

Critical Minerals and Materials Accelerator Informational NOFO Webinar

0:14

Hello and welcome to the Critical Minerals and Materials Accelerator NOFO Informational webinar.

0:21

Just a few housekeeping items before we get started.

0:24

This webinar is being recorded and will be published on the DE Funding Opportunity Exchange website.

0:30

You will not be able to connect to DOA personnel or other participants via voice or video conferencing in today's webinar.

0:37

All perspective applicants that have general no FO questions or questions during this webinar are directed to send them to the question answer e-mail found here on the slide.

0:48

It'll be put in in the chat and also later in the webinar.

0:52

And then finally do we will attempt to respond to these questions within three business days unless a similar question and answer has already been posted on the website.

1:02

Next slide, please.

1:04

Just a few more things to note before we dive into the agenda.

1:08

There is no new information being provided through this webinar that's not already in the NOFO documents.

1:16

There are no particular advantages or disadvantages to the application evaluation process with your respect to your participation in today's webinar, and your participation today is completely voluntary.

1:29

All applicants are very strongly encouraged to carefully read the Notice of Funding Opportunity, or NOFO and adhere to the stated submission requirements within each topic area on the Exchange website and then this presentation.

1:44

This summarizes the contents of the NOFO.

1:47

If there are any inconsistencies between this presentation or statements during this webinar and the NOFO, you should defer to the NOFO as the controlling document and really rely on that language.

2:00

All right, now that we've covered some of the housekeeping aspects, I'm going to go ahead and introduce myself and my colleagues that we'll be presenting today.

2:09

I'm Helena Khazdozian.

2:10

I am a senior technology manager in the Advanced Materials and Manufacturing Technologies Office.

2:15

I'll be joined by Alex Prisjatschew, who is a technology Manager in the Office of Geothermal of the Hydrocarbons and Geothermal Energy Office, and also my colleague Will Handy, who is a technical project officer in AMMTO.

2:30

OK, so let's go over our agenda.

2:32

We'll go over the funding opportunity.

2:37

We will give details on the topics and subtopics of phase one of the NOFO as well as an overview of phase two of the NOFO.

2:45

We'll get into the specific requirements of the submissions such as the letters of intent, full applications and cost sharing requirements.

2:53

And then again, if you do have questions after that, we'll reiterate how you can reach us.

3:03

OK.

3:09

So just kind of giving a a little bit overview of the funding opportunity here.

3:15

We have up to \$69,000,000 to support collaborative industry partnerships to prototype and pilot innovative processing technologies that are currently only proven at the bench scale to address critical minerals and material challenges and high impact areas.

3:31

This accelerator program is meeting to establish a pipeline to support these mid seed innovations to technology maturation and ultimately unlock private capital investments.

3:42

It will also in leverage Coe lab based activities such as the Critical Materials Innovation Hub or CMI and the minerals to material Supply chain research facility or metallic along with the Critical Materials Collaborative.

4:03

Our goals for this snowfall are fourfold.

4:07

We aim to foster industry partnerships to prototype and pilot technologies to de risk and validate effectiveness of technologies and processes that reduce critical materials demand, enable informed decisions, optimize processes and build confidence and technology scale up through life cycle assessment and techno economic analysis.

4:28

And finally, to address the urgency to meet material demand with secure manufacturing technologies to access untapped and under explored resources.

4:37

As you can see, the cost share requirement for Phase 1 is a 20% cost share minimum and then for Phase 2, the cost share requirement is 50% minimum.

4:50

All right, now we can dive into the funds part of the NOFO, which is the topic areas.

4:57

We do have three topic areas as part of this NOFO.

5:00

The first phase is at the prototyping scale and there's approximately \$24 million available in this first topic area, which is focused on production and material efficiency of critical materials including rare earth elements.

5:15

We anticipate to make 10 to 14 awards in top up area 1 at about \$2,000,000 per project.

5:23

Topic 2 is looking at the processes to refined and alloy gallium, gallium nitride, germanium and silicon

carbide for use in semiconductors and there's about \$6 million available in funding for this topic one to five awards across and then at \$2,000,000 per project.

