



Fiscal Year 2017 Solicitation

Key Dates	
Solicitation Issue Date	November 29, 2016
Informational Webinar	December 1, 2016 at 3:30 p.m. (ET)
Submission Deadline for Letters of Intent (See Section IV)	December 22, 2016 at 8:00 p.m. (ET)
Submission Deadline for Proposals (See Section VI)	February 10, 2017 8:00 p.m. (ET)
Expected Date for Selection Notifications	Spring 2017

Summary Information	
Means of Submission	Applicants must register with and submit application materials through an online application portal through the Idaho National Laboratory at https://secureportal.inl.gov/caesproposal/Home/Login.aspx OTT will not review or consider proposals submitted through other means.
Total Amount to be Provided	DOE expects to make approximately \$23.4 million of Federal funding available for award under this Solicitation, subject to the availability of appropriated funds. DOE may issue one, multiple, or no awards.
Period of Performance	Topic 1: 6-12 months Topic 2: 12-24 months Awarded projects in both topics are required to report metrics and participate in OTT's TCF Program evaluation for up to 5 years from award date.
Eligible Entities	U.S. Department of Energy National Laboratories, Plants, and Sites
TCF Matching Funds/Non-Federal Cost Requirement	Projects are required to provide matching non-Federal funds at a level of 50% of the total project cost.
Submission of Multiple Proposals	National Laboratories, Plants, and Sites may submit multiple proposals. There is no limit on the number of proposals a National Laboratory, Plant, or Site may submit.
Proposal Forms	The proposal template is contained in this document. There is a five-page limit for Topic 1 Technology Maturation proposals. The page limit for Topic 2 Cooperative Development proposals is 10 pages.
Questions	Questions about the TCF program rules and proposal process may be directed to TCF@hq.doe.gov . Questions about using the online application portal should be directed to TCFsubmissions@inl.gov Note: All questions and answers will be distributed via email to all applicants. Please do not provide proprietary or business sensitive information when posing questions to DOE or INL. <u>To allow adequate time for a response, questions about Letters of Intent must be submitted by 8:00 p.m. (ET) on December 16, 2016. Questions about Proposals must be submitted by 8:00 p.m. (ET) on February 6, 2017. Questions submitted after these deadlines may not be answered.</u>

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Section I: Background and Description of the Solicitation

A. SUMMARY

In support of the U.S. Department of Energy's (DOE's) efforts to increase the engagement and commercial impact of DOE National Laboratories', Plants', and Sites' (hereinafter referred to as DOE facilities) engagement with industry and their commercial impact—as well as to fulfill statutory direction in the Energy Policy Act of 2005 (EPAct 2005)—DOE's Office of Technology Transitions (OTT) is seeking proposals for its statutorily established Technology Commercialization Fund (TCF). The TCF is intended to facilitate the commercialization of energy-related technologies with promising commercial potential that are developed at DOE facilities. The TCF is part of a broader set of initiatives to foster stronger partnerships among DOE facilities, private sector companies, and other entities involved in bringing energy-related technologies to the marketplace. EPAct 2005 encourages and supports the development of energy systems across the entire range of generation sources. DOE strongly encourages applicants to look across its portfolio of applied energy programs for candidate technologies. A complete listing of these areas is found in Appendix A.

B. GOALS

The TCF is part of a broad array of activities that DOE and its facilities undertake to ensure Federal R&D investments in technology with commercial potential find their way to a viable market. The TCF Federal funds are matched with non-Federal contributions to:

- 1) Perform technology maturation with the intent of attracting a private partner that is willing to support the technology's commercialization
- 2) Support cooperative development of technology with a private partner for a specific commercial application

C. BACKGROUND

The U.S. Department of Energy's enterprise of facilities has a more than 70-year history of delivering world-class science and technology solutions to pressing national issues. DOE facilities are proven partners in collaborative research and development projects that provide the foundational science and technology for the private sector's development of new products and processes in myriad industries. DOE's multi-billion dollar annual investment in research at the DOE facilities results in the invention and development of novel technologies and other forms of intellectual property. The DOE facilities have developed partnerships with private parties to pursue commercial applications of these technologies. Today, there have been thousands of licenses between DOE facilities and private partners. Yet, an even larger reservoir of intellectual property has not transitioned to the private sector, however, because the technology may not be mature enough to attract a partner—or its market potential may not be fully understood.

DOE's facilities have consistently identified as a problem the lack of sufficient resources to develop technologies to a stage that attracts private sector interest. In many cases, public funding—from DOE or other sources—supports R&D activities up to an early Technology Readiness Level (TRL), but is cut off before the technology matures to a point that a business will enter into a cooperative R&D agreement, or license the technology. A 2013 report commissioned by the White House Office of Science and Technology Policy concluded that “[m]any promising early-stage technologies developed at Department of Energy national laboratories require ‘maturation’ in the form of additional development, testing, or prototyping before companies are willing to invest in them for commercial purposes.”¹

¹ IDA Science and Technology Policy Institute. “Department of Energy Technology Maturation Programs.” May 2013. <https://www.ida.org/~media/Corporate/Files/Publications/STPIPubs/ida-p-5013.ashx>

In 2005, Congress passed the Energy Policy Act (EPAct 2005). Section 1001 of EPAct authorized the establishment of the Technology Commercialization Fund:

e) TECHNOLOGY COMMERCIALIZATION FUND – The Secretary shall establish an Energy Technology Commercialization Fund, using 0.9% of the amount made available to the Department for applied energy research, development, demonstration, and commercial application for each fiscal year based on future planned activities and the amount of the appropriations for the fiscal year, to be used to provide matching funds with private partners to promote promising energy technologies for commercial purposes.

