projects previously supported by ARPA-E, though still considered too risky for the private sector or another government agency to take on.

5. **Full Funding for the Weatherization & State Energy Programs** within the Weatherization Program account at the Department of Energy. The Weatherization Assistance Program helps low-income families, seniors, veterans, and individuals with disabilities improve the energy efficiency of their homes, freeing up limited resources for other essentials like food and medicine. Over the past four decades, WAP has provided weatherization services to more than 7.4 million low-income households. Each Weatherization Assistance dollar produces \$4.50 in benefits, including energy savings as well as improved health and safety. The program also helps workers and small businesses, directly supporting more than 8,500 jobs and supporting thousands more in related industries.
6. **Report language** for the Appalachian Regional Commission for the Independent Agencies account within the Department of Energy. With this language, *the Committee would support targeted investments in impoverished areas. It would direct the Commission to develop and implement measures to increase the share of investments in persistent poverty counties, defined as any county that has had 20 percent or more of its population living in poverty over the past 30 years, as measured by the 1993 Small Area Income and Poverty Estimates, the 2000 decennial census, and the most recent Small Area Income and Poverty Estimates, or any territory or possession of the United States; high-poverty census tract, defined as any census tract with a poverty rate of at least 20 percent as measured by the 2016–2020 5-year data series available from the American Community Survey of the Census Bureau; and any other impoverished areas the Commission determines to be appropriate areas to target. The Committee would direct the Commission to submit a report to the Committee that includes the amount of funds that were targeted to such areas; the percent change from fiscal year 2022 in the amount of funds that were targeted toward such areas; and, to the extent practicable, an assessment of the economic impact of the program on the areas, including data on the categories of individuals impacted by the targeting of funds to such areas under the program, disaggregated by household income, race, gender, age, national origin, disability status, and whether the individuals live in an urban area, suburban area, or rural area.*
7. **Report language** for the Delta Regional Authority for the Independent Agencies account within the Department of Energy. Under this language, the Committee would support targeted investments in impoverished areas. The Committee would then direct the Commission to develop and implement measures to increase the share of investments in persistent poverty counties, defined as any county that has had 20 percent or more of its population living in poverty over the past 30 years, as measured by the 1993 Small Area Income and Poverty Estimates, the 2000 decennial census, and the most recent Small Area Income and Poverty Estimates, or any territory or possession of the United States; high-poverty census tract, defined as any census tract with a poverty rate of at least 20

percent as measured by the 2016–2020 5-year data series available from the American Community Survey of the Census Bureau; and any other impoverished areas the Commission determines to be appropriate areas to target. The Committee would also direct the Commission to submit a report to the Committee that includes the amount of funds that were targeted to such areas; the percent change from fiscal year 2022 in the amount of funds that were targeted toward such areas; and, to the extent practicable, an assessment of the economic impact of the program on the areas, including data on the categories of individuals impacted by the targeting of funds to such areas under the program, disaggregated by household income, race, gender, age, national origin, disability status, and whether the individuals live in an urban area, suburban area, or rural area.

8. **Report language** for the Denali Commission for the Independent Agencies account within the Department of Energy. Under this language, the Committee would support targeted investments in impoverished areas. The Committee would then direct the Commission to develop and implement measures to increase the share of investments in persistent poverty counties, defined as any county that has had 20 percent or more of its population living in poverty over the past 30 years, as measured by the 1993 Small Area Income and Poverty Estimates, the 2000 decennial census, and the most recent Small Area Income and Poverty Estimates, or any territory or possession of the United States; high-poverty census tract, defined as any census tract with a poverty rate of at least 20 percent as measured by the 2016–2020 5-year data series available from the American Community Survey of the Census Bureau; and any other impoverished areas the Commission determines to be appropriate areas to target. The Committee would direct the Commission to submit a report to the Committee that includes the amount of funds that were targeted to such areas; the percent change from fiscal year 2022 in the amount of funds that were targeted toward such areas; and, to the extent practicable, an assessment of the economic impact of the program on the areas, including data on the categories of individuals impacted by the targeting of funds to such areas under the program, disaggregated by household income, race, gender, age, national origin, disability status, and whether the individuals live in an urban area, suburban area, or rural area.
9. **Report language** for the Northern Border Regional Commission for the Independent Agencies account within the Department of Energy. Under this language, the Committee would support targeted investments in impoverished areas. The Committee would direct the Commission to develop and implement measures to increase the share of investments in persistent poverty counties, defined as any county that has had 20 percent or more of its population living in poverty over the past 30 years, as measured by the 1993 Small Area Income and Poverty Estimates, the 2000 decennial census, and the most recent Small Area Income and Poverty Estimates, or any territory or possession of the United States; high-poverty census tract, defined as any census tract with a poverty rate of at least 20 percent as measured by the 2016–2020 5-year data series available from the

American Community Survey of the Census Bureau; and any other impoverished areas the Commission determines to be appropriate areas to target. The Committee would then direct the Commission to submit a report to the Committee that includes the amount of funds that were targeted to such areas; the percent change from fiscal year 2022 in the amount of funds that were targeted toward such areas; and, to the extent practicable, an assessment of the economic impact of the program on the areas, including data on the categories of individuals impacted by the targeting of funds to such areas under the program, disaggregated by household income, race, gender, age, national origin, disability status, and whether the individuals live in an urban area, suburban area, or rural area.

- 10. Report language** for the Southern Crescent Regional Commission for the Independent Agencies account within the Department of Energy. With this language, the Committee would support targeted investments in impoverished areas. The Committee would direct the Commission to develop and implement measures to increase the share of investments in persistent poverty counties, defined as any county that has had 20 percent or more of its population living in poverty over the past 30 years, as measured by the 1993 Small Area Income and Poverty Estimates, the 2000 decennial census, and the most recent Small Area Income and Poverty Estimates, or any territory or possession of the United States; high-poverty census tract, defined as any census tract with a poverty rate of at least 20 percent as measured by the 2016–2020 5-year data series available from the American Community Survey of the Census Bureau; and any other impoverished areas the Commission determines to be appropriate areas to target. The Committee would then direct the Commission to submit a report to the Committee that includes the amount of funds that were targeted to such areas; the percent change from fiscal year 2022 in the amount of funds that were targeted toward such areas; and, to the extent practicable, an assessment of the economic impact of the program on the areas, including data on the categories of individuals impacted by the targeting of funds to such areas under the program, disaggregated by household income, race, gender, age, national origin, disability status, and whether the individuals live in an urban area, suburban area, or rural area.

Thank you for your consideration of the requested items above. I look forward to working with you as you draft this year's Energy and Water Development, and Related Agencies appropriations bill.