5:42

And then finally we have topic area 3 which is centered on cost competitive direct lithium extraction, separation and processing exploration and Co production.

5:53

There is about \$23 million available for topic three.

5:56

We will make between 10 and 21 awards cost about \$3,000,000 per project, but there is some, you know, variation about this for each subtopic, which we'll talk about later.

6:09

And then again, Phase 2 is a pilot scale funding opportunity.

6:14

So they'll be about \$16,000,000 available up to 4 for four awards and these would receive about \$8 million per project.

6:25

All right, some really important details you want to note here.

6:28

If you don't take anything else away from today's webinar, the one thing you need to take away out is that letters of intent are required for all applications and each topic you apply for.

6:39

We need that letter of intent first.

6:41

That's mandatory and it is due next Tuesday, April 21st, so you can see here.

6:47

Each topic area has its unique funding opportunity or funding deadline.

6:53

So you need to submit your application for topic one by May 26th, Topic 2 by June 22nd, and Topic 3 by July 20th.

7:01

But you must first submit your letter of intent by April 21st.

7:06

You can see each of those topic areas has its unique NOFO website on exchange.

7:11

So make sure you use the correct link for submitting your materials.

7:16

And again, the NOFO is divided into these two phases, prototyping for phase one and pilot demonstration for phase two.

7:23

Only technologies that complete phase one will be eligible to compete for phase two, and that will be done through a down Slack project process.

7:33

Next slide please.

7:36

All right.

7:36

So let's talk a little bit about the requirements of each topic area.

7:41

Overall, we're targeting critical minerals and materials production technologies that have demonstrated promising results at the bench scale.

7:48

So we estimate that technology really this level of three to four, but also require for the development to achieve commercial viability.

7:57

And so each topic has its own specific TRL and project timelines that we'll walk through during this webinar starting just an overview of each of these topic areas.

8:11

Topic one is has a goal to prototype, recycle, prototype recycling and recovery methods from various critical material and minerals from secondary sources.

8:21

You can see the listed materials of interest here.

8:25

I won't read them out as also for topic 2, the goal is to extract and purify these elements to semiconductor grade 7 specifications and or form them into alloyed compositions or specific material presentations suitable for downstream product manufacturing.

8:42

And you can see the materials of interest there for semiconductors.

8:46

And then finally, goal, the goal of Topic 3 is to develop cost competitive the methods to extract, separate and process lithium from brine and clay sources.

8:58

All right, so now I'm going to go to each topic in a little bit more detail.

9:02

And again, all of this information can be found in the note file and we're not sharing any new information through this presentation.

9:10

Next slide, please.

9:13

All right, stop being start starting with topic one.

9:16

There are three subtopics within this topic that I'll talk about.

9:21

You can kind of come back to this and reference it.

9:25

I'm not going to repeat, you know, details on a number of words and finding it available, but what I would like to dive into is the scope of each of these subtopics.

9:36

You can see here topic 1A, let's focus on recovery from post industrial manufacturing scrap.

9:44

1B is focused on post consumer scrap and 1C is focused on a blend or a combination of multiple feedstocks.

9:54

Next slide, please.

9:57

All right.

9:58

Overall, there are some applications of interest in this topic across all three subtopics.

10:05

We're looking for translational recycling technologies that can be tailored to recover different target materials.

10:11

Projects that Co produce multiple critical minerals and materials and other valuable commodities contained in a given waste stream.

10:18

Projects that valorize by production and have a single a singular high value critical material or material mineral such as cobalt or strategic strategically important materials that can readily close the gap between domestic supply and demand such as gallium and germanium.

10:35

And then finally, improvements to refining and manufacturing processes that reduce generation of critical mineral and material waste, such as reduction or elimination of defects.

10:45

There are other deliverables for this topic and you should look at the NOFO to kind of walk through them.

10:54

So here you can see an illustration of the examples of scrap feedstocks of interest for each subtopic as well as the processes of interest as they correspond to each supply chain.

11:06

For topic one.

11:08

Again, topic 1A is really focused on post post industrial scrap and some examples here are wastewater, sludge, slag and swarf and those are defined in the no fill in the next slides.

11:21

Topic 1B is focused on post consumer scraps.

