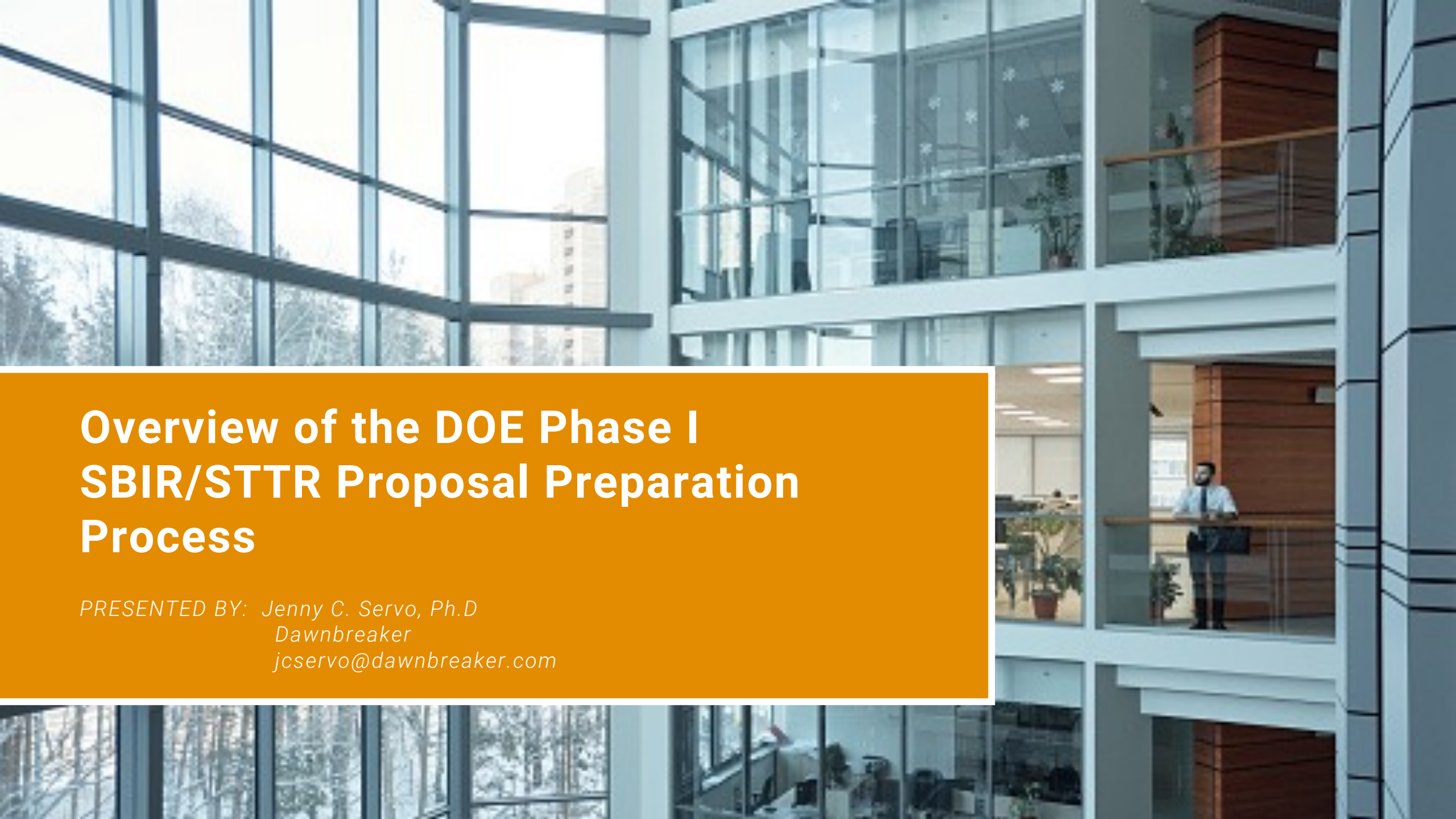

Overview of the DOE Phase I SBIR/STTR Proposal Preparation Process

PRESENTED BY: Jenny C. Servo, Ph.D
Dawnbreaker
jcservo@dawnbreaker.com

WEBINAR SERIES

- *Tuesday, Nov 9th – Overview of the DOE Phase I SBIR/STTR proposal preparation process*
- *Tuesday, Nov 23 – Do you really understand the Topic?*
- *Tuesday, Nov 30 – The Importance of Developing a Proposal Preparation Schedule*
- *Tuesday, Dec 14 – Becoming Familiar with the DOE Application Resources*

…More in the new year

TODAY's AGENDA

- *Locating Needed Resources*
- *What should I do when Topics are Released?*
- *Important Dates*
- *Do I have to wait until the Funding Opportunity Announcement is released to start working on my proposal?*
- *What does it take to be successful with DOE?*

Locating Needed Resources

Primary Resource

Simply type
DOE SBIR FOA

U.S. DEPARTMENT OF ENERGY | Office of Science

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SBIR/STTR Phase III Success Stories
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Contact the DOE SBIR/STTR Programs Office

Address

U.S. Department of Energy
SC-29/Germantown Building
1000 Independence Ave., SW
Washington, DC 20585

Phone

Tel(301) 903-5707
Fax(301) 903-5488

Email

Send us a message
sbir-sttr@science.doe.gov

Read more »

Funding Opportunities

Fiscal Year		
FY23 (Future)	FY22 (Current)	FY21 (Closed)