The TCF provides an opportunity to support collaboration between the DOE facilities and private industry. Specifically, the TCF is intended to incentivize the DOE facilities to pursue active industry engagement and customer scouting for select, promising energy technologies. Researchers at DOE facilities, as well as their technology transfer officers, often lack the resources or DOE Program Office guidance to focus on actively engaging industry partners to commercialize their technologies.^{2,3} Through the TCF, DOE's applied energy offices and its facilities can pursue a strategic, forward-looking, competitive approach to commercializing their technologies. Potential benefits of this approach include:

- 1) Creating a stronger incentive for DOE facilities to identify their most promising technologies and industry partners for commercialization
- 2) Empowering a broader set of potential industry partners to engage with the DOE facilities
- 3) Enabling DOE facilities to identify a commercialization pathway for high potential technologies
- 4) Promoting crosscutting technologies across DOE's Program Offices and technology areas

The TCF is intended to incentivize the DOE facilities to pursue active industry engagement and customer scouting for select, promising energy technologies. This process will better enable the DOE facilities to prepare these technologies for commercial adoption, identify the highest-quality prospective partners, and assist those industry partners in evaluating the technologies for their business models.

D. TCF STRUCTURE

Proposals must pursue one of the following Topic Areas:

Topic 1: Technology Maturation Projects focus on technologies developed at DOE facilities that have commercial promise, have reached a TRL of at least 3, and have the potential to attract a private partner. The target TCF funding for each Topic 1 award is \$100K-\$150K. The target period of performance for a Topic 1 award is 6-12 months.

Topic 2: Cooperative Development Projects focus on technologies for which DOE facilities have already identified a commercial partner willing to execute a technology partnership agreement (e.g., CRADA or other appropriate agreement mechanism). This Topic supports cooperative development with a private partner of a commercial application for technology developed at DOE facilities. Applicants will have undertaken some form of evaluation to determine if the technology is viable for commercialization—such as IP mapping, participation in the Lab-Corps program, or other activities. The target TCF funding for each Topic 2 award is \$250K-\$750K. The target period of performance for a Topic 2 award is 12-24 months.

² OTT 2015 RFI input from the National Laboratories put significant emphasis on the importance of more strategic industry engagement in order to attract industry and identify partners to commercialize technology.

³ A key finding from the temporary EERE Technology Commercialization Fund from FY2007-2008 found that National Laboratories would have benefited from additional time and resources to search for the most promising industry partners.

All proposals will be subject to a merit review process to evaluate the technical and commercial viability of the proposed project. OTT will manage the merit review process in collaboration with DOE's Program Offices.

OTT will implement a metric and evaluation plan to assess progress and achievements of TCF-funded projects. Awardees will be required to provide metrics for a period of up to five years from the award date.

E. SCOPE OF PROJECTS

The scope of a project should allow it to meet the TCF's goals for the type of project it is—technology maturation or cooperative development. The activities described below correlate to the evaluation criteria in Section IV. All projects, whether proposed as Topic 1 or Topic 2, need to address the four areas described below. Depending on the Topic area, the breadth and level of detail will vary.

1. Commercial Impact

Both Topic 1 and Topic 2 proposals need to address the proposed technology's potential market impacts if it is commercialized. Topic 1 projects are intended to focus on technology maturation, but need to provide evidence that the technology has potential market impact. Topic 2 projects are intended to focus primarily on the commercialization of the technology in concert with a private partner. Therefore, a Topic 2 proposal should contain more expansive information about the commercial impact of the technology. In all cases, the proposal should address the following items to the degree of specificity appropriate to the chosen topic area. There must be a clear explanation of the current or anticipated market for the technology. This should include a description of the significant market need that the project addresses. The applicant should also specify whether the proposed technology is sufficient to achieve market penetration independent of complementary technologies, processes, or other requirements. If other factors such as policy or regulations are required for the technology to achieve market penetration, the applicant should identify them and discuss the circumstances.

2. Technical Maturation

Proposals, for both Topic 1 and Topic 2, need to address what the project intends to accomplish in terms of advancing the maturity of the technology. Topic 1 projects are intended to focus on technology maturation as the primary objective. Therefore, the proposal should be principally focused in this area. Topic 2 projects may require that the technology be further matured or demonstrated at a larger scale. Topic 2 proposals should describe which technology maturation activities need to be undertaken to achieve the commercialization goals of the project. In all cases, the proposal should address the following items to the degree of specificity appropriate by the chosen topic area. There must be a clear explanation of the current state of the technology, as well as the anticipated state of the technology at the end of the project. To the degree they can be anticipated, the applicant should explain the technical challenges and unanswered technical questions that must be addressed to reach the desired maturity of the technology. There should be an explanation of any complementary technology(ies) necessary for the proposed technology to function, and have relevance in the market.

3. Project Plan

Both Topic 1 and Topic 2 proposals need to include a project plan, which should center around the objectives of the project. Depending on the topic area and the specific project objectives, the plan should focus on tasks and activities needed to accomplish those objectives. There must be a clear explanation of the goals and outcomes of the proposed project, and a viable approach to address the technical and commercialization challenges of bringing the technology to the market. Tasks should be

clearly linked to performance metrics and deliverables. There must also be a delineation of technical and market risks and uncertainties, and a plan to manage or retire them.

4. Project Team and Resources

There must be a clear articulation that the project team and resources are qualified and capable of successfully completing the project. This includes both the laboratory and partner teams. The proposal must clearly define team member roles and responsibilities. There should be evidence that the necessary personnel, facilities, and equipment are available and committed to the project.

Section II: Eligibility for Award

Applicants for award are required to meet the eligibility requirements described in this section.

