Office of Technology Transitions
Proposed Appropriation Language

For Department of Energy expenses necessary for carrying out the activities of technology transitions, $56,550,000, to remain available until expended: Provided, That of the amounts appropriated under this heading, $1,500,000 shall be for the establishment of the Foundation for Energy Security and Innovation authorized by section 10691 of Public Law 117–167: Provided further, That of the amounts appropriated under this heading, $29,500,000 shall be for payment to the Foundation for Energy Security and Innovation upon its establishment: Provided further, That of the amounts provided under this heading, $13,639,000 shall be available until September 30, 2025, for program direction.

Office of Technology Transitions
Overview

The mission of the Office of Technology Transitions (OTT) is to expand the commercial and public impact of the research investments of the DOE. OTT enhances the public return on investment from DOE's technology portfolio, including the National Laboratories, through a suite of outcome-oriented activities that enable commercialization of energy technology, enhance national security and competitiveness, mitigate climate change, and create jobs. Within DOE, OTT works to fill gaps and sharpen programmatic focus on commercialization across the research, development, demonstration, and deployment (RDD&D) continuum. OTT provides specialized tools, training, analysis, workforce development, and programs to improve the successful transition of technology from proof of concept to prototype to demonstration and, ultimately, market deployment. OTT also supports enabling policies for, tracks the outcomes of, and shares success stories from the Department's National Laboratory commercialization and partnering activities. Externally, OTT supports development of a robust ecosystem for energy entrepreneurs and technology start-ups and seeds public-private partnerships with a diverse set of actors. OTT's FY 2024 budget targets impact in the following areas:

- Stewarding development of commercialization pathways with private sector input and use of commercial-adoption risk frameworks to catalyze market-informed program design and industry engagement across the Department.
- Place-based approaches to commercializing innovation, which enables catalytic ecosystems that align federal funding with incubators, private companies, National Laboratories, universities, state and local officials, investors, and non-profits.
- Entrepreneurial training and workforce development programs for Lab researchers and students, which enable the current and future workforce to convert innovation into real-world outcomes.
- Access to and searchability of DOE's intellectual property, laboratory experts, and facilities, which enables direct public-private engagement leading to partnerships.
- Policy coordination to expand use of funding mechanisms in DOE program design and that reduce barriers in conducting business with the DOE National Laboratories and other federal, quasi-governmental, and non-federal entities.
- Seeding innovative approaches, partnerships models, and program designs, including use of prize authority and partnership intermediary agreements (PIAs), to maximize impact from the Department's RDD&D portfolio.
- Convening of and outreach to private sector and other external decision-makers to identify opportunities for partnerships to commercialize DOE technologies.
- Establishment of the non-governmental Foundation for Energy Security and Innovation (FESI), which has a statutory aim to support the mission of DOE and accelerate the commercialization of new and existing energy technologies by raising and investing funds through engagements with the private sector and philanthropic communities.

Highlights of the FY 2024 Budget Request

The Department requests $56,550,000 for OTT in FY 2024, of which $31 million is a one-time investment for the Congressionally authorized establishment of the new Foundation for Energy Security and Innovation, a 501c3 non-governmental organization tasked with raising philanthropic funds to make targeted investments that enhance the DOE mission. This level of funding will allow OTT to implement statutory authorities under the Energy Act of 2020 and CHIPS and Science Act of 2022, make targeted investments to enhance Departmental commercialization outcomes, and fully fund an ongoing regional clusters program focused on incubators and accelerators.

Technology Transitions
Funding ($K)