Sincerely,

A handwritten signature in blue ink that reads "Eddie Bernice Johnson". The signature is fluid and cursive, with the first letters of each name being capitalized and prominent.

Eddie Bernice Johnson
Member of Congress

EDDIE BERNICE JOHNSON, Texas
CHAIRWOMAN

FRANK D. LUCAS, Oklahoma
RANKING MEMBER

Congress of the United States
House of Representatives

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

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June 30, 2021

The Honorable Rosa DeLauro
Chairwoman
Committee on Appropriations
H-307, The Capitol
U.S. House of Representatives
Washington, DC 20515

Dear Chairwoman DeLauro,

As the Chairwoman of the House Science, Space, and Technology Committee, I am writing to encourage your continued support for our nation's research and development enterprise at the Department of Energy (DOE). Investments in clean energy innovation, from fundamental research to commercial application programs, serve to strengthen U.S. scientific and economic leadership, support the next generation of scientists and technology leaders, and seed the industries that will accelerate a just transition to a clean energy economy.

That is why I am requesting that you continue to provide strong support for the DOE Office of Science, the Office of Energy Efficiency and Renewable Energy (EERE), the Advanced Research Projects Agency – Energy (ARPA-E), the Office of Electricity (OE), the Office of Cybersecurity, Energy Security, and Emergency Response (CESER), the Office of Nuclear Energy (NE), the Office of Fossil Energy and Carbon Management (FECM), and the Loan Programs Office (LPO), as well as support for a new Office of Clean Energy Demonstrations (OCED). All of the above-mentioned programs merit significant boosts to advance the development of fundamental science and energy technologies that are vital to our national security, our economy, and the environment in the decades to come. This request is a significant improvement from the past few years, and I want to take the time to highlight investments in our applied energy research and development programs that address all sectors of the economy.

I am very pleased to see that the president's budget request includes robust support for advanced nuclear energy technologies, renewable energy, electric vehicles, green hydrogen, innovative approaches to building retrofits, among many other important areas. Applied program offices

such as EERE, OE, NE, ARPA-E, and a revitalized Office of Fossil Energy and Carbon Management (FECM), are critical stops on the road to 100% net zero by 2050 and merit full support and funding. FECM is also critical as it ensures a seamless transition to a clean economy through research to reduce methane leaks, plugging abandoned oil and gas wells, and carbon removal technology. According to a recent IPCC report, carbon removal technologies will be necessary to limit warming to 1.5 °C.¹

In addition, I am encouraged by the Administration's strong support of the Loan Programs Office and encourage you to strongly support this request as well. A particularly notable highlight is the \$150 million request for the credit subsidy costs that are associated with an additional \$1.5 billion of guaranteed loan authority for innovative technologies such as electric vehicle infrastructure, carbon management, and many other clean energy projects. In addition, I am heartened to see the administration's support of additional grants and workforce development programs for Historically Black Colleges and Universities, Tribal Colleges and Universities, and Minority Serving Institutions, and encourage your support for these initiatives. To achieve the best solutions, we need a diverse array of experts seated at the table to keep pace with our competitors and deliver benefits to all Americans.

That said, I would also like to voice my concern over the Department's proposal to establish an Advanced Research Projects Agency – Climate (ARPA-C). Although I applaud the Administration's commitment to advancing breakthrough solutions for climate and energy, an ARPA model may not be the most appropriate approach to support research that addresses the significant climate resilience and adaptation problems at hand. Successful ARPAs are uniquely focused on short-term, high-risk, high reward activities that do not have a home in other federal programs and that the private sector is unable or unwilling to support on its own. An ARPA-C is not a replacement for a substantial ongoing RD&D program in resilience, adaption, and disaster prevention. It is also important for Members of the Committee on Science, Space, and Technology to have a better understanding of how an interagency research agency residing within DOE would operate, as a program like this has never been carried out before. Finally, I would note that the President's budget justification highlights the requirement of an authorization of this agency for it to be established, and our Committee has no current plans to advance this proposal. For all of these reasons, I would strongly recommend against providing support for an ARPA-C as it stands, unless and until we are provided far more convincing information on the justification and organization of this proposed agency.

I also have significant concerns about the Administration's budget request for the DOE Office of Science, which is our nation's largest federal sponsor of research in the physical sciences and the lead federal agency supporting scientific research to secure our energy future. I urge you to consider the benefits of further funding to support some of our nation's most important science and energy research programs and facilities, consistent with H.R. 3593, the bipartisan Department of Energy Science for the Future Act, which recently passed the House by a vote of 351-68. The budget request includes a \$400 million increase to a total of \$7.4 billion, but this level of growth is not sufficient for the current needs of the world-class user facilities, research programs, and national laboratories stewarded by the Office. If we as a nation are serious about achieving economy-wide emissions reductions, then we must prioritize the science and

¹ <https://www.ipcc.ch/sr15/chapter/spm/>

innovation that can get us across the finish line. Not only is the additional funding unevenly applied across the program offices, but by DOE's own estimates, it is quite insufficient to maintain the schedule and minimize the total costs of the bulk of the Office's major construction projects. Office of Science user facilities support over 30,000 researchers from industry, universities, national laboratories, and other federal agencies. However, they are oversubscribed, and completing ongoing upgrades and other user facility construction projects stewarded by the Office would alleviate that burden. Continued support for new scientific facilities currently under construction should be a key priority, as cutting funding below the previous DOE-approved project profiles will not only delay cutting edge research, but ultimately increase the total cost of these facilities to taxpayers, largely due to the ongoing cost of maintaining facility construction personnel.

Lastly, I am quite concerned that the recommendations in a comprehensive, community-driven long range plan that was recently produced by the Fusion Energy Sciences Advisory Committee (FESAC) and those in a recent National Academies report entitled *Bringing Fusion to the U.S. Grid* were not reflected in the President's budget request in a meaningful way. For many years, this Committee and others of jurisdiction have recommended that the Department and the fusion research community produce a strategic plan that identifies clear priorities under several realistic budget scenarios, similar to the successful planning processes for the high energy physics community and other research programs. The Department was also required to produce such a report following passage of the Department of Energy Research and Innovation Act in 2018. So I was very pleased to see DOE and the fusion research community take this challenge on and make the tough decisions to produce a robust and achievable roadmap that would ensure U.S. leadership in this critical field over the next decade. It is therefore disappointing, and frankly perplexing, that this report from FESAC in particular appears to have had no significant impact on the subsequent budget request for fusion research from the Department. Also of note, in Section 307(d), (e), (i), and (o) of the Department of Energy Research and Innovation Act and Section 972(c) of the Energy Policy Act of 2005, both as amended in the Energy Act of 2020, the Department was directed to establish programs in alternative and enabling concepts; inertial fusion for energy applications; and milestone-based fusion concept development. The President's budget request ignores this statutory direction. The Energy Act of 2020 also authorized funds to fully support the U.S. role in the ITER Project, but unfortunately, the Administration's proposal is \$79M below the authorized level required to keep this project on schedule and minimize its total cost. For these reasons, I strongly recommend that you provide funding levels for fusion research that are consistent with those in H.R. 3593, which builds on the enacted fusion research provisions in the Energy Act of 2020 and provides further guidance for these activities in accordance with the reports noted above.

