Bipartisan Policy Center
Where democracy gets to work

# Bipartisan Policy Center Response to Request for Information on Office of Technology Transitions Current and Future Commercialization Programming

**TO:** Office of Technology Transitions, U.S. Department of Energy

**DATE:** January 19, 2022

**RE:** DE-FOA-0002607: Request for Information on Office of Technology Transitions Current and Future Commercialization Programming

**FROM:** Bipartisan Policy Center
Prepared by Tanya Das, Senior Associate Director for Energy Innovation

**Summary**
The Bipartisan Policy Center is writing in response to the Department's request for information on the scope and structure of the Office of Technology Transitions' commercialization programs. BPC recommends the following:

1. (Category 1.4) OTT should expand eligibility for the Energy I-Corps program to inspire and prepare the next generation of diverse entrepreneurs
2. (Section 3) OTT should expand the Lab-Embedded Entrepreneurship Program (LEEP) to more national labs and expand the area of focus on technologies that span the full breadth of DOE's mission
3. (Section 3) OTT should oversee the creation of a DOE Foundation to supplement the existing commercialization programs at DOE

---

**1. OTT should expand eligibility for the Energy I-Corps program to inspire and prepare the next generation of diverse entrepreneurs.**

The Energy I-Corps is an important program for building experimentation and risk-taking into the culture at the national labs by helping to foster an entrepreneurial mindset in national lab scientists and researchers. However, the scale of solutions needed to address the climate crisis and to enhance our nation's competitiveness in science and technology requires that our country support an unprecedented level of innovation in the years to come. As the nation's leading supporter of energy commercialization programs, OTT should expand eligibility for the Energy I-Corps program to include participants from outside the national labs, such as researchers, students, and other potential entrepreneurs.

In particular, an expanded Energy I-Corps program should focus on supporting aspiring entrepreneurs who come from diverse and underrepresented backgrounds as identified in Notes A and B of the RFI. OTT can adopt several strategies to achieve this goal. The Office of Science's (SC's) Office on Workforce Development for Teachers and Scientists has adopted several strategies for reaching students from diverse backgrounds for their internship programs, which may be a useful program for OTT to consult with in development of a model for reaching and supporting diverse Energy I-Corps participants. Examples of such strategies include:

- Holding informational sessions on Energy I-Corps for students at HBCUs and other MSIs
- Partnering with relevant professional organizations to advertise and recruit participants for Energy I-Corps, such as the National Society of Black Engineers (NSBE), Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS), American Indian Science and Engineering Society (AISES), and Society of Women Engineers (SWE)
- Recruiting diverse industry mentors to serve Energy I-Corps participants, including through the professional organizations mentioned above
- Providing training to mentors to prepare them to serve mentees effectively

To ensure adequate funding for an expanded program to serve non-DOE lab scientists, an expansion could be carried out in part through coordination with existing entities at universities, local economic development agencies, and incubators and accelerators, to ensure national reach of the program. OTT could also secure additional funding for Energy I-Corps teams through partnership with the Office of Science. To successfully secure funding from SC, OTT should engage SC early in their annual budget development process to ensure funding for teams is available far prior to the program application solicitation process.

Lastly, in terms of the evaluation of long-term success for this program, OTT should adopt a broad definition of success that includes consideration of the impact on scientists who themselves decide not to pursue the commercialization of a given project at the end of the Energy I-Corps program but have still benefitted from the exposure to the entrepreneurial training provided by the program. Long-term success of the program should expand beyond the items mentioned under the Metrics section of the RFI to include, for example, considerations of whether former participants engage in entrepreneurial activities in the future, how former participants contribute to culture change at their institutions by fostering an entrepreneurial mindset, or by mentoring other scientists to pursue their entrepreneurial goals.