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted ($)	FY 2024 Request vs FY 2023 Enacted (%)
Washington Headquarters					
Salaries and Benefits	4,408	5,767	7,272	+1,505	+26%
Travel	300	500	500	0	0%
Support Services	2,817	5,777	4,576	-1,201	-21%
Other Related Expenses	850	1,139	1,291	+152	+13%
Total, Program Direction	**8,375**	**13,183**	**13,639**	**+456**	**+3%**
Total FTEs	**28**	**38**	**40**	**+2**	**+5%**
Other Related Expenses					
Working Capital Fund (WCF)	570	570	690	+120	+21%
Other	280	569	601	+32	+6%
Total, Other Related Expenses	**850**	**1,139**	**1,291**	**+152**	**+13%**
Technology Transitions Programs					
Commercialization Activities	6,095	3,915	6,911	+2,996	+77%
Energy Program for Innovation Clusters (EPIC)	5,000	5,000	5,000	0	0%
Total, Technology Transitions Programs	**11,095**	**8,915**	**11,911**	**+2,996**	**+34%**
Total, Office of Technology Transitions	**19,470**	**22,098**	**25,550**	**+3,452**	**+16%**
Foundation for Energy Security and Innovation					
Foundation for Energy Security and Innovation	0	0	31,000	+31,000	N/A
Total, Foundation for Energy Security and Innovation	**0**	**0**	**31,000**	**+31,000**	**N/A**
Total, Office of Technology Transitions + FESI	**19,470**	**22,098**	**56,550**	**+34,452**	**+156%**

Authorizations:
Public Law 109–58, "Energy Policy Act of 2005," Title V
15 U.S. Code § 3708(b and c) - Administrative arrangements – Corporation & Administrative authorization
15 U.S. Code § 3710(a) - Utilization of Federal Technology
42 U.S. Code § 2121(a) - Authority of Commission
42 U.S. Code § 16391(e) - Establishes the Energy Technology Commercialization Fund
Public Law 116-68 Consolidated Appropriations Act 2021 – reference "Energy Act 2020" Title IX

Public Law No: 117-167 – reference CHIPS and Science Act, Subtitles I and J

Office of Technology Transitions
Program Direction

Program Direction fully funds federal salaries and benefits, official travel, training, DOE Working Capital Fund, Energy Information Technology (IT) Services, associated support services contracts, and all program implementation expenses to execute the OTT mission, comply with authorizing statutes, and coordinate commercialization activities across the Department, including the National Laboratories. This funding supports a communications team, market and commercialization pathways analysis function, policy analysis and coordination, annual data collection and reporting, targeted stakeholder outreach and partnering efforts, Departmental support for use of prize authority and partnership intermediary agreements, and oversight and management of all programmatic activities, including the Technology Commercialization Fund (TCF), Energy Program for Innovation Clusters (EPIC), Lab Partnering Service (LPS), Energy I-Corps (EIC), the Energy Technology University Prize (ETUP), the OTT Technology Commercialization Internship Program, and other commercialization programs and activities.

Communicating Successes - Stakeholder engagement is assisted by a clear understanding of the capabilities, possibilities, and impact of the National Laboratories and the broader DOE RDD&D investment portfolio. OTT regularly amplifies success stories from across the DOE complex and develops communications content to showcase the DOE innovation story. A subset of success stories is reported to Congress annually to meet statutory requirements. OTT's communications bring to life the impacts that the DOE and the National Laboratories have had on companies, industries, the Nation, and the world, underscoring the potential for further external partnerships. FY 2024 funding supports continued communications support at a sustained level.

Data Collection and Reporting - OTT gathers, verifies, and validates unclassified technology transfer partnership and metrics data for all 17 DOE National Laboratories and four production facilities on an annual basis. This effort supports annual statutory reporting on National Laboratory utilization and provides unique visibility into the commercial impact of DOE's investments in the National Laboratories and Facilities and the breadth of beneficiaries and partners across the Nation. FY 2024 funding supports data collection and reporting at a sustained level.

Market & Commercialization Pathways Analysis - OTT will continue its market and commercialization pathways analytical efforts to illuminate technology market trends and drivers and enable transitions of technology across the RDD&D continuum. OTT analysis helps illuminate market structures and commercial-adoption risk and helps identify commercialization opportunities for energy technologies. OTT facilitates the development and use of market analysis content, methodologies, and data services across DOE offices in both the Under Secretary for Science and Innovation (S4) and Under Secretary for Infrastructure (S3), as well as convening the National Laboratory community to promote market awareness and information sharing around resources and methodologies to enhance commercialization opportunities for DOE technologies. OTT focuses its analytical efforts on crosscutting priorities and strategic topics and identifies and pursues technology commercialization opportunities based on these insights. OTT's market and commercialization pathways analysis complements the Department's analytical efforts to maximize the impact of DOE programs and funding.