2022

Phase I	Release 1	Release 2
Topics Issued	Monday, July 12, 2021	Monday, November 8, 2021
Document	Phase I Release 1 Topics	Phase I Release 2 Topics
Topic Webinar, week of	Webinar 1: Topics 01 – 23 Slides Webinar 2: Topics 25 - 35 Slides	November 16: CESER, NNSA, OE & FE Topics 1- 6 & 21-23 Register November 17: EERE Topics 7-20 Register November 18: FES, HEP & NE Topics 24-38 Register
FOA Issued	Monday, August 9, 2021	Monday, December 13, 2021
Document	DE-FOA-0002554	
FOA Webinar	Phase I Release 1 FOA Webinar Slides	Friday, December 17, 2021*
Letters of Intent (LOI) Due	Monday, August 30, 2021 5:00pm ET	Monday, January 3, 2022 5:00pm ET
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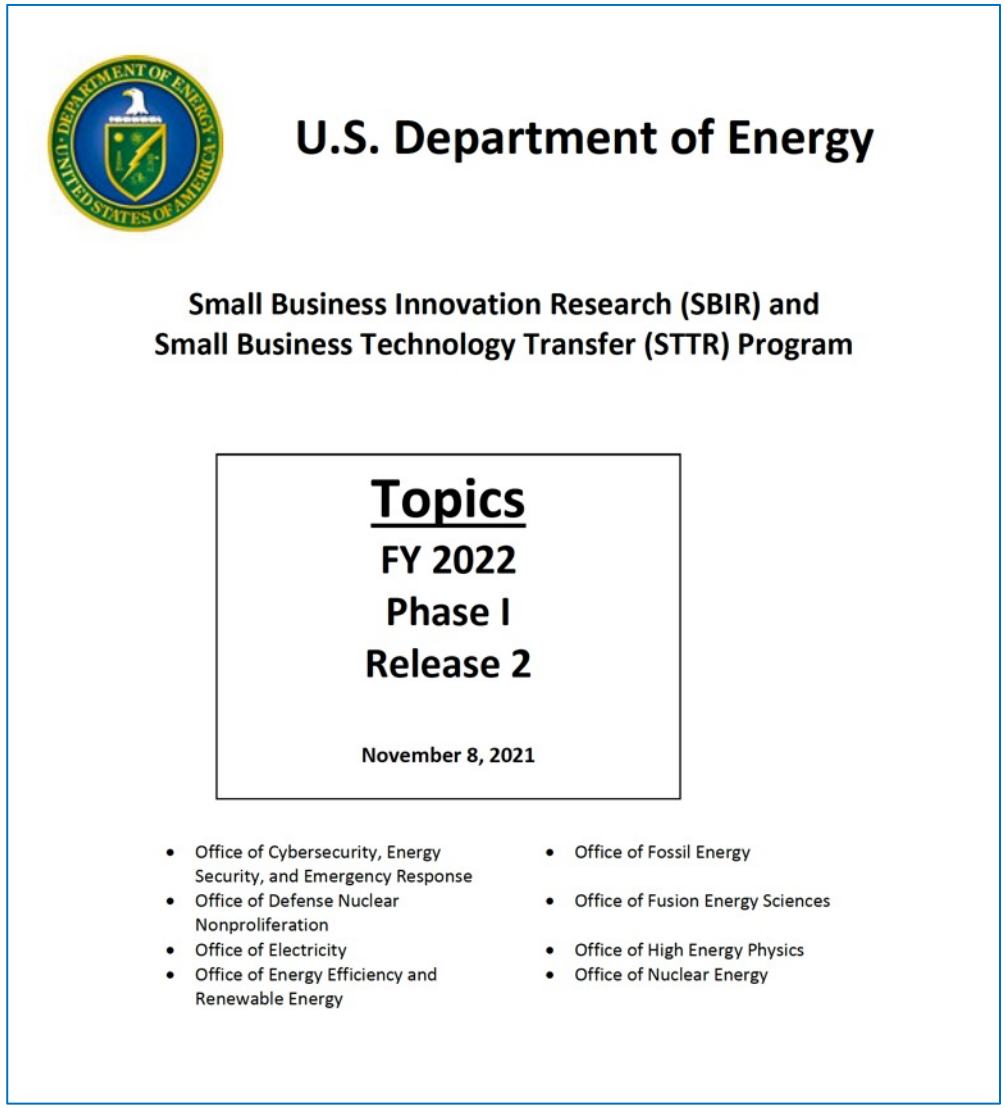
Projected Grant Start Date	Monday, February 14, 2022	Monday, June 27, 2022
Principal Investigator Meeting		



U.S. Department of Energy

Small Business Innovation Research (SBIR) and
Small Business Technology Transfer (STTR) Program

Topics
FY 2022
Phase I
Release 2

November 8, 2021

- Office of Cybersecurity, Energy Security, and Emergency Response
- Office of Defense Nuclear Nonproliferation
- Office of Electricity
- Office of Energy Efficiency and Renewable Energy
- Office of Fossil Energy
- Office of Fusion Energy Sciences
- Office of High Energy Physics
- Office of Nuclear Energy