A. APPLICANTS

Eligible applicants are any of the U.S. Department of Energy National Laboratories, Plants and Sites.⁴ No other entities, public or private, are eligible for award. Applicants are eligible for multiple awards under this solicitation. Multiple DOE facilities may partner together on a single application.

B. PROJECTS

Eligible applicants may pursue propose projects under either two topics areas: a Topic 1 -Technology Maturation or a Topic 2 - Cooperative Development project. Proposals that received TCF funding under an earlier award are eligible to apply for additional TCF funding, provided that the project is complete and was successful in accomplishing the project goals, complied with all reporting requirements, and that the new funding request meets requirements and advances the technology toward commercialization.

Topic 1 - Technology Maturation - \$100,000 - \$150,000 per award

Eligible projects for Topic 1 must involve currently existing laboratory technology or intellectual property that has reached a TRL of 3, and demonstrates evidence of commercial potential. TRL 3 is evidenced by a technology having demonstrated analytical and experimental proof of concept in a laboratory environment. For example, have experiments or modeling and simulation validated performance prediction of technology capability? Have design techniques been identified or developed? Have scaling studies been initiated? Projects funded under this topic have a performance period of 6-12 months. Topic 1 projects may involve a partner but are not required to do so.

Topic 2 - Cooperative Development - \$250,000 - \$750,000 per award

Eligible projects for Topic 2 must involve currently existing laboratory technology or intellectual property, and the laboratory must have a non-Federal partner with a commercial application defined for the technology. The partner(s) must be identified in the application for funding. A formal partnership agreement does not have to be in place to be eligible for award, however. If funds are allocated before a formal technology partnership agreement (e.g., CRADA) is in place, work may not begin until it is executed. If no agreement between the laboratory and partner is executed within 6 months of the award, the Department may cancel the award. A project or work scope being executed under an existing CRADA or other partnership agreement is not eligible for an award under the TCF. Projects funded under this topic have a performance period of 12-24 months.

All projects proposed for funding must be tied to one or more of the program areas identified in Appendix A of this solicitation. It is preferred, but not required, that proposed technologies also have a clear alignment with a RDD&D opportunity(ies) laid out in the [DOE Quadrennial Technology Review](#) DOE facilities may submit proposals with cross-programmatic or multi-programmatic application or benefit (e.g., a wind farm load forecasting model could be applicable to the wind program within the Office of Energy Efficiency and Renewable Energy and to the Office of Electricity Delivery and Energy Reliability 's clean energy transmission program).

C. PARTNERS

Partners can be any non-Federal entity, including private companies' state or local governments' or entities created by a state or local government' universities' or non-profit organizations. Partners must agree to engage in activities that focus on commercializing or deploying technologies in the marketplace.

⁴ NETL is ineligible for an award for a Topic 1 project if it finds a private.

D. MATCHING FUNDS

All projects require matching funds of at least 50% of the total project cost, which must come from non-Federally-appropriated funds. If the DOE facility is providing the matching funds, it must be a cash contribution. If the matching funds are provided by a private partner, these funds can be cash or in-kind contributions; however, all projects require a cash contribution of at least \$10,000. Applicants should ensure that in-kind contributions meet all of DOE's requirements pertaining to in-kind contributions. DOE facilities are ultimately responsible for verifying that all matching contributions are made and properly accounted for. For more information and examples, please see Appendix B.

Section III: Award Information & Administration

A. TYPE OF AWARD INSTRUMENT

TCF awards will be documented and funded through the existing work authorization and funds management processes of the Program Office providing the funding. DOE facilities will be required to track Federal funds in accordance with normal Departmental processes. DOE facilities will also be required to track non-Federal funds in accordance with established laboratory accounting processes.

B. ESTIMATED FUNDING

DOE anticipates that approximately \$23.4 million will be available for the TCF in FY 2017, subject to the availability of appropriated funds. DOE may issue one, multiple, or no awards.

Program Office	Anticipated Funding Range
Electricity Delivery & Energy Reliability	\$1.2 M
Energy Efficiency & Renewable Energy	\$9.3 M
Fossil Energy	\$6.8 M
Nuclear Energy	\$5.4 M
Total	\$23.4 M

Number of Selections: The number of selections will be based on the number of meritorious applications, and the availability of appropriated funds in each DOE Program Office or technology area.

Funding will be allocated from an appropriation account listed in Appendix A.

Funding Amount per Selection:

Topic 1 Projects - \$100,000 - \$150,000 per award

Topic 2 Projects - \$250,000 - \$750,000 per award

DOE reserves the right to fund, in whole or in part, any, all, or none of the proposals submitted in response to this Solicitation.

C. PERIOD OF PERFORMANCE

Topic 1 projects: 6-12 months

Topic 2 Projects: 12-24 months

D. CROSSCUTTING/MUTI-PROGRAM AWARDS

DOE facilities may submit proposals they view as having crosscutting or multi-program applicability or benefit. Applicants may identify up to three DOE Program or Technology Offices per proposal, and must provide a short explanation for each selection. Applicants will use check boxes to indicate up to three DOE Program or Technology Offices. They will use a text box to identify which Program or Technology Office is their primary selection, and will provide short explanations for each selection. Proposals that applicants identify as crosscutting may be reviewed by subject matter experts for each program or technology area. All of the scored reviews will be used to determine the final merit score. DOE is under no obligation to accept an applicant's determination of cross cutting applicability. DOE reserves the right to make final determinations about which Program Offices will bear which share of the costs for such awards.

E. MULTIPLE AWARDS

DOE facilities are eligible for more than one award. Awards will be made on a per application basis. Each application must define a single envisaged project. Multiple awards will not be made based on a single application for funding.