In FY 2024, OTT will continue to deliver customer-driven market analysis in support of several high-priority, crosscutting areas to accelerate the commercialization of DOE-developed technologies.

Partnership Development - OTT pursues purposeful stakeholder engagement to increase awareness of the opportunities for partnership with the DOE and the National Laboratories. By working with a diverse group of capital providers and market actors with various investment time horizons, risk appetites, organizational structures, and constituencies, OTT is well-positioned to identify effective ways to help maximize the impact of the Department's RDD&D investments. FY 2024 funding will maintain funding for targeted partnership development efforts.

Policy Coordination and Prize Authority - OTT will continue its leadership role in coordinating commercialization policies and mechanisms across DOE and across the Federal Government. Within DOE, OTT oversees the implementation of national technology transfer and commercialization authorities and the policy priorities of the Administration and convenes the Technology Transfer Policy Board comprising DOE program office representatives and the Technology Transfer Working Group comprising National Laboratory tech transfer and commercialization professionals and DOE site office representatives. OTT also serves on various intra-agency working teams tackling challenges and opportunities around

National Lab licensing, manufacturing policy, and other critical issues with national security and economic competitiveness implications. Externally, OTT coordinates with other federal agencies through the Interagency Working Group on Technology Transfer and the Federal Laboratory Consortium for Technology Transfer. Additionally, OTT serves as co-chair of and participates in the Lab-to-Market subcommittee of the White House Office of Science and Technology Policy's National Science and Technology Council. These activities provide an opportunity for OTT to gain insights on best practices and program designs that can be shared across the Federal Government and considered for implementation at DOE.

In FY 2024 OTT continues and modestly expands efforts to implement Energy Act 2020 statutory authority by establishing a prize center of excellence that will enable wider and more effective Departmental use of prizes by S3 and S4 programs. OTT will also work to satisfy Congressional reporting requirements. Recently, OTT has been leading agency efforts to explore potential use of an expanded set of partnering mechanisms and authorities, including Other Transaction Authority (OTA) and the use of PIAs.

FY 2024 funding will support continued engagement by OTT staff with stakeholders on streamlining central policies and procedures, thus simplifying, and enabling private sector access to the capabilities and resources of the DOE National Laboratory enterprise. OTT will continue to assess, document, and disseminate best practices, including those related to use of prize authorities, and to update the DOE Technology Transfer Execution Plan in accordance with statutory requirements.

Program Management – Funding supports HQ oversight and management of all programmatic activities, including the Technology Commercialization Fund (TCF), EnergyTech University Prize (ETUP), Energy Program for Innovation Clusters (EPIC), Lab Partnering Service (LPS), Energy I-Corps (EIC), Technology Commercialization Internship Program (TCIP), and other commercialization activities that support OTT's mission. FY 2024 funding will support program management needs in line with the expanding OTT portfolio of high-impact program activity.

Office of Technology Transitions
Program Direction
Activities and Explanation of Changes

FY 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2023 Enacted vs FY 2024 Request
Program Direction $13,183,000	**$13,639,000**	**+$456,000**
Salaries and Benefits $5,767,000	**$7,272,000**	**+$1,505,000**
Funding supports scale-up to about 38 FTEs responsible for managing OTT's commercialization portfolio and providing essential operations support. This includes management of all OTT programs, office operational support, and staff focus on creating public-private partnership opportunities and conducting market and commercialization analyses.	Funding will support an increase (+2) to 40 FTEs to establish a DOE Prize/PIA Center of Excellence. New staff will support expanded program management and implementation requirements and critical operations support.	Supports +2 FTE increase from FY23 Enacted approved staffing plan and 5.2% cost-of-living increase in civilian salaries and associated FERS increase in FY 2024.
Travel $500,000	**$500,000**	**$0**
Funding supports travel requirements associated with DOE's commercialization portfolio, such as OTT engagement with the National Laboratories at the bi-annual Technology Transfer Working Group meetings, information gathering from Principal Investigators, outreach at industry events and conferences, and OTT participation in National Laboratory events. In the absence of in-person events for much of FY 2021, OTT has supported virtual event expenses requiring technology platforms and services.	Continuation of activities in FY 2024.	No change in FY 2024.
Support Services $5,777,000	**$4,576,000**	**-$1,201,000**
Funding supports contractor support associated with management of OTT's programs portfolio, all communications support, access to tools and information for more informed industry engagement, market and commercialization pathways analysis, developing guidance and policies, implementing the Administration's technology transfer and commercialization priorities and best practices, and conducting other required data collection, verification, validation and reporting.	Continuation of activities in FY 2024 with modest increase to reflect right-sizing of contractor staff to align with updated assessment of contractor support needs.	Reflects the federalization of critical roles supporting management of statutory programs and recurring activities.
Other Related Expenses $1,139,000	**$1,291,000**	**+$152,000**