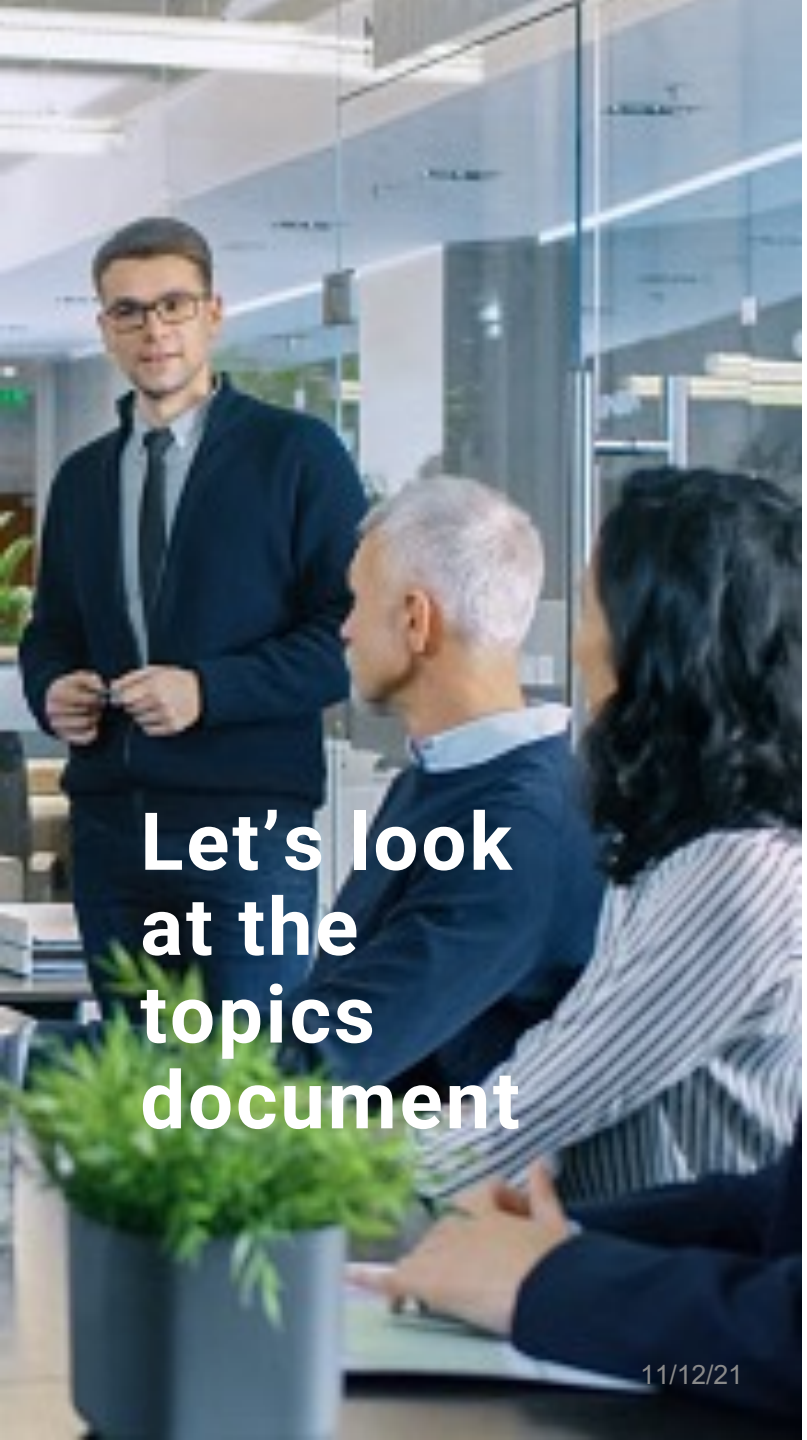
Download the topics today!

The TOPICS for FY22, Phase I, Release 2 was released yesterday

- *The Department of Energy's SBIR/STTR process is unique in many ways*

  - *Topics are released a month BEFORE the solicitation is released.*
  - *The solicitation is called a Funding Opportunity Announcement (FOA)*
  - *The topics are organized by Office*
  - *You must respond to a Topic and a Subtopic*
  - *The topics document states IF, you can submit an SBIR or STTR proposal in response to a topic.*
  - *The topics document indicates the award ceiling on each topic*
  - *A contact's name is provided for each subtopic*
  - *The topics document may be updated from time to time*

Download and save the topics document



Let's look at the topics document

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PROGRAM AREA OVERVIEW: OFFICE OF CYBERSECURITY, ENERGY SECURITY, AND EMERGENCY RESPONSE

The Office of Cybersecurity, Energy Security, and Emergency Response (CESER) leads the Department of Energy's emergency preparedness and coordinated response to disruptions to the energy sector, including physical and cyber-attacks, natural disasters, and man-made events. Cybersecurity for Energy Delivery Systems (CEDS) is a program within the CESER office that works to develop innovative technologies to aid power systems in adapting to and surviving from potential cyberattacks.

The CEDS program leverages its partnerships with stakeholders within electricity generation, transmission, and distribution along with entities that represent the secure delivery of natural gas and petroleum to guide technology development that enhances energy systems cybersecurity without impeding normal operations. Research funding is provided to a diverse range of researchers representing asset owners/operators, supply chain vendors, national laboratories, and academia. All CEDS funded research is intended for demonstration with an entity that represents the potential user of the technology to aid technology transition into wide area adoption.

For additional information regarding CESER's activities and priorities, click here. Click here to read the CESER Blueprint. Information regarding current CEDS' funding can be found here.