F. SELECTION NOTIFICATIONS

Selected Applicants Notification: OTT will notify each successful application's point of contact in writing of its selection decision. Notice of selection is not an authorization to begin performance. Selected projects will be required to finalize the Scope of Work (SOW)/Work Plan with the funding Program Office prior to work authorization and release of funds. OTT and/or the funding DOE Program Office(s) may request additional or clarifying information before proceeding to the SOW finalization stage.

Non-selected Notification: Applicants whose proposals are not selected will be advised as promptly as possible.

OTT will provide reviewer comments to all applicants after selections are announced.

G. SUCCESSFUL SUBMISSIONS

If selected for award, OTT reserves the right to require additional or clarifying information for any reason.

H. PROJECT ADMINISTRATION

Projects selected for award will be managed by the DOE facilities in accordance with their requisite policies and procedures. Each awarded project will be funded according to the Program Office control accounts listed in Appendix A. Applicants are encouraged to select up to three Program Office control accounts, as applicable to their project's crosscutting potential. The Program Office that provides funding for the project will be responsible for providing oversight of the awarded project.

Section IV: Proposal Requirements and Review Information

A. Letters of Intent and Initial Eligibility Review

Letters of Intent (LOIs) are mandatory, and will generate a discrete tracking number for use during the full proposal phase. The deadline to submit LOIs is of **8:00 p.m. (ET) on December 22, 2016**; **LOIs submitted after this time** will not be accepted. All LOIs will be subject to an initial eligibility screen to determine that:

- 1) The applicant is an eligible entity under this solicitation
- 2) The LOI is complete and contains all the information required
- 3) All mandatory requirements are satisfied
- 4) The LOI describes a project that is responsive to the objectives of the Solicitation

LOIs that fail to pass the initial review will be eliminated from further consideration. Applicants whose LOIs fail to pass the initial eligibility review will be notified by 5:00 p.m. (ET) on December 29, 2016.

B. Proposals and Eligibility Review

Proposals will only be accepted with a corresponding tracking number from an eligible LOI. Proposals submitted after the proposal deadline of **8:00 p.m. (ET) on February 10, 2017** will not be reviewed. All proposals will be subject to an eligibility review to determine that:

- 1) The applicant is an eligible entity under this solicitation
- 2) The application for funding is complete and contains all the information required
- 3) All mandatory requirements are satisfied
- 4) The proposed project is responsive to the objectives of the Solicitation

Proposals that fail to pass the initial eligibility review will not be forwarded for merit review and will be eliminated from further consideration. Applicants whose proposals fail to pass the initial eligibility review will be notified by 5:00 p.m. on February 17, 2017.

C. Merit Review Criteria

Proposals that pass the eligibility screen will be forwarded for merit review. Selections will be made based on the following criteria.

1. Commercialization Evaluation (35% of composite score)

Commercial Impact Criterion

- Extent to which the proposed technology will result in a commercially successful product and/or company.
- Extent to which the proposed technology has the ability to be successfully commercialized in a reasonable timeframe (3-5 years).
- Extent to which the proposed technology represents an innovative or significant improvement from current state of the art technologies that results in either a product or solution that transforms or replaces existing industry approaches, or is a new product or solution that can be widely used by the existing industry and will have significant market impact.
- Extent to which the project team understands the market, and its barriers to commercialization.
- If other factors such as policy or regulations are required for the technology to achieve market penetration, the applicant should identify them and discuss the circumstances.

2. Technical Merit Evaluation (65% of composite score)

Technical Merit Criterion 1: Technology Maturity (40%)

- Technology has achieved a Technology Readiness level (TRL) of at least 3. TRL 3 is defined as a technology having demonstrated analytical and experimental proof of concept in a laboratory environment. For example, have experiments or modeling and simulation validated performance prediction of technology capability? Have design techniques been identified or developed? Have scaling studies been initiated?
- Extent to which the applicant describes an understanding of complementary technologies or processes that are necessary for the technology to have relevance in the market.
- Extent to which the applicant describes an understanding of technical issues to be addressed to achieve a successful commercial deployment.
- Evidence that the technology can be deployed at scale.

Technical Merit Criterion 2: Project Plan (40%)

- Technical and Commercialization Approach –
 - Quality and reasonableness of the applicants' plan for closing technical gaps and addressing unanswered technical questions.
 - Quality and reasonableness of the applicant's business plan for market penetration/adoption.
 - Assumptions used to form the business strategy (e.g., market research, analysis, and assessment; competitive analysis of firms and products; identified product specifications).
- Risk Management –
 - Extent to which applicant discusses and demonstrates understanding of the key technical and commercial uncertainty and risks involved in the proposed work.
 - Extent to which applicant adequately describes how they will manage and retire risks.
- Goals and Outcomes –
 - Extent to which the project plan clearly describes the goals and outcomes of the project, including measures of technical advancement and business success.
 - Extent to which the proposed tasks and subtask activities in the work plan are verified through performance metrics, milestones, and deliverables that are specific, measurable, aggressive (but attainable), realistic, and timely (i.e., not a report summarizing work that was done).

Technical Merit Criterion 3: Project Team and Resources (20%)

- Capabilities – The extent to which the capability of the Principal Investigator(s) and the proposed team, including partnerships, can address all aspects of the proposed project, including, but not limited to, qualifications, relevant expertise, and time commitment of the individuals on the team.
- Contributions – Clarity, adequacy and completeness of roles and contributions of each team member in development of the project and/or commercialization of the products, including financial support of partners.
- Readiness – Extent to which the final team, facilities and equipment required to complete this project is fully in place, assembled and committed to the project (e.g., are there any key members that are “to be hired at a later date?”).
- Commitment – Extent to which there is demonstrated institutional commitment from senior laboratory management and corporate officers of partners.
- Resources – Sufficiency of facilities to support the proposed work. and reasonableness and, adequacy of the proposed budget to meet proposed project objectives.