FY 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2023 Enacted vs FY 2024 Request
Funding will support the business costs associated with the DOE's Working Capital Fund (office space, phones, utilities, etc.); Energy IT Services (IT equipment and support); specialized software licensing; security investigations; and staff development and training to maintain and enhance work related skills and capabilities.	Continuation of activities in FY 2024.	Increase driven by increasing staff size (+2 FTEs).

Office of Technology Transitions
Technology Transitions Programs

Description:

In addition to the work of federal and HQ contractor employees funded through Program Direction, OTT requests $11.911 million in Technology Transitions Programs funding to support commercialization activities and continue the successful regional incubator and accelerator program.

Commercialization Activities:

Energy I-Corps - Energy I-Corps (EIC) is an eight-week training program pairing National Laboratory scientists and engineers with industry mentors to define the value proposition for the National Laboratory-based technology that they are developing. It directly addresses the OTT authorization language to "encourage students, energy researchers, and national laboratory employees to develop entrepreneurial skillsets and engage in entrepreneurial opportunities." Central to the program is a requirement to conduct extensive customer discovery interviews to deepen understanding of the market and other opportunities for a particular DOE-sponsored technology. This program fosters an entrepreneurial workforce and creates a cohort of DOE National Laboratory market-oriented researchers that have been immersed in an intense program of commercialization training centered on customer outreach and partnership with the private sector. Since the program's inception in 2015, 205 teams from 12 National Laboratories have conducted 11,513,60000 interviews and worked with many industry sectors to discover the commercial impact of technologies they have developed at the National Laboratories. Because of the teams' participation in the program, these technologies have reached a point of commercial viability that has attracted over $150 million in follow-on funding from both federal and private sources and more than 20 new companies have been launched. Additionally, over 75 licenses of DOE-funded technologies have been executed as a result of the Energy I-Corps program.

OTT funding primarily supports curriculum development and delivery of the training of the Energy I-Corps program, while participating DOE programs opt in by funding the cost of the participating researchers' time to complete the program. OTT will occasionally directly fund promising project teams that may not align well with any one office's priorities, such as crosscutting topic teams. OTT also supports efforts to help labs develop a pipeline for teams to participate in EIC and follow-on opportunities for some of the most promising EIC program graduates.

Lab Partnering Service (LPS) - OTT's LPS meets our Energy Act 2020 mandate to: "Establish a Lab Partnering Service Pilot Program to provide services that encourage and support partnerships between the National Laboratories and public and private sector entities, and to improve communication of research, development, demonstration, and commercial application projects and opportunities at the National Laboratories to potential partners through the development of a website and the provision of services, in collaboration with relevant external entities, and to identify and develop metrics regarding the effectiveness of such partnerships."

The Lab Partnering Service (LPS) provides information to small businesses; corporate entities; State, local and Tribal officials; investors and other external stakeholders interested in advancing energy innovation and connecting with leading DOE National Laboratory assets. Specifically, LPS facilitates access to National Laboratory expertise, technologies, facilities, and success stories. LPS streamlines access to unique capabilities that were previously difficult for investors, innovators, and others to find because the capabilities are distributed across the National Laboratory enterprise and presented primarily for the scientific community. In FY 2024, OTT will continue its focus on tracking impact and driving traffic to LPS, as well as continuing to maintain LPS content, especially in fields of high commercial relevance.