11:24

So e-waste and end of life electric drive trains are of interest.

11:29

And then also for one, CA combination of the feast sucks in either 1A and B with operational mining tailings are of interest and you can see really focus on advancing the midstream, you know, processing capabilities and the fight for recycling in this particular NOFO.

11:50

Next slide, please.

11:53

So here we have, you know, spelled out the definitions of post industrial main scrap manufacturing scrap is for the purpose of the NOFO.

12:02

So you can take a look at that some examples of those types of scrap.

12:07

But what I want to focus on this slide today is what the projects should aim to do, which is to advance processes, recover critical minerals and materials from scrap to recover and refine intermediate products or purified products from the scrap.

12:22

And then finally reduce, reduce waste generation during the production of intermediate products, refined purified products or for fabricated components.

12:32

Next slide 1B here is centered again on recovery and production of of these materials from post consumer scrap.

12:43

Again, e-waste and electric drive trains of interest here that contain permanent magnet machines, which are motors and generators and you can kind of see the definitions here.

12:53

Again, they're also in the note bow.

12:56

Just want to make a note here that post consumer lithium batteries are not of interest to this topic.

13:02

So we should not be, you should not submit an application based on that.

13:08

What you can see here on the right is a description of some of the challenges specific and broad across these different scrap feedstocks of e-waste and electric drive trains.

13:20

So these are some, you know, areas for either valorization of materials as well as specific challenges that pertain to each one.

13:29

So those are some examples of what we're looking for applications to tackle and with their innovations.

13:36

Next slide please.

13:39

First topic 1C.

13:40

Again, this is looking at a combination of feedstocks, operational 9 tailings, post industrial scrap and post consumer scrap.

13:49

And by developing a process that can refine critical materials or minerals from multiple feedstocks, we can introduce agility into the midstream of our supply chains.

14:00

You can see examples of the feedstocks here for different types of mine tailings.

14:06

We do want to note here that for this particular subtopic, you cannot target only one feedstock.

14:13

You want to look at a combination and when we talk about operational mine tailings, fossil fuel derived tailings or legacy mine tailings are not of interest for the subtopic.

14:24

Next slide, please.

14:27

OK, Now we'll move on to topic Area 2.

14:30

Again, this is about processing processes to refine an alloy gallium, gallium nitride, germanium and silicon carbide.

14:39

This is going to be a useful thing to return to and also the NOFO to look at the details for project timelines, funding and all that good stuff.

14:49

A little bit more about this topic is that it's really focusing on prototyping initiatives for processes that can take primary or secondary feedstocks, extract and purify the elements into semiconductor grade specifications and or form them into alloyed compositions or specific material that is suitable for downstream product manufacturing.

15:10

As you can see on this table, this is showing the US capacity to support demand for each of the materials of interest.

15:20

The dark orange is really where we have limited capacity.

15:23

This kind of lighter yellow orange is low capacity and then green is medium to high capacity.

15:31

And so proposals to this topic area should clearly identify a specific gap in the US supply chain for that material and then how the proposed innovation will address that gap.

15:44

All right, so I'll wrap up here and now I'll pass it over to Alex to dive into Topic 3.

15:51

Thank you, Helena.

15:53

Hello, everyone.

15:54

I'm Alex Priestischeff, I'm from the Department of Energy's Office of Geothermal, and I am going to walk through topic Area 3 with everyone.

16:02

Just a quick awareness on topic area 3.

16:05

Subtopic A is funded by AMTO and Subtopics 3B and 3C are funded by the Office of Geothermal.

16:14

Topic area three overall looks at the cost competitive direct lithium extraction, separation, processing, exploration and Co production.

16:24

Next slide, some quick notes here.

16:26

Some takeaways for topic area 3 only.

16:30

Applicants are permitted to submit one application under each subtopic area and applicants are not allowed to submit multiple applications under the same subtopic.

16:43

So for example, University A can submit one application under each subtopic.

16:50

You cannot submit 2 under subtopic AB or C.

16:55

And then the second Quick note for everyone is DOE federally funded research and Development Centers or FFRDCS national labs may apply as the prime applicant under topic areas 3B and 3C only.