In the face of serious and diverse economic and environmental threats, we should do what it takes to secure our position as the global economic and clean energy technology leader. A key to this leadership will be sustained, strong investments across the science and energy technology programs at DOE.

Thank you for your consideration.

Sincerely,



Eddie Bernice Johnson
Chairwoman
Committee on Science, Space, and Technology

Cc:

The Honorable Kay Granger
Ranking Member
Committee on Appropriations

The Honorable Frank Lucas
Ranking Member
Committee on Science, Space, and Technology

The Honorable Marcy Kaptur
Chairwoman
Subcommittee on Energy and Water Development, and Related Agencies
Committee on Appropriations

The Honorable Mike Simpson
Ranking Member
Subcommittee on Energy and Water Development, and Related Agencies
Committee on Appropriations

Congress of the United States
House of Representatives

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

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March 13, 2020

The Honorable Nita Lowey
Chairwoman
Committee on Appropriations
H-307, The Capitol
U.S. House of Representatives
Washington, DC 20515

Dear Chairwoman Lowey,

As the Chairwoman of the House Science, Space, and Technology Committee I am writing to encourage your continued support for our nation's science and technology infrastructure at the Department of Energy (DOE). Investments in the Office of Science, the energy technology programs, ARPA-E, and the loan programs serve to strengthen U.S. scientific and economic leadership, support the next generation of scientists and technology leaders, and seed the industries that will accelerate our transition to a clean energy economy.

We have seen how government-supported research can pay off when it comes to energy development. DOE-supported research was key to the development of utility-scale solar, high-efficiency gas turbines for coal plants, nuclear reactors, and the directional drilling and hydraulic fracturing technologies and techniques that have led to the shale gas boom of today. However, we should remember that those achievements required decades of consistent federal investment.

That is why I am requesting that you continue to provide strong support for the DOE Office of Science, the Office of Energy Efficiency and Renewable Energy (EERE), the Advanced Research Projects Agency – Energy (ARPA-E), the Office of Electricity (OE), the Office of Cybersecurity, Energy Security, and Emergency Response (CESER), the Office of Nuclear Energy (NE), the Office of Fossil Energy (FE), and the Loan Programs Office (LPO). All of these programs merit significant boosts to advance the development of fundamental science and

energy technologies that are vital to our national security, our economy, and the environment in the decades to come.

In its fourth budget request, the current Administration has continued to propose deep cuts that cede American leadership in emerging innovation and ignore the value of clean energy technologies. It is up to Congress to show the world that we are serious about addressing climate change and transforming our energy sector by seizing this unique opportunity. However, if we go down the path that this Administration has laid out thus far, we are destined to rely on other countries for the next generation of energy technologies, and we will abdicate our responsibility in fighting climate change.

The DOE Office of Science is our nation's largest federal sponsor of research in the physical sciences and the lead federal agency supporting fundamental scientific research to secure our energy future. The Office received \$7 billion in the fiscal year (FY) 2020 from the Further Consolidated Appropriations Act, 2020, but the Administration's Fiscal Year 2021 Budget Request proposes a \$1.16 billion cut for FY 2021. I believe that, at a minimum, the Office of Science should receive funding increases at greater than inflationary levels for FY 2021. Within the Office of Science, continued support for new scientific facilities currently under construction should be a key priority, as cutting below the previous DOE-approved project profiles will not only delay cutting edge research, but ultimately increase the total cost of these facilities to taxpayers, largely due to the ongoing cost of maintaining facility construction personnel. I also strongly recommend continued support for the full range of activities overseen by the Biological and Environmental Research program, including its very important climate research activities. In addition, in accordance with Section 307(c) and (d) of the Department of Energy Research and Innovation Act, the Department should expand support for innovative concepts in fusion energy, including various promising approaches to inertial fusion energy production that are not part of the National Nuclear Security Administration's stockpile stewardship program. DOE should fully support the U.S. role in the ITER Project, especially given the project's substantial management improvements and overall progress over the last five years. Unfortunately, the Administration's proposal of \$107 million for the U.S. contribution to ITER is far below the levels that DOE itself has projected are required to keep this project on schedule and minimize its cost. Due to the shortfalls in meeting the U.S. commitments to this project prior to the substantial levels you secured in FY 2020, which I greatly appreciate, the required investment is now estimated to be \$347 million in FY 2021, including \$147 million for the cash contribution to the ITER Organization. I strongly recommend that you provide at least this level of funding to honor our international commitment to this project and avert the significant financial, diplomatic, and scientific impacts of undermining its continued progress.

ARPA-E, LPO, and the Energy Innovation Hubs are also critically important components of the American energy innovation ecosystem fostered by the Department. Yet the Administration has

proposed the outright elimination of ARPA-E and LPO in its budget request. And while I am aware of the Administration's proposed support for critical materials and water desalination research, I have yet to receive sufficient justification for its proposal to repurpose funds for the two Hubs supported by the Advanced Manufacturing Office (AMO), within EERE, to fund cross-cutting initiatives with similar research topics. I am concerned that this change could squander the demonstrated success of each Hub and diminish the Department's overall research capacity in these critical areas. ARPA-E, LPO, and the Hubs model all have strong records of success to justify not only their existence, but increased investments (in the case of ARPA-E and the Hubs) and increased leveraging of current statutory loan and loan guarantee authorities (in the case of LPO) going forward. It is my hope that you will take into account the notable records of success of these programs and, consistent with the bipartisan ARPA-E Reauthorization Act of 2019, I recommend that you provide at least \$497 million for ARPA-E in FY 2021.

Furthermore, if we as a nation are serious about achieving economy-wide emissions reductions, we will need to support robust investments in our applied energy research and development programs that address all sectors of the economy. In particular, the industrial sector faces a unique set of challenges given the specialized technology solutions needed to reduce emissions from each unique type of manufacturing process. For this reason, I recommend that you provide funding for a cross-cutting initiative housed under AMO that would enable coordination across the entire DOE research, development, demonstration, and commercial application portfolio to reduce emissions from the manufacturing sector. This would include carbon capture, smart and sustainable manufacturing processes, low-emissions high-temperature heat generation, and the production and use of net-zero emissions fuels, to name a few key areas. In addition, consistent with the Clean Industrial Technology Act of 2019, I recommend that \$80 million be provided to AMO in fiscal year 2021 to fund the demonstration of technologies that reduce emissions from the industrial sector. Finally, I recommend that you support funding for the Clean Energy Manufacturing Innovation Institutes, as well as funding for the renewal of existing Institutes that is set to expire at the end of this year, subject to merit review.