Technology Commercialization Fund (TCF) - In FY 2024, OTT will continue to implement the TCF, authorized in section 1001 of the Energy Policy Act of 2005. OTT has taken a more strategic view on implementation of the TCF by shaping an innovative program design structure that creates efficiencies and increases impact by forming crosscutting collaborations among RDD&D organizations and DOE National Laboratories. DOE's new, collaboratively developed approach offers program offices options for deciding how to obligate their TCF funding. Moving forward, OTT and all DOE program offices expect to learn from each subsequent cycle of TCF implementation and further refine and target its programming for

maximum commercialization impact. The goal for all TCF lab calls and resulting projects or programs, as set forth in TCF's authorizing statute, will continue to be "promoting promising energy technologies for commercial purposes."

EnergyTech University Prize – The EnergyTech University Prize (EnergyTechUP) is a university student competition to successfully identify a promising energy technology, assess its market potential, and create a business plan for commercialization. EnergyTechUP aims to cultivate the next generation of energy innovators while accelerating the transfer of energy technologies to the market. The prize seeks to attract the talented students of today and help them develop into the engineers, policymakers, entrepreneurs, market analysts, and project developers of tomorrow. Since the program's inception, 1,165 students have participated in the competition. Multidisciplinary student teams develop and present a business plan that leverages national laboratory-developed or other high-potential energy technologies. The prize is a high-leverage program sponsored by OTT, and multiple DOE RDD&D offices provide additional bonus funding. The FY 2024 budget will support a modest increase in the number of student prize winners.

Technology Commercialization Internship Program (TCIP) – OTT will continue its TCI Program for 15+ undergraduate students. This paid internship program will benefit a diverse cohort of participants by enhancing their education and training in technology commercialization-related fields and increasing their future marketability in these disciplines. In addition, participants will gain deep insight into the federal government's role in the creation and implementation of policies that will affect energy technology development and commercialization. Participants will also contribute to OTT mission-related research activities under the guidance of National Laboratories technology transfer and commercialization specialists and OTT staff. The Budget will sustain this program in FY 2024.

Other Commercialization Activities – OTT continuously assesses the spectrum of commercialization activities across the Department and seeks to seed gap-filling programs and activities with small, targeted investments. Areas of opportunity in FY 2024 may include catalyzing use of innovative program designs and partnering mechanisms, such as PIAs.

Regional Incubator and Accelerator Program

Energy Program for Innovation Clusters (EPIC) – EPIC is a competitive funding program for incubators supporting energy innovation clusters. OTT requests that $5M continue to be directed to this important area. The funds have been used to implement a multi-pronged strategy involving grants and prizes supporting a portfolio of impactful and geographically diverse incubators focusing on developing strong innovation clusters, connections, and support for energy-related technology and entrepreneurship.

Technology Transitions
Programs

Activities and Explanation of Changes

FY 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2023 Request vs FY 2024 Request
Technology Transitions Programs $8,915,000	**$11,911,000**	**+$2,996,000**
Commercialization Activities $3,915,000	**$6,911,000**	**+$2,996,000**
Funding supports execution of the Technology Commercialization Fund, Energy I-Corps Program, the Lab Partnering Service, EnergyTech University Prize, and targeted seed investments for new high-impact, gap-filling commercialization programs and partnering models.	Supports modest scale-up and continued improvement of existing programs.	This increase largely reflects the convergence of OTT's budget request level with anticipated funding requirements for the current program portfolio. Since FY 2021, OTT has been drawing down its historical carryover balances in a managed way. The increase will also support small, targeted scaling of programmatic reach (e.g. more student winners through ETUP) that are achievable with no associated growth in program management costs.
Energy Program for Innovation Clusters $5,000,000	**$5,000,000**	**$0**
Funding supports the Energy Program for Innovation Clusters initiative, including prizes, grants, and other competitive offerings.	Continuation of activities in FY 2024.	No change.