Further information regarding the challenges and needs associated with the cybersecurity of the Nation's energy infrastructure can be found in the 2018 releases of the Department's Multiyear Plan for Energy Sector Cybersecurity.

1. ENERGY SYSTEMS CYBERSECURITY

Maximum Phase I Award Amount: $200,000	Maximum Phase II Award Amount: $1,100,000
Accepting SBIR Phase I Applications: YES	Accepting STTR Phase I Applications: NO

Research in cybersecurity for energy delivery systems is focused on enhancement of operational technology (OT) that aids power systems to adapt and survive from a cyberattack and continue safe operations. This research topic requests applications to develop proof of concept for unique and innovative solutions that address a need for the cyber security for the energy sector. Selected applications must include a scope of work that will lead up to, but will not include, the development of a demonstration prototype. These solutions can include, but are not limited to, new capabilities for defending critical infrastructure and sensitive networks against cyberattacks and supply chain attacks, improved authentication mechanisms, zero-trust architectures, and better intrusion detection capabilities.

All applications to subtopics under this topic must:

- Clearly provide understanding of current capabilities and outline the novelty of the proposed solution.
- Propose a tightly structured project which includes technical and business milestones that demonstrate clear progress, are aggressive but achievable, and are quantitative;
- Demonstrate a clear understanding of the OT process/system that is being protected and how the solution will protect without interrupting reliability and normal operations;
- For any solution intended for onsite installation; fully justify the compatibility with the electro-magnetic and other environmental conditions of the intended site;
- Clearly describe the commercialization potential of the federally-funded effort and provide a detailed path to scale up in potential transition to industry practice.

- *The Office releasing the topic is in the box*
  - *There are hyperlinks in the Office description which provides background information*
- *The topic is always a number – in this case 1.*
- *The content in the blue box it indicates that they are accepting only SBIR applications*
  - *DOE refers to proposals as applications, as you will be submitting an application package*
- *The amount of the Phase I award is noted - $200K*
- *The topic description specifies what all subtopics MUST do*

Back to Table of Contents

- Fully justify the future potential for demonstration with an asset owner/operator who is an intended user.

All applications to subtopics under this topic should:

- Prioritize the reduction of catastrophic cyber risk and measures that enhance strategic stability for the nation's energy infrastructure.
- Emphasize technologies that ensure safe, clean, and reliable access to critical functions and safety information systems without obstructing normal operations.
- Clearly define the merit of the proposed innovation compared to competing approaches and the anticipated outcome.
- Be consistent with and have performance metrics (whenever possible) linked to published, authoritative analyses in your technology space.
- Include quantitative projections for price and/or performance improvement that are tied to representative values included in authoritative publications or in comparison to existing products.
- Fully justify all performance claims with thoughtful theoretical predictions and/or experimental data.

Grant applications are sought in the following subtopics:

a. Actionable Cyber Intelligence

This subtopic is for the development of tools, techniques, and/or methodologies that link information to action/comprehension for energy systems cybersecurity. This subtopic is for the development of capabilities that move past the diagnostic from system anomalies and towards actionable and implementable remediations to malicious intrusions or alterations or energy OT systems. In the interest of developing solutions that incorporate "security by design", the proposed solutions should add value to energy delivery systems operations through thoughtful approaches that aid in answering the question "what next?" when addressing a suspected or confirmed cyber concern. Solutions need to take into consideration reliability requirements and the custom engineered nature of most OT systems. Proposed solutions can include but are not limited to sandbox environments to exercise scenarios, automated and unique cyber guidance development for acquisitions, and solutions that promote self-healing from intrusion or malicious attacks.

Questions – Contact: Walter Yamben, Walter.Yamben@netl.doe.gov

References:

1. American Petroleum Institute, 2014, State of Operational Technology Cybersecurity in the Oil and Natural Gas Industry, *American Petroleum Institute, April 2014.* p. 82. www.api.org/~/media/Files/Policy/Cybersecurity/Operational-Technologies-Guidance-Doc-Apr14.pdf (October 27,2021)
2. Locasto, M., Balenson, D., 2019, A Comparative Analysis Approach for Deriving Failure Scenarios in the Natural Gas Distribution Infrastructure, *In: Staggs J., Shenoi S. (eds) Critical Infrastructure Protection XIII. ICCIP 2019. IFIP Advances in Information and Communication Technology, vol 570. Springer, Cham,* https://link.springer.com/chapter/10.1007/978-3-030-34647-8_2 (October 27,2021)
3. United States Department of Commerce, 2021, NTIA Software Component Transparency, *National Telecommunications and Information Administration, United States Department of Commerce,* https://www.ntia.doc.gov/SoftwareTransparency (October 27, 2021)
4. Proctor, Darrell, 2020, The Energy-Sector Threat: How to Address Cybersecurity Vulnerabilities, *Power Magazine, September 03, 2020,* https://www.powermag.com/the-energy-sector-threat-how-to-address-cybersecurity-vulnerabilities/ (October 27, 2021)

- *Continuation*
  - *There are more guidelines at the top of this page that relate to the topics' requirements*
  - *There is one subtopic*
    - *a letter is used to designate the subtopic. In this case – a.*
  - *There is a contact to whom you can direct questions*
    - *Best to ask questions as early as possible, because of the holiday season*
  - *The references are there for a purpose*
    - *Be sure to review them*

IMPORTANT DATES

Important dates

- *Dates topics are released (11/8/21)*
- *Topic webinar dates (11/16-11/18)*
  - *You need to register in advance*
- *Funding Opportunity Announcement (FOA) release (12/13/21)*
- *Letter of Intent Due (1/3/22)*
- *Non-responsive feedback (1/24/22)*
- *Full Applications due (2/22/22)*

What is a Letter of Intent (LOI)?