I also strongly support continued funding for the other technology development programs within EERE; the Office of Electricity; the Office of Cybersecurity; Energy Security and Emergency Response; the Office of Nuclear Energy; and the Office of Fossil Energy. In the FY 2021 budget proposal, many of these offices would experience massive cuts. EERE would be cut by 74.2% (or \$2 billion), Nuclear Energy would be cut by 21% (or \$314 million), and the Office of Fossil Energy would be cut by 2.6% (or \$19.4 million). Essentially the only justification that the Administration has provided for all of these cuts is that the government should only support "early-stage" research. Yet no clear definition is provided for "early-stage" research given that the term is used quite inconsistently throughout the budget request, and there is no evidence whatsoever that a careful analysis was carried out to determine which of these eliminated activities will likely be supported by the private sector alone at a sufficient pace to meet our

national economic, environmental, or security needs. One of many examples across the DOE applied energy offices where funding should be provided to support later-stage research is in the Office of Nuclear Energy. Nuclear energy production is emissions-free, but advanced nuclear facilities will have high up-front capital costs of construction due to the nature and complexity of these technologies. Many reactor developers are now ready to build but lack this large amount of up-front funding needed to do so. This is why, to make meaningful progress in mitigating the most significant potential impacts of climate change and secure our international leadership in nuclear energy, I recommend support for cost-shared advanced reactor demonstration projects in FY 2021.

Two welcome exceptions to an otherwise dismal budget request are that the Office of Electricity and the Office of Cybersecurity, Energy Security, and Emergency Response would both receive proposed budget increases of 2.7% (\$5 million) and 18.3% (\$28.6 million), respectively. These programs are especially important to the development of a modern, clean, and secure electricity transmission and distribution system. Within the Administration's topline request for DOE R&D, \$190 million is allocated across EERE, OE, and the Office of Science to support an Energy Storage Grand Challenge to advance next-generation energy storage technologies. I am supportive of efforts to advance new energy storage solutions and those that take a holistic approach that ensures collaboration across the full range of relevant energy program offices.

In a rapidly changing global marketplace, with other countries that do not always play by the same rules, the only thing we can know for sure is that the future of the U.S. economy will be dictated by our commitment to pushing the frontiers in all fields of science and technology. In the face of serious and diverse economic and environmental threats, especially climate change, we should do what it takes to secure our position as the global economic and clean energy technology leader. A key to this leadership will be sustained, strong investments across the science and energy technology programs at DOE.

Thank you for your consideration.

Sincerely,



Eddie Bernice Johnson

Chairwoman

Committee on Science, Space, and Technology

cc:

The Honorable Kay Granger
Ranking Member
Committee on Appropriations

The Honorable Frank Lucas
Ranking Member
Committee on Science, Space, and Technology

The Honorable Marcy Kaptur
Chairwoman
Subcommittee on Energy and Water Development, and Related Agencies
Committee on Appropriations

The Honorable Mike Simpson
Ranking Member
Subcommittee on Energy and Water Development, and Related Agencies
Committee on Appropriations

Congress of the United States

House of Representatives

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

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April 1, 2019

The Honorable Nita Lowey
Chairwoman
Committee on Appropriations
H-307, The Capitol
U.S. House of Representatives
Washington, DC 20515

Dear Chairwoman Lowey,

As the Chairwoman of the House Science, Space, and Technology Committee I am writing to encourage your continued support for our nation's science and technology infrastructure at the Department of Energy (DOE). Investments in the Office of Science, the energy technology programs, ARPA-E, and the loan programs serve to strengthen U.S. scientific and economic leadership as they advance innovation across a wide range of research areas, support the next generation of scientists and technology leaders, and seed the industries that will accelerate our transition to a clean energy economy.

We have seen how government-supported research can pay off when it comes to energy development. DOE-supported research was key to the development of utility-scale solar, high-efficiency gas turbines for coal plants, nuclear reactors, and the directional drilling and hydraulic fracturing technologies and techniques that have led to the shale gas boom of today. However, we should remember that those achievements required decades of consistent federal investment.

That is why I am requesting that you continue to provide strong support for the DOE Office of Science, the Office of Energy Efficiency and Renewable Energy (EERE), the Advanced Research Projects Agency – Energy (ARPA-E), the Office of Electricity, the Office of Cybersecurity, Energy Security, and Emergency Response, the Office of Nuclear Energy, the Office of Fossil Energy, and the Loan Programs Office. All of these programs merit significant boosts to advance the development of fundamental science and energy technologies that will be vital to our national security, our economy, and the environment in the decades to come.

In its third budget request, the current Administration has continued to propose deep cuts that cede American leadership in emerging innovation, and ignore the value of clean energy technologies. It is up to Congress to show the world that we are serious about addressing climate change and transforming our energy sector by seizing this unique opportunity. Investing in clean energy technologies is crucial to American economic competitiveness. It is my hope that America can be a leader in clean energy technology, but if we go down the path this Administration has laid out thus far, we are destined to rely on other countries for the next generation of energy technologies, and abdicate our responsibility in fighting climate change.

The innovative programs at the Department of Energy, with their unmatched talent, world-class facilities, and unique role in taking on technology challenges that the private sector cannot or will not address alone, are some of our most effective tools for ensuring our long-term economic growth, for protecting our environment, and for promoting our energy security. Your support at this time is vital, and greatly appreciated.

The DOE Office of Science is our nation's largest federal sponsor of research in the physical sciences and the lead federal agency supporting fundamental scientific research to secure our energy future. The Office received \$6.585 billion in the fiscal year (FY) 2019 from the Energy and Water Development and Related Agencies Appropriations Act, 2019, but the Administration's current request proposes a \$1.1 billion cut for FY 2020. I believe that, at a minimum, the Office of Science should receive funding increases at greater than inflationary levels for FY 2020. Within the Office of Science, continued support for new scientific facilities currently under construction should be a key priority, as cutting below the previous DOE-approved project profiles will not only delay cutting edge research but ultimately increase the total cost of these facilities to taxpayers, largely due to the ongoing cost of maintaining facility construction personnel. I also strongly recommend continued support for the full range of activities overseen by the Biological and Environmental Research program, including its incredibly important climate research activities. In addition, the Department should expand support for innovative concepts in fusion energy, including various promising approaches to inertial fusion energy production that are not part of the National Nuclear Security Administration's stockpile stewardship program, and fully support the U.S. role in the ITER Project, especially given the project's substantial management improvements and overall progress over the last four years. Unfortunately, the Administration's proposal of \$107 million for the U.S. contribution to ITER is far below the levels that DOE itself has projected are required to keep this project on schedule and minimize its cost. Due to the previous shortfalls in meeting the U.S. commitments to this project, this required investment is now \$280 million at a minimum in FY 2020, including \$100 million for the cash contribution to the ITER Organization. I strongly recommend that you provide at least this level of funding to honor our

international commitment to this project, and avert the significant financial, diplomatic, and scientific impacts of undermining its continued progress.