**2. OTT should expand the Lab-Embedded Entrepreneurship Program (LEEP) to more national labs and expand the area of focus on technologies that span the full breadth of DOE's mission.**
LEEP has shown great success in providing access to world-class laboratories and facilities to emerging entrepreneurs, helping the nation's most inventive minds take advantage of important public resources. In the short-term, OTT should partner with AMO to expand LEEP by establishing new programs at more national labs beyond the existing 4 programs. In the long-term, OTT should take over administration of

the program to consolidate DOE's entrepreneurship programs under one office. A recent report from BPC's American Energy Innovation Council noted that there is interest from other agencies in expanding the entrepreneurial fellowship model, for example through an existing partnership between DARPA and LBNL's LEEP node. Such funding partnerships provide a potential pathway for securing additional funding for LEEP outside of OTT's appropriated budget.[1]

Additionally, LEEP should be expanded to focus on projects that cover the full range of science and technology areas funded by DOE rather than the limited focus on energy and manufacturing projects due to the program being housed under the EERE Advanced Manufacturing Office. When in the House of Representatives, Senator Luján introduced H.R.5965, the Leveraging our National Labs to Develop Tomorrow's Technology Leaders Act, authorizes LEEP including the focus on all technologies that fall under DOE's broad mission.[2]

**3. OTT should oversee the creation of a DOE Foundation to supplement the existing commercialization programs at DOE.**

In recent years, several private companies have dedicated billions of dollars for climate and clean energy funds with the goal of accelerating progress on developing solutions to address climate change, including Microsoft,[3] Amazon,[4] and Unilever.[5] However, aggressive action on clean energy technology development will require the public and private sectors to work alongside each other to make investments in the most promising clean energy solutions.

[1] The American Energy Innovation Council, "Energy Innovation: Supporting the Full Innovation Lifecycle", Bipartisan Policy Center, February 2020. Available at: https://bipartisanpolicy.org/download/?file=/wpcontent/uploads/2020/02/AEIC_Annual-Report_2020_R01.pdf
[2] H.R.5965, the Leveraging our National Labs to Develop Tomorrow's Technology Leaders Act. Available at: https://www.congress.gov/bill/116th-congress/house-bill/5965/text
[3] https://www.microsoft.com/en-us/corporate-responsibility/sustainability/climate-innovation-fund
[4] https://sustainability.aboutamazon.com/climate-solutions
[5] https://www.unilever.com/news/press-and-media/press-releases/2020/unilever-sets-out-new-actions-to-fight-climate-change-and-protect-and-regenerate-nature-to-preserve-resources-for-future-generations/

To achieve this goal, several entities[6] [7] [8] have proposed the creation of a nonprofit energy foundation that would work closely with the Department of Energy that would mobilize public and private sector investments and financing to support clean energy entrepreneurship and help bring clean energy technologies to market. Such foundations exist already for the National Institutes of Health and the Department of Agriculture and have successfully leveraged a small amount of federal funds to attract significant private capital and operate at the forefront of their respective research fields.[9] For example, the Foundation for the National Institutes of Health receives $500,000 per year in appropriations, yet between 2014 and 2015, attracted more than $25 million in outside investment.[10]

Breakthrough Energy Catalyst recently announced a partnership with DOE to co-invest in clean energy demonstration and deployment projects, expected to catalyze nearly $15 billion for relevant energy infrastructure projects.[11] This partnership will act as a force-multiplier for the impact of the newly created Office of Clean Energy Demonstration and the Loan Programs Office. Given OTT's central role in commercialization at DOE, a nonprofit energy foundation could similarly serve as a catalyzing force for OTT's mission and goals by reducing barriers to public-private collaboration and creating new opportunities for commercialization partnerships with DOE and the national labs.