Foundation for Energy Security and Innovation

Description:

The Foundation for Energy Security and Innovation (FESI of Foundation) is a new, independent nonprofit organization that will enhance energy security can clean energy innovation by channeling private resources and philanthropic contributions toward the development and commercialization of innovative technologies. The Budget provides $31 million to establish the FESI and support FESI's core staff and initial operating expenses, as intended by the Partnerships for Energy Security and Innovation Act, which was signed into law as part of the CHIPS and Science Act (P.L. 117-167). The bulk of its long-term funding will be raised from philanthropic and private sources – the foundation will not depend on sustained DOE funds for its operation.

Commercialization of clean technologies is nonlinear and often fails because of inadequate support infrastructure including capital and tooling, as well as market, manufacturing, and industry expertise. Commercialization support infrastructure on national, regional, and local scales are essential to ensuring critical ecosystem players are onboard. Given the importance and complexity of technology commercialization, it is essential the DOE explore and leverage all authorities granted to the Agency, including establishment of the independent Foundation for Energy Security and Innovation as authorized by the CHIPS and Science Act.

The FESI is modeled after similar foundations already established at the National Institutes of Health, the Centers for Disease Control and Prevention, and the U.S. Department of Agriculture. These foundations have demonstrated a strong capacity to attract private-sector dollars that support rapid research and innovation in cutting-edge areas. Foundations that support other agencies are doing incredible things to advance their missions. In-Q-Tel, the not-for-profit entity supporting the CIA, is investing in companies commercializing technologies critical to our national security–many of these technologies have reached everyday consumers such as touchscreens for smartphones and digital stitching technology used by Google Earth. The CDC Foundation leveraged federal funding to raise nearly $600 million in donor funds and to hire over 3,000 surge healthcare staff to support COVID-19 pandemic relief efforts.[1] The National Fish and Wildlife Foundation is fostering public-private partnerships to work regionally to restore 16,000 acres of coastal habitats to help combat erosion caused by climate change.[2] These agency-related foundations are independent of the federal government and are different from other non-profit foundations due to their congressionally-authorized relationship with a federal agency. As such, the FESI can, "solicit and accept gifts, grants, and other donations, establish accounts, invest and expend funds" to support activities and programs of the FESI and – unlike any other non-profit foundation – can transfer funds, land, and equipment to the DOE. Agency-related foundations have demonstrated across the board that they can leverage their non-profit status to raise substantial private sector and philanthropic dollars in the pursuit of government agency objectives.

Activities:

FESI will support the mission of DOE, and more specifically, will increase private and philanthropic sector investments to accelerate the commercialization of energy technologies. The CHIPS and Science Act of 2022 provides FESI with broad authority to carry out its mission. To accomplish this mission, Congress authorized the FESI to engage with the private sector to raise and invest funds that support efforts to "create, characterize, develop, test, validate, and deploy or commercialize innovative technologies that address crosscutting national energy challenges".[3] To help enable and jump-start these activities, the CHIPS legislation includes authorizations for administrative and operational costs as well as a seed fund to help get the FESI up and running. These investments will enable the FESI to attract the talent and donors it needs to fill sizable gaps that remain within the energy innovation ecosystem.

In 2023, DOE established an internal FESI Working Group, as well as released a Request for Information (RFI) - Foundation for Energy Security and Innovation,[4] which represents the first of several opportunities to engage with DOE as it works to establish the FESI.

[1] https://www.cdcfoundation.org/making-an-impact-COVID-19
[2] https://www.nfwf.org/media-center/press-releases/nfwf-noaa-announce-record-136-million-coastal-resilience
[3] https://www.congress.gov/bill/117th-congress/house-bill/4346
[4] https://www.energy.gov/sites/default/files/2023-02/FESI%20RFI%20-%20FINAL_Signed_0.pdf

Foundation for Energy Security and Innovation

Activities and Explanation of Changes

FY 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2023 Request vs FY 2024 Request
Foundation for Energy Security and Innovation $0	**$31,000,000**	**+$31,000,000**
No funds are appropriated for FESI in FY 2023, but staff from across the agency are engaged in a working group to scope out how the DOE would establish the FESI, pending appropriations.	$1.5 million will support DOE administrative expenses to establish the FESI and $29.5 million of initial capital will be provided to the FESI once established.	Establishes FESI, including funding for administrative and operational costs.