17:13

And so now we're going to jump into more detail on the subtopics, next slide, please.

17:19

And then once I finish, I'll hand it over to Will Handy, who's going to walk through more of the overall application process for everyone.

17:27

So 3A in this subtopic, we're looking for applications, applications focused on de-risking technologies with the ultimate goal of reducing the cost of producing lithium domestically.

17:40

Proposal should focus on prototyping DLE technologies that demonstrate a clear pathway to cost competitive lithium production in the US and can use feedstocks for example like geothermal brines, brines from oil and gas producing fields such as the snack over formation or other produced waters.

17:59

Projects should prioritize advancing our advancements that improve economic viability by reducing chemical intensity, enhancing chemical reuse, lowering capital and operating cost, and or improving energy and water efficiency.

18:15

DLE technologies may include but are definitely not limited to absorption, ion exchange, membranes, electrochemical, magnetic or a combination of all of those technologies.

18:27

Other DLE technologies that show significant potential for cost reduction compared to the current state of DLE technology approaches are also of interest.

18:39

Next slide.

18:41

So jump into 3B which is advancing pre and post treatment and the disposal technologies for direct lithium extraction and then under this subtopic, we are seeking applications that address pretreatment and the post treatment of geothermal brines that increase selectivity, yield and purity of the DLE process and reduce the steps needed to produce a battery grade lithium product.

19:11

Applications must also address removal or reduction of materials that directly affect the selection of lithium during the extraction process and or reduce the post treatment of lithium material to achieve a battery grade product.

19:25

I want to focus on projects within this sub topic to clarify a few things.

19:35

We're looking for projects that demonstrate reducing the number of steps needed to pretreat or post treat geothermal brine to achieve market ready battery grade product, reduce the cost of pretreatment technologies, reduce or reuse water, reagents and other energy consumption, ensure pretreatment technologies can integrate with downstream direct lithium extraction technologies, ensuring all economic minerals are extracted from the geothermal brine and documenting proper disposal of materials post mineral extraction.

20:14

Next slide and then now for topic subtopic 3C where we're focusing on the exploration and characterization of critical materials and rare earth elements from volcanically hosted geothermal systems and applications Under this subtopic must explore and characterize critical materials and rare earth elements of economic quantities found in geothermal brines that are hosted in volcanic systems and address what economic critical materials and or rare earth elements are found in a geothermal resource.

20:52

And what are the quantities, what controls the concentration of these critical materials or rare earth elements?

21:00

What and what are the potential sources?

21:02

What controls the solubility and what transports, what are the transport mechanisms?

21:07

So how are these minerals or rare earths getting into the geothermal brines?

21:13

How fast will these resources decrease over time due to the Co production of geothermal power or direct use generation and the extraction of these critical materials in rare earths?

21:25

And what is the size and nature of the geothermal resource and what are the potential geothermal power or direct use applications at this geothermal site?

21:35

And now I will go ahead and pass it over to Will, who will talk about Phase 2.

21:41

Great.

21:42

Thanks, Alex.

21:43

I'm Will Handy and I'm a technical project officer here at AMPTO.

21:47

That means I leave the science to Helena and Alex.

21:50

I focus on processes, procedures and project management.

21:54

I'm going to start with a brief overview of the second phase of this NOFO.

21:59

This is a unique NOFO and that we are operating it in two phases.

22:02

Helena and Alex just walked you through the three topic areas for phase one, which is the prototyping phase.

22:08

Phase two advances that work to pilot scale demonstrations near the end of phase one.

22:13

We will select up to four projects from phase one through a down selection process, which is unique to this notebook.

22:20

This slide outlines the eligibility of Phase one projects for Phase two funding, which is also outlined fully in the NOFO document.

22:27

Importantly, I'd like to point out that Phase 2 will require 50% cost share, an increase from the 20% cost share minimum for phase one.

22:37

All right, now I'm going to talk a bit about submission details and what each submission requires.

22:45

This is the most important part of the presentation.

22:48

As Helena already mentioned, if there's one thing you get, this is it.

22:51

Or there's one thing you get, this should be it, which is that all topic areas require of letter of intent due on April 21st.