- *A Letter of Intent (LOI) is NOT a letter*
  - *It is a brief description of what you intend to propose. Guidelines are provided by DOE*
  - *There is a set format and length*
- *To prepare this well, you should study the topic, listen to the topic webinar, ask the Topic author questions and follow the instructions that DOE provides*

Primary Resource

LOI instructions are under Applicant Resources

U.S. DEPARTMENT OF ENERGY | Office of Science

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Home | Programs | Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) | Funding Opportunities

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- Awardee Resources
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Contact the DOE SBIR/STTR Programs Office

Address

U.S. Department of Energy
SC-29/Germantown Building
1000 Independence Ave., SW
Washington, DC 20585

Phone

Tel(301) 903-5707
Fax(301) 903-5488

Email

Send us a message

sbir-sttr@science.doe.gov

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Funding Opportunities

Fiscal Year		
FY23 (Future)	FY22 (Current)	FY21 (Closed)

2022

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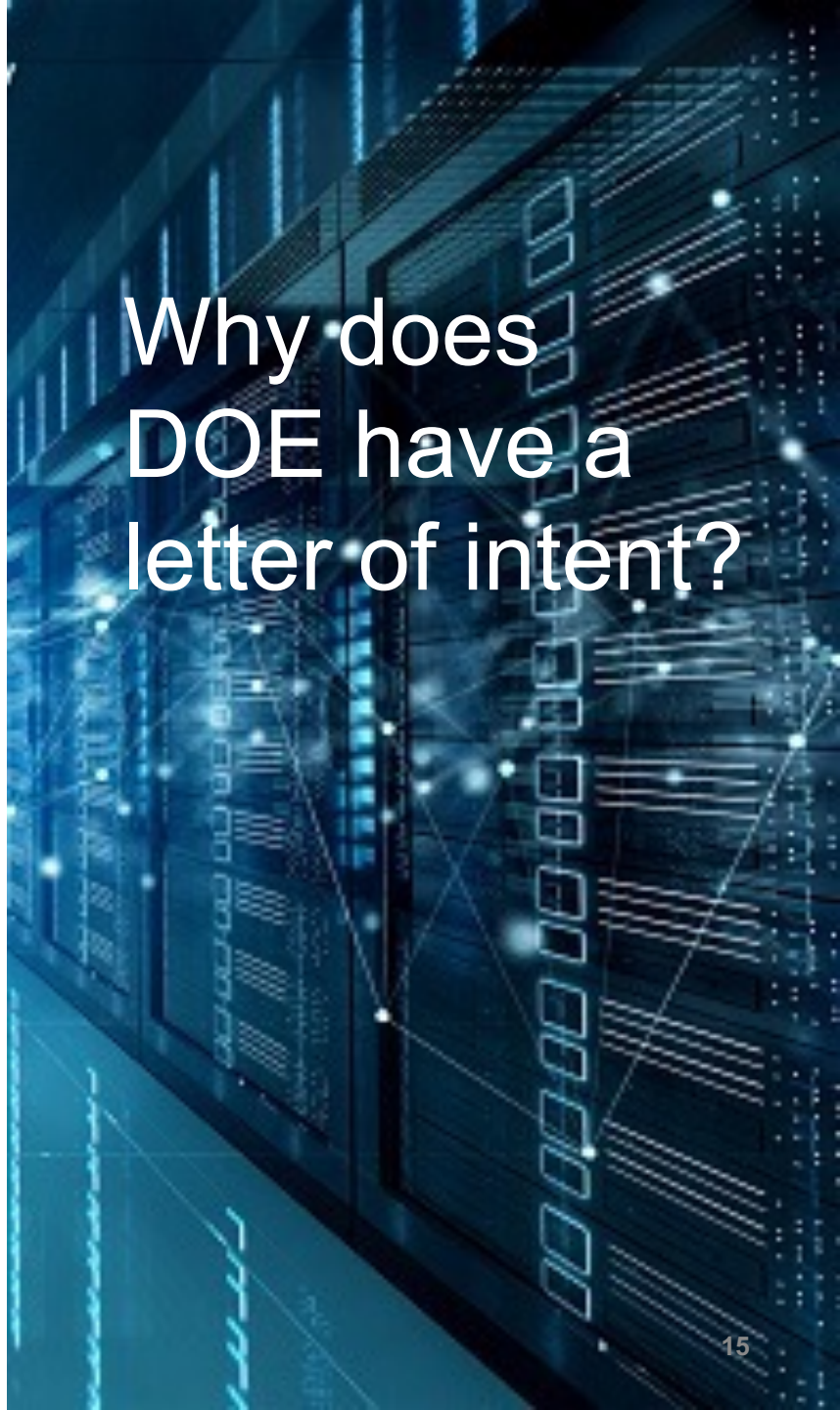
Projected Grant Start Date	Monday, February 14, 2022	Monday, June 27, 2022
Principal Investigator Meeting		

Why does DOE have a letter of intent?