ARPA-E, the Loan Programs Office (LPO), and the Energy Innovation Hubs are also critically important components of the American energy innovation ecosystem fostered by the Department. Yet the Administration has proposed the outright elimination of ARPA-E, LPO, and the two Hubs supported by EERE's Advanced Manufacturing Office in its budget request. ARPA-E, LPO, and the Hubs model all have strong records of success to justify not only their existence, but increased investments (in the case of ARPA-E and the Hubs) and increased leveraging of current statutory loan and loan guarantee authorities (in the case of LPO) going forward. It is my hope that you will take into account the notable records of success of these programs and increase their funding above inflationary levels for FY 2020.

I also strongly support continued funding for the wide range of activities within the Office of Energy Efficiency and Renewable Energy, the Office of Electricity, the Office of Cybersecurity, Energy Security, and Emergency Response, the Office of Nuclear Energy, and the Office of Fossil Energy. In the FY 2020 budget proposal, many of these offices would experience massive cuts. EERE would be cut by 85.6% (or \$2 billion), Nuclear Energy would be cut by 37.9% (or \$502 million), and Fossil Energy R&D would be cut by 24.1% (or \$178 million). Essentially the only justification that the Administration has provided for all of these drastic cuts is that the government should only support "early-stage" research. Yet no clear definition is provided for "early-stage" research given that the term is used quite inconsistently throughout the budget request, and there is no evidence whatsoever that a careful analysis was carried out to determine which of these eliminated activities will likely be supported by the private sector alone at a sufficient pace to meet our national economic, environmental, or security needs.

Two welcome exceptions to an otherwise dismal Budget Request are that the Office of Electricity and the Office of Cybersecurity, Energy Security, and Emergency Response would both receive proposed budget increases of 17.3% (\$27 million) and 30% (\$30 million), respectively. These programs are especially important to the development of a modern, clean, and secure electricity transmission and distribution system. The Administration has also proposed \$105 million for an Advanced Energy Storage Initiative, which would build upon efforts to improve electrical energy storage, and collaborate with a broad group of energy offices. While we would like additional details on the Initiative, we are supportive of efforts to advance new energy storage solutions and take a holistic approach that collaborates across the full range of relevant energy program offices.

In a rapidly changing global marketplace, with other countries that do not always play by the same rules, the only thing we can know for sure is that the future of the U.S. economy will be dictated by our commitment to pushing the frontiers in all fields of science and technology. In

the face of serious and diverse economic and environmental threats, especially climate change, we should do what it takes to secure our position as the global economic and clean energy technology leader. A key to this leadership is sustained strong investments across the science and energy technology programs at DOE.

Thank you for your consideration.

Sincerely,

A handwritten signature in blue ink that reads "Eddie Bernice Johnson". The signature is fluid and cursive, with the first letters of each name being capitalized and prominent.

Eddie Bernice Johnson

Chairwoman

Committee on Science, Space, and Technology

cc:

The Honorable Kay Granger
Ranking Member
Committee on Appropriations

The Honorable Frank Lucas
Ranking Member
Committee on Science, Space, and Technology

The Honorable Marcy Kaptur
Chairwoman
Subcommittee on Energy and Water Development, and Related Agencies
Committee on Appropriations

The Honorable Mike Simpson
Ranking Member
Subcommittee on Energy and Water Development, and Related Agencies
Committee on Appropriations

Congress of the United States

House of Representatives

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

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March 15, 2018

The Honorable Rodney P. Frelinghuysen
Chairman
Committee on Appropriations
H-305, The Capitol
U.S. House of Representatives
Washington, DC 20515

The Honorable Nita Lowey
Ranking Member
Committee on Appropriations
1016 Longworth House Office Building
U.S. House of Representatives
Washington, DC 20515

Dear Chairman Frelinghuysen and Ranking Member Lowey,

As the Ranking Member of the House Science, Space, and Technology Committee I am writing to encourage your continued support for our nation's science and technology infrastructure at the Department of Energy (DOE). Investments in the Office of Science, the energy technology programs, ARPA-E, and the loan programs serve to strengthen U.S. scientific and economic leadership as they advance innovation across a wide range of research areas, support the next generation of scientists and technology leaders, and seed the industries of tomorrow.

We have seen how government-supported research can pay off when it comes to energy development. DOE-supported research was key to the development of high-efficiency gas turbines for coal plants, nuclear reactors, utility-scale solar energy, and the directional drilling and hydraulic fracturing technologies and techniques that have led to the shale gas boom of today. However, we should remember that those achievements required decades of consistent federal investment.

That is why I am requesting that you continue to provide strong support for the DOE Office of Science, the Office of Energy Efficiency and Renewable Energy (EERE), the Advanced Research Projects Agency – Energy (ARPA-E), the Office of Electricity Delivery and Energy Reliability, the Office of Nuclear Energy, the Office of Fossil Energy, and the Loan Programs Office. All of these programs merit significant boosts to advance the development of fundamental science and clean energy technologies that will be vital to our national security, our economy, and the environment in the decades to come.

The current Administration has indicated that it does not intend to follow through on the recent international agreement, called Mission Innovation, between 22 nations and the European Union to double clean energy investments over five years. It is up to Congress to show the world that we are serious about the growing challenge of transforming our energy sector by seizing this unique opportunity. Investing in clean energy technologies is crucial to American economic competitiveness. It is my hope that America can be an energy technology exporter in the 21st century, but if we go down the path this Administration has laid out thus far, we are destined to rely on other countries for the next generation of energy technologies.

The innovative programs at the Department of Energy, with their unmatched talent, world-class facilities, and unique role in taking on technology challenges that the private sector cannot or will not address alone, are some of our most effective tools for ensuring our long-term economic growth, for protecting our environment, and for promoting our energy security. Your support at this time is vital, and greatly appreciated.