22:59

I'm going to say that again, all topic areas require a letter of intent due on April 21st.

23:05

If you do not submit a letter of intent, you cannot apply to the full NOFO.

23:10

This is unique.

23:10

Some NOFOs do not require letters of intent, but this one does, so please make sure you submit one if you intend to apply another unique thing which Elena mentioned on an earlier slide.

23:19

Each topic area has its own deadline for full applications.

23:23

All deadlines for letters of intent and full applications are due at 5:00 PM Eastern Time on the date that they are due.

23:34

We anticipate notifying selectees in late summer of this year and awarding them in the fall or winter.

23:40

The estimated.

23:41

Performance for awards is December 20, 2026 through December of 2029.

23:47

Of course, timelines are tentative and subject to change.

23:53

All right, now let's talk about the means of submission
lettersofintentandfullapplicationsmustbesubmittedthroughexchange@eere-exchange.energy.gov.

24:04

It's important to note that there are three different Exchange web pages for this NOFO.

24:08

There is one page for each topic area.

24:11

You must submit your letter of intent and full application to the correct topic area web page.

24:17

The Exchange web pages for this NOFO all show the topic area at the top of the page and include links to the other topic areas in case you are in the wrong one.

24:27

CMEI will not review or consider applications submitted through other means.

24:32

That's important.

24:33

We have already received some letters of intent through the e-mail address and that's those will not be reviewed.

24:37

So make sure you submit your letters of intent and applications through the website.

24:42

For questions related to the Exchange registration and application process, you can e-mail us at eere-Exchangesupport@hq.doe.gov.

24:51

All right, Letters of intent.

24:56

The application process includes 2 submission phases, a letter of intent and a full application.

25:02

As I mentioned earlier, and I'm repeating again, the letter of intent deadline is April 21st, 2026 by 5:00 PM Eastern Time.

25:10

It's very important.

25:11

If you do not submit a letter of intent, you cannot submit an application.

25:14

There's no limit to the number of letters of Intent that can be submitted, but Please ensure that you use the exact same lead organization name for all letters of intent that are submitted from 1 entity.

25:25

I'll note here that you are not obligated to submit a full application if you submit a Letter of Intent, and also the DOE does not provide feedback to Letters of Intent.

25:37

For those of you going through this process for the first time, the Letter of Intent is a web form on the DOE Funding Opportunity Exchange website.

25:45

It's not an actual letter that needs to be attached and uploaded.

25:48

This slide outlines the process for uploading your Letter of Intent along with all the needed requirements to do so.

25:54

You can also refer to the NOFO Document Part 1, Section 4C for a full process explanation.

26:03

OK, Applicant eligibility.

26:05

We've included applicant eligibility requirements here for you to refer to.

26:09

For more detail about eligibility requirements, please refer to NOFO Part 1, Section 2A.

26:14

OK, full applications.

26:19

Now, I'll walk you through the process of completing and submitting your full application.

26:25

Some of the information we've already covered, including the unique topic area, application deadlines.

26:30

I will note that applicants should allow at least one hour to complete the full application submission process on the Exchange web page and at least 30 minutes to complete the letter of intent process.

26:42

Also, we strongly encourage that you submit all required documents at least 48 hours before the submission deadline in case you run into IT issues or other unforeseen delays.

26:55

A Limitations on the number of applications eligible for review.

26:58

So Alex indicated during her explanation of topic area 3 that there were specific specifications regarding the number of applications that can be submitted per topic and subtopic.

27:07

I wanted to zoom in on that a bit more here to preempt any questions we might receive about this.

27:12

So as you can see in this chart, for topic area 1 and topic area 2, for all subtopics, you are limited to 1 full application per topic area.

27:23

However, for topic area 3A3B and 3C, you are limited to 1 full application per subtopic area.

27:31

That's an important distinction.

27:34

I also want to reiterate that that limitation does not apply to letters of intent.

27:37

You can submit as many letters of intent as you want.

27:43

All right, Technical volume content.

27:45

This side outlines the breakdown of content that should be included in the technical volume in your full application.

27:53

All it's important to note that the 25 page limit for the technical volume for the full application process in exchange.