- *Congress has asked agencies participating in the SBIR/STTR programs to announce their awards within 90 days of application submission deadlines*
- *To do this, DOE wants to select the reviewers early. The LOI enables them to do this*



What happens if I get a non-responsive notice from DOE?

- *You can still submit an application if you receive a non-responsive letter from DOE*
  - *DOE only sends an email to those whose LOIs are non-responsive*
  - *You can only submit an application based on the LOIs that you submit.*
  - *You cannot just change topics/subtopics*
- *This is **NOT** like the NSF project pitch process. The intent is different*

Should I talk to the Topic Manager

- *If you have questions, you should ask them as soon as possible*
  - *Send an email in advance and try to schedule a call*
  - *You learn when you listen, not when you talk*
  - *Review all the Topic and subtopic information carefully before you have the call*
  - *The purpose of the call is to seek clarification on questions you have regarding the information provided – so that YOU, and not the topic author can decide if you can submit a responsive application*

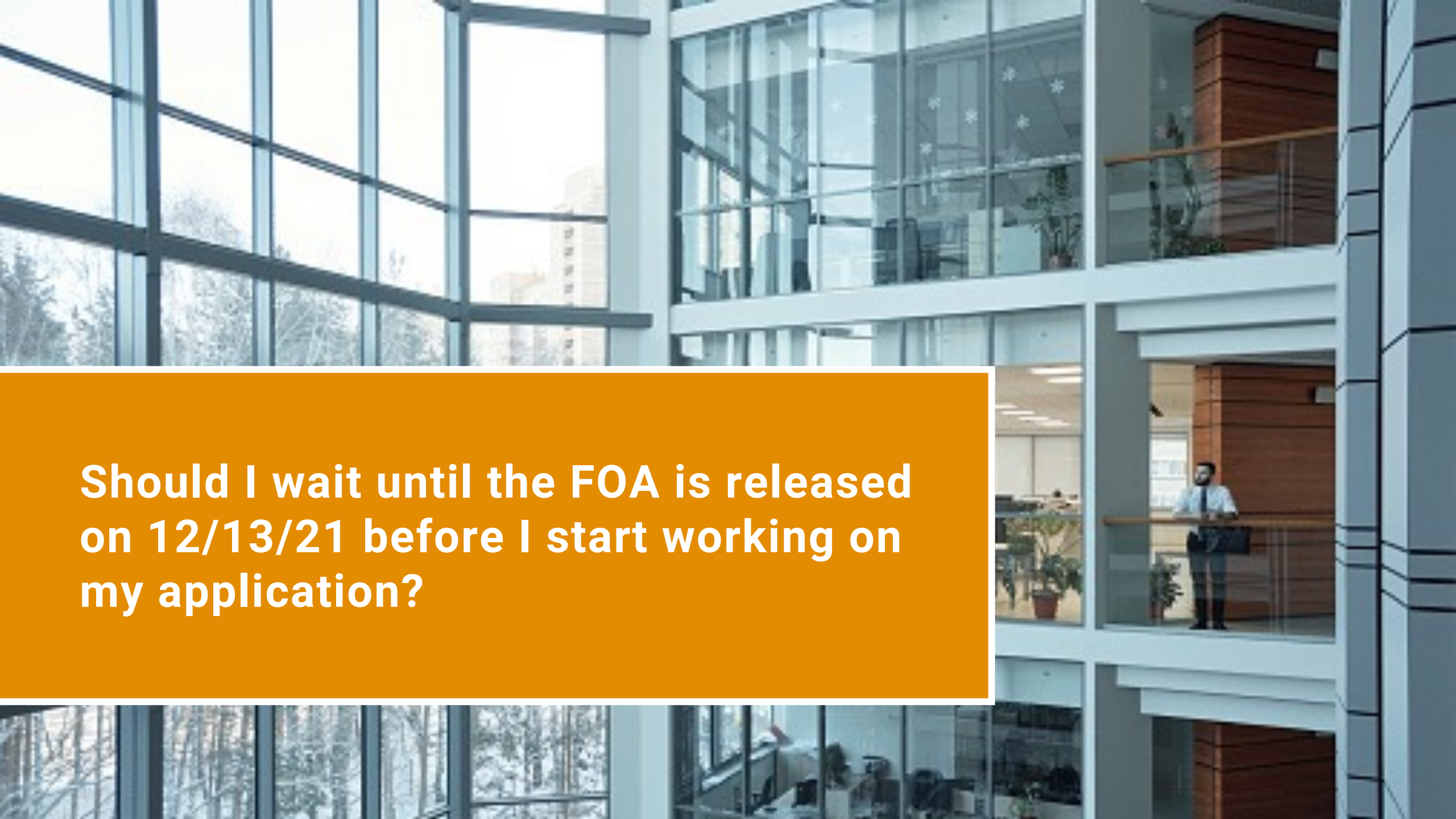
Sample email to Topic Manager

Dear [Insert Topic Manager Name]

By way of introduction my name is [insert name] and I am [describe affiliation]. I have reviewed the current Funding Opportunity Announcement [FOA] and am interested in Topic#, Subtopic Y. After reviewing the topic and subtopic carefully, as well as the links and references, I have a few lingering questions that I would like to discuss with you. Would you have time in the next couple of days for a brief, 10-15 minutes phone call? A brief conversation with you will help me determine if I can submit a responsive proposal. Please recommend a time when I may call you.