D. Program Policy Factors

In addition to the criteria above, the following program policy factors may be considered in determining which proposals to select for negotiations:

- The degree to which the proposed project offers an opportunity to facilitate commercialization of a promising technology that does not currently have other programmatic support.
- The degree to which the proposed project has a clear alignment with a specific RDD&D opportunity(ies) laid out in the DOE Quadrennial Technology Review.
- Whether the proposed project offers cross cutting or multi-program benefit.
- Diverse representation of DOE facilities in the TCF's project portfolio.
- Diversity of technologies.
- Diversity of projects spanning participating DOE Program Offices.

Section V: Proposal Submission & Format

A. Proposal Submission Information

Application forms and instructions are available at the OTT submission website. To access these materials:

- 1) Go to <https://secureportal.inl.gov/caesproposal/Home/Login.aspx>
- 2) Select "Login" from the top right hand corner of the screen
- 3) Enter your user credentials or create an account
- 4) Select "Applications" from the menu
- 5) Click on "Create New Application" for the type of application you are creating

B. Document Format Requirements

All non-budget documentation (use templates where provided) is to be prepared using standard 8.5" × 11" paper with 1-inch margins (top, bottom, left, right), using a font size no smaller than Times New Roman 11 point. The preferred file format is PDF for all documents except for spreadsheets. All Spreadsheets are to be uploaded in Excel file format to the application form. Do NOT lock any cells in the spreadsheet.

C. Proposal Elements

1. Letters of Intent

Letters of Intent (LOIs) are mandatory. LOIs consist of information request via an online form, and an attachment for upload. Both are submitted here:

<https://secureportal.inl.gov/caesproposal/Proposal/Proposals.aspx> by **8:00 p.m. (ET) on December 22, 2016**. The applicant's point of contact should receive an email acknowledging receipt of the proposal within one business day. Please contact TCF@hq.doe.gov if a receipt is not received. LOIs will be submitted via online forms and attachments.

a) LOI Project Administrative Detail and Summary

Information about the project and the applicant's contact information is requested via the Project Administrative Detail and Summary, which is completed via an online form. All information fields are mandatory. The form asks for the following information:

- i. Project Title. Text box provided on form.
- ii. Identification of primary Program or Technology Office that the project align to, and an explanation for each of us to three selections. Text box provided on form.
- iii. Period of Performance (6-24 months). Text box provided on form.
- iv. Brief Overview (for public release). Text box provided for a short description of the proposal (500 characters or less). DOE will use this information to assist in recruiting Subject Matter Experts to acts as merit reviewers.
- v. Principal Investigator Information. Text box provided for name, phone, primary email, alternate email.
- vi. Lead Laboratory/Facility. Select from drop down list.
- vii. Topic Selection. Drop down menu on form.
- viii. Technology Area(s). Use check boxes to select up to three DOE Program Office(s) and Sub-Program Area(s) from the tree menu on the application page. Please see Appendix A for list of eligible Program Offices and Sub-Program Areas.
- ix. Proposal's Point of Contact. Use the text box to provide salutation, first & last name, organization, phone, email, country, state, and city.
- x. Partner Organization(s) and points of contact (name and email), if applicable. Use the text box to provide salutation, first & last name, organization, phone, email, city, state, country.

- xi. Previous TCF Funding. Use a Yes/No radio button to answer whether the TCF funded this (project or technology – or both) in FY 16. Proposals that received FY16 TCF funding under Topic 1 are eligible to apply for FY17 TCF funding under Topic 2, provided that the Topic 1 project was successful in accomplishing its goals, complied with all reporting requirements, and that the new funding request demonstrates progress and advances the technology toward commercialization. If the project or technology did receive FY16 TCF funding, use the text box to provide a short description (up to 500 characters) of its progress since then.

Please note that the Project Administrative Detail and Summary form includes the following affirmation:
I, my home organization, and my proposed partner(s) have read and agree to the requirements as they are outlined in the Solicitation. Agreement by all parties to these requirements is indicated upon submission.

b) LOI Narrative

Applicants must upload a Letter of Intent narrative document. The document must contain the following information:

- i. Project Title
- ii. Tracking ID #
- iii. DOE facilities(s) and proposed partner(s), if applicable
- iv. A brief project narrative not to exceed 300 words, which DOE may use for public release

The document must be saved in Portable Document Format (PDF), and conform to this naming convention: 2017 TCF LOI "Tracking ID #".pdf

Note: All information included in the LOI will be visible on the application form once created in the submission system.

2. Proposals

Proposals must be uploaded to <https://secureportal.inl.gov/caesproposal/Proposal/Proposals.aspx> by **8:00 p.m. (ET) on February 10, 2017**. The applicant's point of contact should receive an email acknowledging receipt of the proposal within one business day. Please contact TCFsubmissions@inl.gov if a receipt is not received. Proposals may include an appendix of team members' resumes (no other information or materials). Proposals must not exceed 5 or 10 pages, depending on topic, excluding the Technical Summary/Abstract for Public Release and team members' resumes. **Excluding resumes, only the first five pages of a Topic 1 proposal and the first 10 pages of a Topic 2 proposal will be reviewed.**

To create the full proposal, click the "Create New Application" link next to the Fiscal Year 2017 Technology Commercialization Fund Full Application. The submission system will show the LOIs submitted and when you click on the desired LOI, the system will generate the full application page. The tracking number will be the same and all information except the LOI attachment itself will appear in the full application form. That information can be updated as needed. Scroll down immediately and save the application.