28:04

Most notably on this slide, you will not be able to start the full application submission until the letter of intent deadline has passed.

28:15

For non responsive applications, we wanted to outline the types of applications that will be deemed non responsive.

28:21

These applications will not be reviewed or considered for an award for application specifically not of interest.

28:30

Please review this slide to ensure that any potential project applications fall within the intended scope of interest for partnering.

28:41

We are compiling A Teaming Partner List to facilitate the information, or sorry, to facilitate the formation of project teams for this NOFO.

28:50

This list allows organizations that may wish to participate on an application to express their interest to other applicants and to explore potential partnerships.

28:58

The Teaming Partner List is available on the DOE Funding Opportunity Exchange website and will be regularly updated to reflect new teaming partners who provide their organizations information.

29:11

Statement of substantial involvement.

29:14

We expect to make awards under this NOFO as cooperative agreements.

29:18

Cooperative agreements are different from grants and if they include substantial involvement by the DOE, that means the DOE staff will be involved in the direction and possible redirection of the technical aspects of the project typically handled from our technology managers like Helena and Alex.

29:37

Cost sharing requirements.

29:39

Again, I'll reiterate that project cost share must be at least 20% for Phase one project costs for initial research and development tasks and then 50% of the Phase 2 project costs if you're selected for Phase two demonstration and commercial application.

29:55

Applicants that do not meet the minimum required cost share will be deemed ineligible during the initial compliance review and will not be further reviewed.

30:06

Cost share contributions This slide outlines some requirements for cost share.

30:10

Most importantly for your application, ensure that all cost share is specified in the project budget and meets the 20% minimum requirement to ensure your application is eligible for review.

30:21

As Phase One Application merit review and selections, we'll start with the standards for application evaluation.

30:34

Applications that are determined to be eligible will be evaluated in accordance with this NOFO and the guidance provided in the DOE Merit Review Guide for Financial Assistance, which was effective as of October 1st, 2020.

30:47

It's available at the link provided on the slide.

30:50

Explore NOFO Part 1, Section 6D for other selection factors and NOFO Part 2, Section 6A for standard evaluation and selection processes.

31:05

For more on standard evaluation and selection processes, this slide goes into a bit more detail about the selection process.

31:12

I encourage you to refer to the full application section of the NOFO document.

31:17

For now, I'll highlight the merit review criteria for Phase one applications.

31:24

So here is that merit review criteria.

31:28

They're split into 4 criterion #1 being technical merit, innovation, and impact at 45%, Criterion 2 being Market Transformation Plan at 15%, criterion 3 being Project Work plan, Project Management and Risk Mitigation at 30%, and criterion 4 being team and resources at 15%.

31:48

I'm going to touch briefly on program policy factors.

31:54

This slide and the following slide outline some of the nitty gritty program policy factors.

31:59

We've included this so that prospective applicants can be aware of the following program policy factors, which selection officials may consider when reviewing applications.

32:09

I won't read them all for you, but we want to make sure you're aware of them.

32:13

And the next slide is more of those same program policy factors.

32:18

Again, I'm not going to read through these now, but they're listed here as well as it in the NOFO document in Part 1, Section 4D.

32:28

All right, questions.

32:30

So as we mentioned before, we can't accept questions on this webinar.

32:33

And so if you have any questions for us, please feel free to submit them to our e-mail at CMM acceleratornofo@ee.doe.gov.

32:45

All Q&A S and questions that are submitted to that e-mail address will be posted on the DOE Funding Opportunity Exchange website along with this webinar recording and presentation slides.

32:58

Note that the Q&A is the only way we can communicate with you other than through this webinar, so please check it regularly for updates.

33:05

We'll do our very best to respond to questions submitted to the e-mail box within three business days, unless a similar question has already been posted on the website.

33:14

If you have any problems with the DOE Exchange platform, please reach out to exchangesupport@hq.doe.gov instead of the Noho e-mail address.

33:26

So that's all from us.

33:28

We look forward to answering any questions that we received via e-mail.

33:31

We look forward to reviewing your letters of intent and hopefully working with many of you on the projects selected as part of this note, though.

33:37

Thank you so much for your time.