My questions relate to: [insert 1 or 2 of your key questions – the following is an example -technology approaches - are there certain approaches which are of no interest to DOE? what are the performance expectations in Phase I as opposed to Phase II?]

Thanks for your consideration of my request.



Should I wait until the FOA is released on 12/13/21 before I start working on my application?

- *The worst thing you can do is to wait for the FOA to be released before you do anything!*

  - *Review the topics document now!*
  - *As you read the topics/subtopics –LISTEN to what the topic manager is saying that they want.*
  - *Is there synergy between your skills and DOE's needs*
  - *Do you understand the state of the art?*

  - *View working on the LOI as starting to work on your proposal*

- *The Letter of Intent is:*

  - *"A Technical Abstract in .PDF format must be uploaded to PAMS, must not exceed 500 words and two pages, and it must provide sufficient technical description of the proposed technology and application to allow DOE to assign technical reviewers to the full grant proposal. The technical abstract may include photos and/or tables, and captions are not included in word count.* ***However, please note that a technical abstract must not contain any proprietary information."***

See DOEs example and more detailed instructions under Applicant Resources

- *The LOI is due right after the new year (1/3/22).*
  - *Start your journey now – by studying and selecting the best topic for which you can submit a responsive application package*

What are the elements
of a DOE Phase I Application?

What is the structure of DOE Phase I proposal

- *In order to apply for a DOE SBIR/STTR award you need to :*
  - *First submit a* **Letter of Intent** *(LOI) through the system called Portfolio Analysis and Management System (***PAMS***)*
  - *Prepare a research proposal (called a* **"Project Narrative"***)*
  - *and a* **Commercialization Plan**
  - *with an accompanying* **budget** *and*
  - **Resumes** (biographical sketches) *of those who will do the work*
  - *A* **public abstract**
  - *A variety of forms and attachments*
  - *Register with the* **System for Awards Management (SAM)**
  - *Submit the application through a system called* **Grants.gov**

The Project narrative is the heart of the proposal

Here's the outline

Cover Page
Proprietary Data Legend
1.0 Identification and Significance of the Problem or Opportunity, and Technical Approach
2.0 Anticipated Public Benefits
3.0 Technical Objectives
4.0 Work Plan
5.0 Performance Schedule
6.0 Facilities/Equipment
7.0 Research Institution
8.0 Other Consultants and Subcontractors
9.0 Bibliography and References Cited

- *As you start to review the topics, also think about how you would address, the first two sections of the project narrative*

1.0 Identification and Significance of the Problem or Opportunity, and Technical Approach

2.0 Anticipated Public Benefits

From previous FOA

- *Identification and Significance of the Problem or Opportunity, and Technical Approach – Define the specific technical problem or opportunity addressed by your application. Provide enough background information so that the importance of the problem/opportunity is clear. Indicate the overall technical approach to the problem/opportunity and the part that the proposed research plays in providing needed results.*

- *Anticipated Public Benefits – Discuss the technical, economic, social, and other benefits to the public as a whole anticipated if the project is successful and is carried over into Phases II and III. Identify specific groups in the commercial sector as well as the Federal Government that would benefit from the projected results. Describe the resultant product or process, the likelihood that it could lead to a marketable product, and the significance of the market.*

Letter of Intent

- *A Technical Abstract in .PDF format must be uploaded to PAMS, must not exceed 500 words and two pages, and it must provide sufficient technical description of the proposed technology and application to allow DOE to assign technical reviewers to the full grant proposal. The technical abstract may include photos and/or tables, and captions are not included in word count. However, please note that a technical abstract must not contain any proprietary information."*