Note: Applicant must provide information for each of the elements described below; however, the depth of the discussion for each element will depend on whether the proposal is seeking funding under Topic 1 or Topic 2.

a) Technical Summary/Abstract for Public Release (PDF Attachment).

The project summary/abstract must be suitable for dissemination to the public, and must not exceed one page. It should be a self-contained document that identifies the name of the applicant;

the project director/PI(s); the project title; list of major deliverables; scope and objectives of the project; a description of the project, including major tasks (phases, planned approach, etc.) and methods to be employed; the potential impact of the project (i.e., benefits, outcomes); and major participants (for collaborative projects). This document must not include any proprietary or sensitive business information because DOE may make it available to the public, if the project is selected for award.

The document must be saved as in Portable Document Format (PDF), and conform to this naming convention: 2017 TCF Abstract "Tracking ID #".pdf

b) Commercialization Plan (PDF Attachment)

Please identify the following information in this document:

- i. The target market(s) for commercialization of the technology/product including a brief discussion of identified or anticipate market barriers
- ii. Competing technologies/products and estimated timeframe to overcome technical and market barriers
- iii. Proposed commercialization end state of the project, to include whether the technology/product will be available in the identified markets, and if not what are the anticipated follow on activities necessary to bring the product to market
- iv. The extent to which the proposed technology will result in a commercially successful product and/or solution that transforms or replaces existing industry approaches or solutions that can be widely used by the existing industry
- v. Clear statement of how the proposed technology represents an innovative and significant improvement with respect to existing commercial products or solutions.

The document must be saved as in Portable Document Format (PDF), and conform to this naming convention: 2017 TCF Commercial Impact "Tracking ID #".pdf

c) Technical Narrative (PDF Attachment)

This document should include the following information:

- i. **Project Description** - Describe the project's goals and objectives. Provide a brief history of the technology development and commercialization efforts to date, including current status.
- ii. **Project Plan** - Describe the technical and commercialization approach for the project including how you will close technical gaps and address unanswered questions. Clearly state what the business plan for market penetration/adoption is and how you have addressed any assumptions used to form your business strategy. Describe how you will manage technical and commercial risks related to your proposed work and how you will retire those risks as they arise. Clearly articulate the goals and outcomes of the project, including measures of technical and business success.
In addition to the written summary, provide a table with milestones to include a description of the outcomes or goals being achieved. Milestones should be specific, measureable, achievable, realistic, and time-bound (SMART) and represent a tangible and measureable achievement of a project outcome or goal, e.g., completion of a technology upgrade or performance test. The table should also include deliverables with a description of the data and information or knowledge being provided in the deliverable.
- iii. **Team & Resources** - Describe the project team's capabilities including that of the Principal Investigator(s) and the proposed team, including partnerships and how each member will contribute to the commercialization of the product. Clearly state the team's and the lab's

readiness to begin work on the project. Describe how committed the team and the senior laboratory management and corporate officers of partners are to the project. Describe the facilities needed to support the proposed work. For project partners include name of the partner(s) and a description of the partner's business. Also, include a discussion of the partner's products and services currently in the market. Describe the history of the laboratory's interaction with the partner(s) and the role of the partner(s) in the project, including partner's responsibilities for milestone and deliverable accomplishment and their financial support or in-kind contributions.

The document must be saved as in Portable Document Format (PDF), and conform to this naming convention: 2017 TCF Technical Narrative "Tracking ID #".pdf

d) Budget (online form and an Excel file)

Please complete the online form to provide the following information:

- i. TCF Funding Requested
- ii. Non-Federal Matching Funds
- iii. Proposed Total Budget
- iv. Non-Federal Source Verification (Checkbox)

Use the budget template (provided online) to submit the following information:

- i. Budget by year for the project (FY-17, FY-18)
- ii. Budget by cost category
 - Personnel
 - Travel
 - Equipment
 - Supplies
 - Contractual
 - Other
 - Total Direct Charges
 - Indirect Charges
 - Total project Costs
 - Non-Federal Contributions
 - Cash
 - In-Kind

The template must be saved as an Excel file, and conform to this naming convention: 2017 TCF Budget "Tracking ID #".xlsx

SECTION VI: OTHER INFORMATION

A. MODIFICATIONS

Notices of any modifications to this Solicitation will be distributed via email to the points of contact identified in the list in Attachment C.

B. TREATMENT OF PROPOSAL INFORMATION

In general, OTT will use data and other information contained in proposals for evaluation purposes only, unless such information is generally available to the public or is already the property of the Government.

Applicants should not include in their proposals trade secrets or commercial or financial information that is privileged or confidential, unless such information is necessary to convey an understanding of the proposed project or to comply with a requirement in this Solicitation. Proposals that contain trade secrets or commercial or financial information that is privileged or confidential—and that the applicant does not want disclosed to the public or used by the Government for any purpose other than proposal evaluation—must be marked as described below.

The cover sheet of the proposal must be marked as follows, and must identify the specific pages that contain trade secrets or commercial or financial information that is privileged or confidential:

Notice of Restriction on Disclosure and Use of Data:

Pages [list applicable pages] of this document may contain trade secrets or commercial or financial information that is privileged or confidential, and is exempt from public disclosure. Such information shall be used or disclosed only for evaluation purposes or in accordance with a financial assistance or loan agreement between the submitter and the Government. The Government may use or disclose any information that is not appropriately marked or otherwise restricted, regardless of source. [End of Notice]

The header and footer of every page that contains trade secrets or commercial or financial information that is privileged or must be marked as follows:

“May contain trade secrets or commercial or financial information that is privileged or confidential and exempt from public disclosure. ”

In addition, each line or paragraph containing trade secrets or commercial or financial information that is privileged or confidential must be enclosed in brackets.