The DOE Office of Science is our nation's largest federal sponsor of research in the physical sciences and the lead federal agency supporting fundamental scientific research to secure our energy future. The Office received \$5.39 billion in the fiscal year (FY) 2017 omnibus appropriations bill. I believe that, at a bare minimum, we must maintain this level of funding for FY 2019. Within the Office of Science, continued support for new scientific facilities currently under construction should be a key priority, as cutting below the previous DOE-approved project profiles will not only delay cutting edge research but ultimately increase the total cost of these facilities to taxpayers, largely due to the ongoing cost of maintaining facility construction personnel. I also strongly recommend continued support for the full range of activities overseen by the Biological and Environmental Research program, including its incredibly important climate research activities. In addition, the Department should expand support for innovative concepts in fusion energy, including various promising approaches to inertial fusion energy production that are not part of the National Nuclear Security Administration's stockpile stewardship program, and strengthen support for the U.S. role in the ITER Project, especially given the project's substantial management improvements and overall progress over the last three years. We need to honor our nation's funding commitment to the ITER Project.

ARPA-E, the Loan Programs Office (LPO), and the Energy Innovation Hubs are also critically important components of the American energy innovation ecosystem fostered by the Department. Yet the current Administration has proposed the outright elimination of ARPA-E, LPO, and three of the five existing Hubs in its budget request. ARPA-E, LPO, and the Hubs model all have strong records of success to justify not only their existence, but increased investments (in the case of ARPA-E and the Hubs) and increased leveraging of current statutory loan and loan guarantee authorities (in the case of LPO) going forward. It is my hope that you will take into account the notable records of success of these programs and at the very least maintain their funding levels from FY 2017.

I also strongly support continued funding for the wide range of activities within the Office of Energy Efficiency and Renewable Energy (EERE), the Office of Electricity Delivery and Energy Reliability, the Office of Nuclear Energy, and the Office of Fossil Energy. In the FY 2019 budget proposal, all of these offices would experience massive cuts. EERE would be cut by 65.8% (or \$1.34 billion), Electricity Delivery and Energy Reliability would be cut by 31.6% (or \$72.5 million), Nuclear Energy would be cut by 25.5% (or \$258.9 million), and Fossil Energy R&D would be cut by 24.8% (or \$165.9 million). Essentially the only justification that the Administration has provided for all of these drastic cuts is that the government should only support “early-stage” research. Yet no clear definition is provided for “early-stage” research given that the term is used quite inconsistently throughout the budget request, and there is no evidence whatsoever that a careful analysis was carried out to determine which of these eliminated activities will likely be supported by the private sector alone at a sufficient pace to meet our national economic, environmental, or security needs.

In a rapidly changing global marketplace, with other countries that do not always play by the same rules, the only thing we can know for sure is that the future of the U.S. economy will be dictated by our commitment to pushing the frontiers in all fields of science and technology. In the face of serious and diverse economic and environmental threats, we should do what it takes to secure our position as the global economic and clean energy technology leader. A key to this leadership is sustained strong investments across the science and energy technology programs at DOE.

Thank you for your consideration.

Sincerely,



Eddie Bernice Johnson

Ranking Member

Committee on Science, Space, and Technology

cc: Rep. Lamar Smith
Chairman
Committee on Science, Space, and Technology

Rep. Mike Simpson
Chairman
Subcommittee on Energy and Water Development
Committee on Appropriations

Rep. Marcy Kaptur
Ranking Member
Subcommittee on Energy and Water Development
Committee on Appropriations

Congress of the United States

House of Representatives

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

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June 7, 2017

The Honorable Rodney P. Frelinghuysen
Chairman
Committee on Appropriations
H-305, The Capitol
U.S. House of Representatives
Washington, DC 20515

The Honorable Nita Lowey
Ranking Member
Committee on Appropriations
1016 Longworth House Office Building
U.S. House of Representatives
Washington, DC 20515

Dear Chairman Rogers and Ranking Member Lowey,

As the Ranking Member of the House Science, Space, and Technology Committee I am writing to encourage your continued support of our nation's science and technology infrastructure at the Department of Energy (DOE). Investments in the Office of Science, the energy technology programs, ARPA-E, and the loan programs serve to strengthen U.S. scientific and economic leadership as they advance innovation in a wide range of research areas, support the next generation of scientists and technology leaders, and seed the industries of tomorrow.

We have seen how government-supported research can pay off when it comes to energy development. DOE-supported research was key to the development of high-efficiency gas turbines for coal plants, nuclear reactors, and the directional drilling and hydraulic fracturing technologies and techniques that have led to the shale gas boom of today. However, we should remember that those achievements required decades of consistent federal investment.

That is why I am requesting that you continue to provide strong support for the DOE Office of Science, the Office of Energy Efficiency and Renewable Energy (EERE), the Advanced Research Projects Agency – Energy (ARPA-E), the Office of Electricity Delivery and Energy Reliability, the Office of Nuclear Energy, the Office of Fossil Energy, and the Loan Programs Office. All of these programs merit significant boosts to advance the development of fundamental science and clean energy technologies that will be vital to our national security, our economy, and the environment in the decades to come.

The current Administration has indicated that it does not intend to follow through on the recent international agreement, called Mission Innovation, between 22 nations and the European Union to double clean energy investments over five years. It is up to Congress to show the world that we are serious about the growing challenge of transforming our energy sector by seizing this unique opportunity. Investing in clean energy technologies is crucial to American economic competitiveness. It is my hope that America can be an energy technology exporter in the 21st century, but if we go down the path this Administration has laid out thus far, we are destined to rely on other countries for the next generation of energy technologies.

The innovative programs at the Department of Energy, with their unmatched talent, world-class facilities, and unique role in taking on technology challenges that the private sector cannot or will not address alone, are some of our most effective tools for ensuring our long-term economic growth, for protecting our environment, and for promoting our energy security. Your support at this time is vital, and greatly appreciated.

The DOE Office of Science is our nation's largest federal sponsor of research in the physical sciences and the lead federal agency supporting fundamental scientific research to secure our energy future. The Office received \$5.39 billion in the fiscal year (FY) 2017 omnibus appropriations bill. I believe that, at a bare minimum, we must maintain this level of funding for FY 2018. Within the Office of Science, continued support for new scientific facilities currently under construction should be a key priority, as cuts below the previous DOE-approved project profiles will not only delay cutting edge research but ultimately increase the total cost of these facilities to taxpayers, largely due to the ongoing cost of maintaining facility construction personnel. I also strongly recommend continued support for the full range of activities overseen by the Biological and Environmental Research program, including its incredibly important climate research activities. In addition, the Department should expand support for innovative concepts in fusion energy, including various promising approaches to inertial fusion energy production that are not part of the National Nuclear Security Administration's stockpile stewardship program, and continue to support the U.S. role in the ITER Project given its substantial management improvements over the last two years.