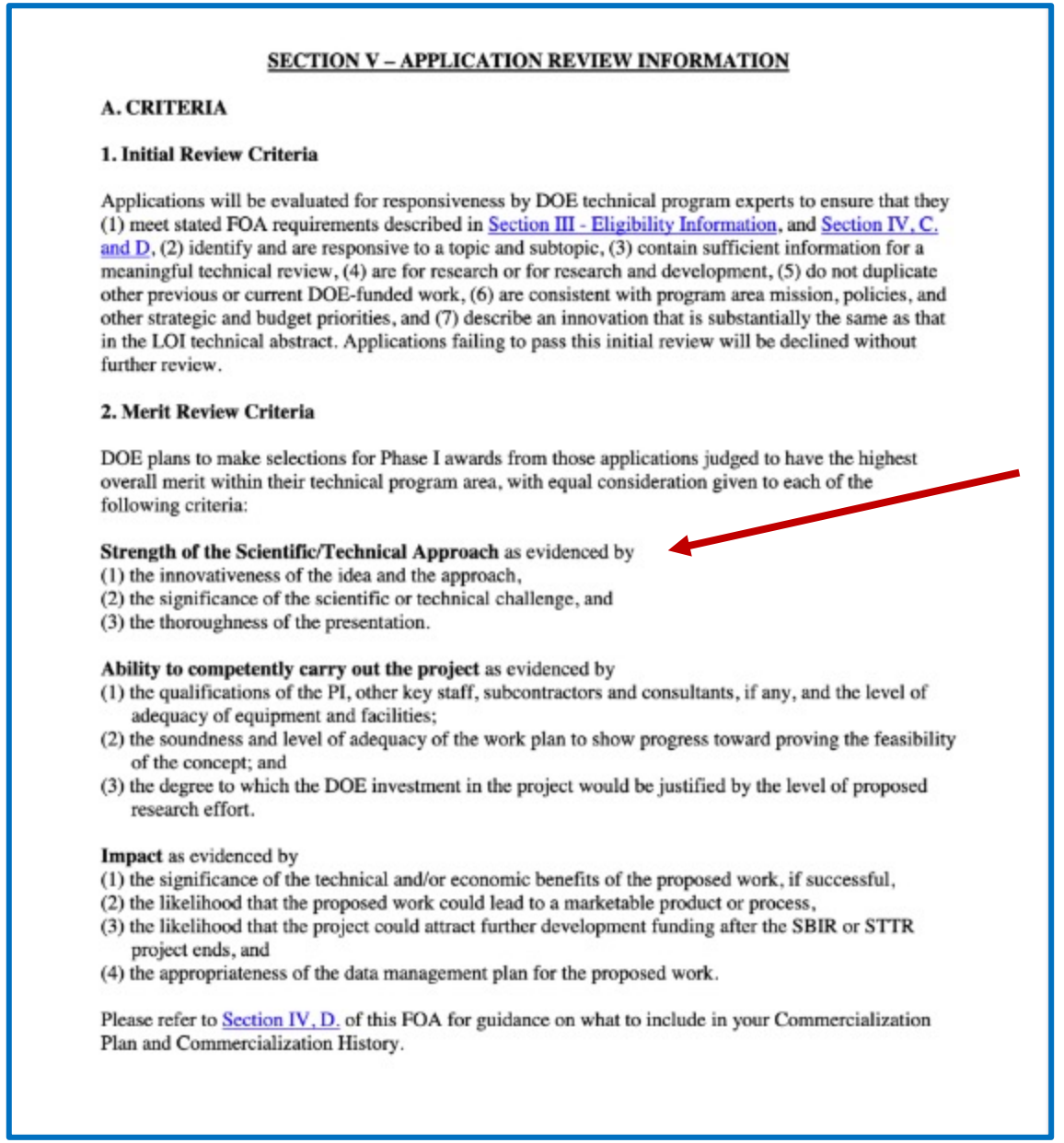
How big is the proposal / application?

Item	Project Narrative	Commercialization Plan	Budget justification	Biographical sketches	Project Abstract
Page numbers	7,500 words	4 pages	Not specified	2 pages	1 page
Other	Follow guidelines in DOE Funding Opportunity Announcement (FOA)	Follow Guidelines Under Applicant Resources	Stay within budget. Use Budget Justification form	Follow guidelines in *Instructions for Completing a DOE SBIR/STTR Phase I Grant Application*	PDF format
					No proprietary info

How do I keep this simple!?

- *Understand what is the most important*
  - *The Project Narrative*
  - *Evaluation criteria: Innovation, Team, Facilities*
- *Know where and when to get help!*
  - *For those in the Phase 0 program – we will help you*
  - *For others – reach out to your local Small Business Development Center and/or Procurement Technical Assistance Center*

Keep the proposal evaluation criteria in mind



SECTION V – APPLICATION REVIEW INFORMATION

A. CRITERIA

1. Initial Review Criteria

Applications will be evaluated for responsiveness by DOE technical program experts to ensure that they (1) meet stated FOA requirements described in Section III - Eligibility Information, and Section IV, C. and D, (2) identify and are responsive to a topic and subtopic, (3) contain sufficient information for a meaningful technical review, (4) are for research or for research and development, (5) do not duplicate other previous or current DOE-funded work, (6) are consistent with program area mission, policies, and other strategic and budget priorities, and (7) describe an innovation that is substantially the same as that in the LOI technical abstract. Applications failing to pass this initial review will be declined without further review.

2. Merit Review Criteria

DOE plans to make selections for Phase I awards from those applications judged to have the highest overall merit within their technical program area, with equal consideration given to each of the following criteria:

Strength of the Scientific/Technical Approach as evidenced by
(1) the innovativeness of the idea and the approach,
(2) the significance of the scientific or technical challenge, and
(3) the thoroughness of the presentation.

Ability to competently carry out the project as evidenced by
(1) the qualifications of the PI, other key staff, subcontractors and consultants, if any, and the level of adequacy of equipment and facilities;
(2) the soundness and level of adequacy of the work plan to show progress toward proving the feasibility of the concept; and
(3) the degree to which the DOE investment in the project would be justified by the level of proposed research effort.

Impact as evidenced by
(1) the significance of the technical and/or economic benefits of the proposed work, if successful,
(2) the likelihood that the proposed work could lead to a marketable product or process,
(3) the likelihood that the project could attract further development funding after the SBIR or STTR project ends, and
(4) the appropriateness of the data management plan for the proposed work.

Please refer to Section IV, D. of this FOA for guidance on what to include in your Commercialization Plan and Commercialization History.

- Think about this , as you review the topics.
- Make sure you understand the state of the art
- Ask questions now

- *Tuesday, Nov 9th – Overview of the DOE Phase I SBIR/STTR proposal preparation process*
- *Tuesday, Nov 23 – Do you really understand the Topic?*
- *Tuesday, Nov 30 – The Importance of Developing a Proposal Preparation Schedule*
- *Tuesday, Dec 14 – Becoming Familiar with the DOE Application Resources*

…More in the new year

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Thank-you for Joining us today!

Jenny C. Servo, Ph.D.

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https://twitter.com/Dawnbreaker