The above markings enable DOE to follow the provisions of 10 CFR 1004.11(d) in the event a Freedom of Information Act (FOIA) request is received for information submitted with a proposal. Failure to comply with these marking requirements may result in the disclosure of the unmarked information under a FOIA request or otherwise. The U.S. Government is not liable for the disclosure or use of unmarked information, and may use or disclose such information for any purpose.

Subject to the specific FOIA exemptions identified in 5 U.S.C. 552(b), all information submitted to OTT by an applicant is subject to public release under the Freedom of Information Act, 5 U.S.C. §552, as amended by the OPEN Government Act of 2007, Pub. L. No. 110-175. It is the proposer’s responsibility to review FOIA and its exemptions to understand:

- 1) What information may be subject to public disclosure and
- 2) What information applicants submit to the Government that are protected by law.

In some cases, DOE may be unable to make an independent determination regarding which information submitted by a proposer is releasable and which is protected by an exemption. In such cases, DOE will consult with the proposer, in accordance with 10 C.F.R. §1004.11, to solicit the proposer's views on how the information should be treated.

Appendix A: List of Eligible DOE Program Offices and Technology Areas/Program Office Control Accounts

Office of Electricity Delivery and Energy Reliability (OE)

- Clean Energy Transmission and Reliability
- Cybersecurity for Energy Delivery Systems
- Energy Storage
- Smart Grid Research and Development

Office of Energy Efficiency and Renewable Energy (EERE)

- Advanced Manufacturing
- Bioenergy Technologies
- Building Technologies
- Geothermal Technologies
- Hydrogen and Fuel Cell Technologies
- Solar Energy
- Vehicle Technologies
- Water Power
- Wind Energy

Office of Fossil Energy (FE)

- Advanced Energy Systems (e.g., gasification, turbines, solid oxide fuel cells, advanced combustion)
- Carbon Capture
- Carbon Storage
- Coal R&D (e.g., recovering rare earth elements from coal and coal by-products)
- Cross Cutting Research (e.g., sensors and controls, extreme environmental materials, water management, high performance computing)
- Natural Gas Technologies
- Supercritical Transformation Electric Power (STEP) R&D
- Unconventional Fossil Energy Technologies

Office of Nuclear Energy (NE)

- Fuel Cycle R&D
- Nuclear Energy Enabling Technologies
- Reactor Concepts R&D
- Supercritical Transformation Electric Power (STEP) R&D

Appendix B: TCF Match and Non-Federal Match Information

Matching

The terms “matching” and “cost sharing” are often used synonymously and can create confusion. OTT uses the terms “matching” and “non-Federal match” to ensure consistency with Section 1001 of EPAct, which authorized the establishment of the Technology Commercialization Fund. For the TCF, “match” or “matching funds” means that for each dollar of TCF funding provided, a dollar of non-Federal funds is required. Because there is a one-for-one match required for TCF funds, the TCF will never contribute more than 50% of the total cost of any project. It is possible for the non-Federal match to exceed the funding contributed by the TCF, if the DOE site or private partner wishes to provide more than 50% of the total project cost.

What Qualifies for Non-Federal Matching

It is not possible to explain what specifically qualifies for the non-Federal match in one or even a couple of sentences. Please consult the Federal Acquisition Regulations (FAR) or the rules for Federal Financial Assistance at 2 CFR 200 for information about which costs are allowable. In addition, matching non-Federal cost may not be counted if they are paid by the Federal Government under another award.

In addition to the regulations referenced above, other factors may also come into play such as timing of donations and length of the project period. For example, the value of ten years of donated maintenance on a project that has a project period of five years would not be fully allowable. Only the value for the five years of donated maintenance that corresponds to the project period is allowable and may be counted.

Additionally, DOE generally does not allow pre-award costs for either Federal cost match or reimbursement when these costs precede the signing of the appropriation bill that funds the award. In the case of a competitive award, DOE generally does not allow pre-award costs prior to the signing of the Selection Statement by the DOE Selection Official.

DOE Financial Assistance Rules 2 CFR Part 200 as amended by 2 CFR Part 910

As stated above, the rules about what is allowable are generally the same within like-types of organizations. Following are the rules found to be common, but again, the specifics are contained in the regulations and cost principles specific to the type of entity:

- A. Acceptable contributions. All contributions, including cash contributions and third party in-kind contributions, must be accepted as part of the Prime Recipient's non-Federal match if such contributions meet all of the following criteria:
 - 1) They are verifiable from the recipient's records.
 - 2) They are not included as contributions for any other Federally assisted project or program.
 - 3) They are necessary and reasonable for the proper and efficient accomplishment of project or program objectives.
 - 4) They are allowable under the cost principles applicable to the type of entity incurring the cost.
 - 5) They are not paid by the Federal Government under another award unless authorized by Federal statute.
 - 6) They are provided for in the approved budget.