ARPA-E, the Loan Programs Office (LPO), and the Energy Innovation Hubs are also critically important components of the American energy innovation ecosystem fostered by the Department. Yet the current Administration has proposed the outright elimination of all of these valuable programs in its budget request. ARPA-E, LPO, and the Hubs model all have strong records of success to justify not only their existence, but increased investments (in the case of ARPA-E and the Hubs) and increased leveraging of current statutory loan and loan guarantee authorities (in the case of LPO) going forward. It is my hope that you will take into account the notable records of success of these programs and at the very least maintain their funding levels from FY 2017.

I also strongly support continued funding for the wide range of activities within the Office of Energy Efficiency and Renewable Energy (EERE), the Office of Electricity Delivery and Energy Reliability, the Office of Nuclear Energy, and the Office of Fossil Energy. In the FY 2018 budget proposal, all of these offices would experience massive cuts. EERE would be cut by 70% (or \$1.45 billion), Fossil Energy R&D would be cut by 58% (or \$388 million), Electricity Delivery and Energy Reliability would be cut by 48% (or \$110 million), and Nuclear Energy would be cut by 31% (or \$314 million). Essentially the only justification that the Administration has provided for all of these drastic cuts is that the government should only support “early-stage” research. Yet no clear definition is provided for “early-stage” research given that the term is used quite inconsistently throughout the budget request, and there is no evidence whatsoever that a careful analysis was carried out to determine which of these eliminated activities will likely be supported by the private sector alone at a sufficient pace to meet our national economic, environmental, or security needs.

An example of this dangerous hypocrisy can be found in the Fossil Energy R&D proposal, which would cut crucial carbon capture research by 84% (or \$85 million) while requesting new funding in the Unconventional Fossil Energy Technologies from Petroleum – Oil Technologies program “to establish a new field site project in an emerging play that has strong resource potential.” While this new field site is clearly not early-stage research by any reasonable definition – despite the proposal’s repeated use of the term – the Administration makes no attempt to rationalize this exception to its supposed reprioritization of the Department.

In a rapidly changing global marketplace, with other countries that do not always play by the same rules, the only thing we can know for sure is that the future of the U.S. economy will be dictated by our commitment to pushing the frontiers in all fields of science and technology. In the face of serious and diverse economic and environmental threats, we should do what it takes to secure our position as the global economic and clean energy technology leader. A key to this leadership is sustained strong investments across the science and energy technology programs at DOE.

Thank you for your consideration.

Sincerely,



Eddie Bernice Johnson

Ranking Member

Committee on Science, Space, and Technology

cc: Rep. Lamar Smith
Chairman
Committee on Science, Space, and Technology

Rep. Mike Simpson
Chairman
Subcommittee on Energy and Water Development
Committee on Appropriations

Rep. Marcy Kaptur
Ranking Member
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Committee on Appropriations

EDDIE BERNICE JOHNSON, Texas
CHAIRWOMAN

FRANK D. LUCAS, Oklahoma
RANKING MEMBER

Congress of the United States
House of Representatives

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

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November 7, 2022

The Honorable Rosa DeLauro
Chair
Committee on Appropriations
H-305, The Capitol
U.S. House of Representatives
Washington, DC 20515

Dear Chair DeLauro,

I want to thank you for your strong support of the *CHIPS and Science Act*. The coordinated effort that enabled the bill to pass Congress and reach the President was no small feat to accomplish, and I greatly appreciate your and your staff's efforts on its behalf.

As the Chairwoman of the Science, Space, and Technology Committee, and a leader in crafting the *CHIPS and Science Act*, I am writing to strongly encourage you to bring our efforts on the *CHIPS and Science Act* to fruition by fully funding the activities and authorization levels we put forth in the Act. As you know, this Act was put together with rigorous input from the scientific community, stakeholders, academia, the manufacturing sector, and Americans across the country. In order to strengthen our competitiveness and meet the many challenges we face as a nation, it's important that these authorization levels be matched by the necessary appropriations.

The sections below address the investments we seek to make with the enactment of the *CHIPS and Science Act*. I respectfully ask that you consider the following funding levels for these agencies and the specific programs within the agencies authorized by the Act.

National Science Foundation

The National Science Foundation (NSF) has served this nation remarkably since its creation more than 70 years ago. Through its funding of fundamental research across all STEM disciplines, NSF has catalyzed countless scientific breakthroughs that have expanded human understanding and served as the building blocks for technological revolutions. Unfortunately,

funding for NSF has stagnated for years even as the scientific opportunities continue to grow. While the 18.9 percent increase for NSF in the President's proposal is a significant step in the right direction, it is not sufficient. The course Congress set for the future of NSF in the *CHIPS and Science Act* requires \$11.9 billion in appropriations for NSF in FY 2023. This includes \$9.05 billion for the Research and Related Activities (R&RA) account (a \$1.89 billion or 26 percent increase from FY 2022), \$1.95 billion for the Education (EDU) account (a \$944 million or 94 percent increase from FY 2022), and \$620 million for the Agency Operations and Award Management (AOAM) account (a \$220 million or 55 percent increase from FY 2022). The National Science Board (NSB) and the Office of Inspector General (OIG) also have authorized increases of 11 percent and 23 percent, respectively.

I urge you to provide the authorized increases across the agency. They are essential for ensuring NSF can realize the full scale and scope of the new activities mandated by Congress in the *CHIPS and Science Act*. This includes right sizing investments in foundational research across all science and engineering disciplines; ramping up all components of the new Technology, Innovation, and Partnerships (TIP) Directorate; and fully funding new and expanded STEM education and broadening participation programs, including capacity building for minority serving institutions, expanding geographic and institutional diversity, and scholarships, fellowships, and traineeships. I want to call particular attention to the authorized increases to the AOAM and OIG accounts. These are critical for ensuring NSF can maintain high standards for mission-enabling administrative and oversight functions, including identifying and mitigating risks to research security.

National Institute of Standards and Technology

The National Institute of Standards and Technology (NIST) supports U.S. competitiveness by advancing measurement science, standards, and technology across every critical industry of the future and sector of the economy. After three years of largely flat funding, NIST lacks the resources and infrastructure it needs to conduct its critical work. I urge you to provide a substantial increase to NIST's accounts in the FY 2023 enacted budget to match the levels authorized in the *CHIPS and Science Act*.

The Act authorizes NIST's Scientific and Technical Research and Services (STRS) account, which funds NIST's laboratory research, at \$979 million in FY 2023. Recent discretionary budgets have been flat, which has restricted NIST's ability to pursue priority research in areas critical to our national and economic security, such as quantum information science, artificial intelligence, and biotechnology. The Act's STRS authorization levels will allow the agency to maintain and expand these important activities. The *CHIPS and Science Act* also seeks to bolster the agency's extramural manufacturing programs. It authorizes \$275 million in FY 2023 for the Hollings Manufacturing Extension Partnership (MEP) to maintain and improve the program, support a pilot program for expansion awards for MEP centers, and improve supply chain resilience by creating a national supply chain database. The Act also authorizes \$97 million in FY 2023 for the Manufacturing USA program to support several additional manufacturing USA institutes in sectors that will underpin the economy of tomorrow.