Legislation on this idea was first introduced by Senator Chris Coons (D-DE) in December 2017 and has been reintroduced each Congress since then.[12] Recent Congressional action indicates growing political

---

[6] The American Energy Innovation Council, "The Power of Innovation: Inventing the Future", Bipartisan Policy Center, June 2017. Available at: https://bipartisanpolicy.org/download/?file=/wpcontent/uploads/sites/2/2017/06/AEIC-The-Power-of-Innovation-Inventing-the-Future.pdf

[7] J. Wong and D. Hart, "Mind the Gap: A Design for a New Energy Technology Commercialization Foundation," Information Technology and Innovation Foundation, May 2020. Available at: https://itif.org/sites/default/files/2020-mind-gap-energy-technology.pdf

[8] P. Winokur et. al., "An Innovation Foundation for DOE: Roles and Opportunities," National Academy of Public Administration, January 2021. Available at: https://s3.us-west-2.amazonaws.com/napa-2021/NAPA__DOE-Report-__-FINAL.pdf

[9] The American Energy Innovation Council, "The Power of Innovation: Inventing the Future", Bipartisan Policy Center, June 2017. Available at: https://bipartisanpolicy.org/download/?file=/wpcontent/uploads/sites/2/2017/06/AEIC-The-Power-of-Innovation-Inventing-the-Future.pdf

[10] Statements of Financial Position Foundation for the National Institutes of Health, Inc. December 31, 2015, and 2014. Available at: https://fnih.org/sites/default/files/final/pdf/2015-audited-financial-statements.pdf

[11] https://breakthroughenergy.org/-/media/files/bev/catalystdoerelease.pdf

[12] S.1359, the Partnerships for Energy Security and Innovation Act of 2021. Available at: https://www.congress.gov/bill/117th-congress/senate-bill/1359

support for this idea, with the bill passing the House of Representatives in September 2020[13] and the Senate in May 2021, as part of the United States Innovation and Competition Act of 2021 (USICA).[14] Congress also provided funding to DOE to fund a study on the value of creating nonprofit foundation to promote technology transfer and commercialization of clean energy in the Fiscal Year 2020 Appropriations bill,[15] resulting in the publication of a report by the National Academy of Public Administration.[16] Early action from OTT in framing the structure and activities of a nonprofit energy foundation will help amplify and complement OTT's existing commercialization activities.

[13] Title VIII, Subtitle D of H.R. 4447, the Clean Economy Jobs and Innovation Act. Available at: https://www.congress.gov/bill/116th-congress/house-bill/4447

[14] Sec. 2528 of S.1260, the United States Innovation and Competition Act of 2021. Available at: https://www.congress.gov/bill/117th-congress/senate-bill/1260/

[15] House FY20 Energy & Water Appropriations bill: "The Committee directs the Department to provide to the Committee not later than 180 days after enactment of this Act a report on the value of creating a nonprofit foundation that will better promote the transfer of technology to the marketplace. The report should include a review and characterization of other federal agency's foundations with detail on how agency's foundations engage with the private sector to raise funds that support the research, development, demonstration, and commercial application of innovative technologies."
Available here:
https://appropriations.house.gov/sites/democrats.appropriations.house.gov/files/FY2020%20E%26W%20Report%20Draft.pdf
Senate FY20 Energy & Water Appropriations bill: "The Committee directs the Department to contract with the National Academy of Public Administration within two months of the date of enactment of this act in order to convene an expert panel regarding the value of creating a nonprofit foundation to assist the Department to advance its mission of addressing the nation's energy challenges. The report shall include an assessment of comparable foundations at other Federal agencies, with detail on their structure and governance and how they engage with the private sector to enhance ongoing and new efforts supporting the research, development, demonstration, and commercial application of innovative energy technologies. The Academy shall issue its report not later than 180 days after entering into an agreement with the Department."
Available here:
https://www.appropriations.senate.gov/imo/media/doc/FY2020%20Energy%20and%20Water%20Development%20Appropriations%20Act,%20Report%20116-1021.pdf

[16] P. Winokur et. al., "An Innovation Foundation for DOE: Roles and Opportunities," National Academy of Public Administration, January 2021. Available at: https://s3.us-west-2.amazonaws.com/napa-2021/NAPA__DOE-Report-__-FINAL.pdf