B. Valuing and documenting contributions

- 1) Valuing recipient's property or services of recipient's employees. Values are established in accordance with the applicable cost principles, which mean that amounts chargeable to the project are determined on the basis of costs incurred. For real property or equipment used on the project, the cost principles authorize depreciation or use charges. The full value of the item may be applied when the item will be consumed in the performance of the award or fully depreciated by the end of the award. In cases where the full value of a donated capital asset is to be applied as non-Federal matching funds, that full value must be the lesser or the following:
 - a) The certified value of the remaining life of the property recorded in the recipient's accounting records at the time of donation; or
 - b) The current fair market value. If there is sufficient justification, the Contracting Officer may approve the use of the current fair market value of the donated property, even if it exceeds the certified value at the time of donation to the project. The Contracting Officer may accept the use of any reasonable basis for determining the fair market value of the property.
- 2) Valuing services of others' employees. If an employer other than the recipient furnishes the services of an employee, those services are valued at the employee's regular rate of pay, provided these services are for the same skill level for which the employee is normally paid.
- 3) Valuing volunteer services. Volunteer services furnished by professional and technical personnel, consultants, and other skilled and unskilled labor may be counted as non-Federal matching if the service is an integral and necessary part of an approved project or program. Rates for volunteer services must be consistent with those paid for similar work in the recipient's organization. In those markets in which the required skills are not found in the recipient organization, rates must be consistent with those paid for similar work in the labor market in which the recipient competes for the kind of services involved. In either case, paid fringe benefits that are reasonable, allowable, and allocable may be included in the valuation.
- 4) Valuing property donated by third parties.
 - a) Donated supplies may include such items as office supplies or laboratory supplies. Value assessed to donated supplies included in the non-Federal match share must be reasonable and must not exceed the fair market value of the property at the time of the donation.
 - b) Normally only depreciation or use charges for equipment and buildings may be applied. However, the fair rental charges for land and the full value of equipment or other capital assets may be allowed, when they will be consumed in the performance of the award or fully depreciated by the end of the award, provided that the Contracting Officer has approved the charges. When use charges are applied, values must be determined in accordance with the usual accounting policies of the recipient, with the following qualifications:
 - i. The value of donated space must not exceed the fair rental value of comparable space as established by an independent appraisal of comparable space and facilities in a privately owned building in the same locality.
 - ii. The value of loaned equipment must not exceed its fair rental value.
- 5) Documentation. The following requirements pertain to the recipient's supporting records for in-kind contributions from third parties:
 - a) Volunteer services must be documented and, to the extent feasible, supported by the same methods used by the recipient for its own employees.
 - b) The basis for determining the valuation for personal services and property must be documented.

Appendix C: Technology Transfer Offices at DOE National Labs and Facilities

The Ames Laboratory			
Ames Office of Sponsored Research Administration			
POC:	Debra Covey	covey@ameslab.gov	515.294.1048
Argonne National Laboratory			
Argonne Office of Technology Development and Commercialization (TDC)			
POC:	Suresh Sunderrajan	Ssunderrajan@anl.gov	630.252.8111
Brookhaven National Laboratory			
Brookhaven Office of Technology Development and Commercialization (TDC)			
POC:	Lee Cheatham	lcheatham@bnl.gov	631.344.8941
Fermi National Accelerator Laboratory			
Fermi Lab Office of Partnerships and Technology Transfer			
POC:	Cherri Schmidt	cherri@fnal.gov	630.840.5178
Idaho National Laboratory			
Technology Deployment Office			
POC:	Jason Stolworthy	Jason.stolworthy@inl.gov	208.526.3437
Lawrence Berkeley National Laboratory			
LBNL Innovation and Partnerships Office (IPO)			
POC:	Elsie Quaiter-Randall	equaiterandall@lbl.gov	515.486.7234
Lawrence Livermore National Laboratory			
LLNL Industrial Partnerships Office (IPO)			
POC:	Richard Rankin	rankin8@llnl.gov	925.423.9353
Los Alamos National Laboratory			
LANL Office of Market Transition within the Richard Feynman Center for Innovation			
POC:	David Pesiri	pesiri@lanl.gov	505.665.7279
National Energy Technology Laboratory			
NETL Office of Technology Transfer			
POC:	Jessica Sosenko	jessica.sosenko@netl.doe.gov	412.386.7417
National Renewable Energy Laboratory			
NREL Office of Technology Transfer within the Office of Innovation Partnering and Outreach			
POC:	Kristin Gray	kristin.gray@nrel.gov	303.275.3050
National Security Campus			
N/A			
POC:	Chris Boucher	cboucher@kcp.com	816.488.4186
Nevada National Security Site			
N/A			
POC:	Monica Sanchez	Monica.Sanchez@nnsa.doe.gov	702.295.2309

Oak Ridge National Laboratory			
ORNL Office of Technology Transfer within the Office of Science and Technology Partnerships			
POC:	Mike Paulus	paulusmj@ornl.gov	865.574.1051
Pacific Northwest National Laboratory			
PNNL Office of Technology Commercialization (OTC)			
POC:	Peter Christensen	peter.christensen@pnnl.gov	509.375.6159
Pantex Plant			
Pantex Technology Transfer			
POC:	Jeremy Benton	Jeremy.Benton@cns.doe.gov	806.477.5422
Website:	N/A		
Princeton Plasma Physics Laboratory			
PPPL Office of Technology Transfer, Patents and Publications			
POC:	Laurie Bagley	lbagley@pppl.gov	609.243.2425
Sandia National Laboratories			
Sandia Industry Partnerships Office			
POC:	Mary Monson	mamoso@sandia.gov	505.844.3289
Savannah River National Laboratory			
Savannah River Office of Research and Technology Partnerships			
POC:	Chuck Meyers	Chuck.Meyers@srs.gov	803.725.3020
SLAC National Accelerator Laboratory			
SLAC Office of Intellectual Property and Research Partnerships			
POC:	Mike Willardson	michaelw@slac.stanford.edu	650.926.3580
Thomas Jefferson National Accelerator Facility			
Jefferson Lab Technology Transfer and Invention Review Committee			
POC:	Joseph L. Scarcello	scarcell@jlab.org	757.269.7027
Y-12 National Security Complex			
Y-12 Office of Commercialization and Partnerships			
POC:	Jeremy Benton	Jeremy.Benton@cns.doe.gov	865.574.5981