Finally, I strongly support investing in NIST's construction account to modernize NIST's labs. Many of NIST's facilities are aging or outdated, with roughly 60 percent of its facilities remaining in poor to critical condition. The agency also has over \$850 million in deferred maintenance projects. I urge you to match *the CHIPS and Science Act* and fund the construction account at \$200 million in addition to any community projects. These levels will ensure that maintenance and construction projects on both NIST campuses remain on track.

Economic Development Agency

The Economic Development Agency (EDA) serves a unique role in supporting rebuilding and transformation of America's innovation and manufacturing ecosystems. That is why Congress created two new programs for EDA in *the CHIPS and Science Act*. If funded at the authorized levels, these programs will help accelerate high returns on the Federal government's investments in R&D by investing in persistently distressed communities and cultivating regional hubs of innovation and technology excellence in communities throughout our country.

The Administration requested \$50 million for the Recompete Pilot Program in FY 2023; however, I urge the Committee to fund the program at the authorized level of \$200 million. This program will boost America's persistently distressed communities by providing flexible multiyear awards tailored to the specific needs of each community. By investing in local economies that have been left behind, we will ensure that all American communities can contribute to and benefit from American innovation. With equal enthusiasm, I urge the Committee to fully fund the Regional Technology and Innovation Hubs program at \$1.485 billion for FY 2023. If fully funded, the Tech Hubs program will ensure that we have productive and geographically diverse pipelines to support development and deployment of discoveries beyond the lab and, in doing so, will create good high-paying jobs, nurture startups addressing pressing challenges, and support a wave of domestic manufacturing across our nation. A secure and distributed innovation and manufacturing sector is good for American competitiveness, good for supply chain resilience, and will reduce economic inequities across the country.

Department of Energy

As you work toward finalizing appropriations for Fiscal Year 2023, I strongly urge you to include \$8.9 billion for the Department of Energy's (DOE) Office of Science, consistent with the level authorized for FY 2023 in the bipartisan *CHIPS and Science Act*. The Office is the lead federal agency supporting scientific research for energy applications. By providing research funding to thousands of investigators across hundreds of different entities, and through the construction and operation of large-scale experiments and unique scientific user facilities, the Office of Science plays an important and singular role in the nation's efforts to address the climate crisis through the development of new clean energy technologies, and it supports research to probe some of our most fundamental questions surrounding the very nature of matter, energy, space, and time.

I recognize and appreciate that both the House and Senate marks have exceeded the level proposed by the Administration, especially given that the FY 2023 request would not adequately support the research, construction, and facility maintenance with which the Office of Science has

been tasked. However, my Committee's oversight activities and direct engagement with DOE officials have revealed that even more robust funding levels will be necessary to keep major construction projects on budget and on schedule, maintain full operations and support technical staff at existing facilities, address supply chain delays and other impacts of the COVID-19 pandemic, and continue to support world class research carried out by our national laboratories, universities, and private companies. This is true even when accounting for funding provided through the *Inflation Reduction Act*, which addresses deficits that have already been incurred but does not compensate for the shortfalls that the Office faces going forward. As such, I am confident that the \$8.9 billion we included in the *CHIPS and Science Act*, and which I am requesting here, will fully enable the Office of Science to meet the financial requirements inherent to the activities described above.

National Aeronautics and Space Administration

The National Aeronautics and Space Administration (NASA)'s research and development programs lead the world in pathfinding discoveries and advances in science, space technology, aeronautics, and human exploration. Our investments in NASA not only lead to awe-inspiring results, such as the James Webb Space Telescope, they help create jobs, develop a skilled workforce, grow our economy, and provide important geopolitical soft power for the United States. NASA's mission inspires Americans and people across the globe. For Fiscal Year 2023, I request full funding to implement the NASA Authorization Act of 2022 in the *CHIPS and Science Act*. For Aeronautics, I request that resources, in addition to those requested by the President, be appropriated to carry out the research and development initiative on reduction of greenhouse gas and noise emissions from aircraft, under the Cleaner, Quieter Airplanes section. This work reinforces NASA's important role in contributing to a sustainable aviation future. In addition, I encourage you to provide resources for implementing the experimental aircraft flight demonstration activities in the *Act*, which will continue to advance U.S. leadership in aeronautics and aviation.

For Science, I request funding of no less than \$140 million for Fiscal Year 2023 for the NEO Surveyor Mission to ensure its launch by March 2026 or as early as possible, as directed in the *Act* and to help mitigate resource reductions to the project. This mission will provide essential contributions to NASA's Congressionally directed surveys to detect, track, catalogue, and characterize near-Earth objects in order to identify and mitigate the potential risks of their impacting Earth. I further request funding toward meeting the goal, under the *Act*, for research and analysis funding. For Space Technology, I request that you provide resources, in addition those requested by the President, to carry out the space nuclear propulsion program directed in the *Act*. Space nuclear propulsion is essential for enabling the United States' goal to send humans to the surface of Mars in the late 2030s and advancing NASA's deep space exploration missions. In addition, Madame Chairwoman, I request full funding to carry out the direction on space launch configurations in the *Act*, which is vital to realizing the nation's Moon to Mars goals.

National Oceanic and Atmospheric Administration

Finally, I strongly encourage you to fully fund federal ocean and coastal acidification research activities at the National Oceanic and Atmospheric Administration (NOAA) and at the National Science Foundation at \$20.5 million and \$20 million respectively. The ocean has buffered the largest impacts of climate change for hundreds of years. With one third of atmospheric carbon dioxide dissolving into the ocean, we have seen a decrease in ocean and coastal pH. These more acidic ocean and coastal environments can have dire consequences for marine life, and on the coastal industries that rely on them. The reauthorization of the *Federal Ocean Acidification Research and Monitoring Act* as part of the *CHIPS and Science Act* will be vital to improving our understanding of the impacts of an acidifying ocean on marine ecosystems and on coastal communities and economies. This funding will also support coastal communities develop adaptation strategies based on robust federal research and monitoring.

In closing, I recognize the challenges you face in constructing a viable Omnibus appropriations bill in the closing months of the 117th Congress. Yet, the enactment of the *CHIPS and Science Act* has provided the nation an historic opportunity to make transformational changes to spur innovation, create jobs, foster competitiveness, and improve the quality of life for all Americans if we provide the necessary funding. I stand ready to help you achieve that goal, and I appreciate all the important work you are doing for our nation.

Sincerely,



Eddie Bernice Johnson
Chairwoman
Committee on Science, Space, and Technology