



U.S. DEPARTMENT OF
ENERGY

Office of
Science

Informational Webinar:

Energy Frontier Research Centers (EFRCs) Funding Opportunity Announcement (FOA) DE-FOA-0002653

| | |
|--|---|
| FOA Issue Date | December 21, 2021 |
| Submission Deadline for Pre-Applications | February 15, 2022 at 5:00PM Eastern Time A Pre-Application is required |
| Pre-Application Response Date | March 22, 2022 |
| Submission Deadline for Applications | May 3, 2022 at 11:59PM Eastern Time |

Andrew Schwartz
Office of Basic Energy Sciences
January 19, 2022

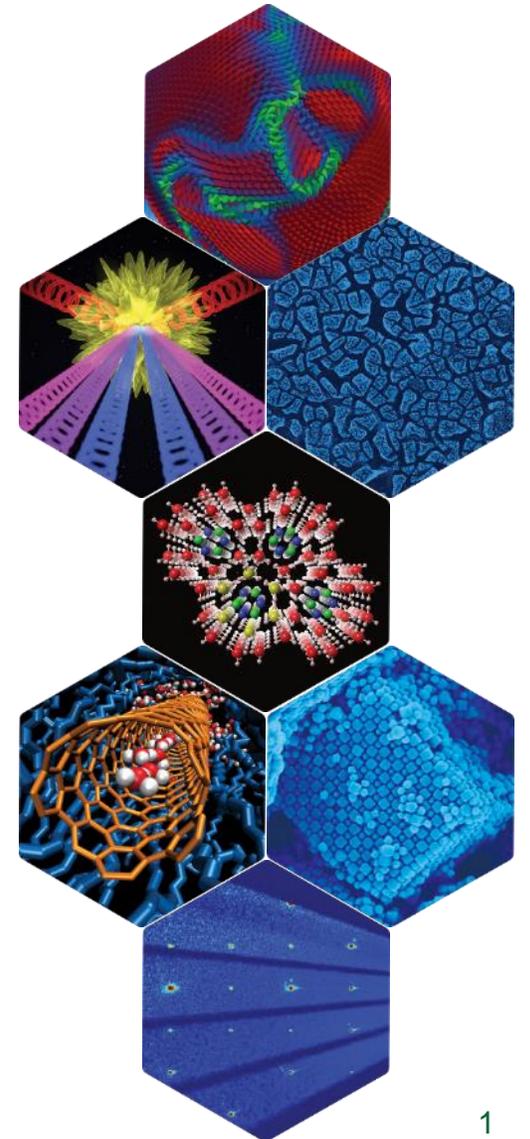
Disclaimer: This presentation summarizes the contents of the FOA. Nothing in this webinar is intended to add to, take away from, or contradict any of the requirements of the FOA. If there are any inconsistencies between the FOA and this presentation or statements from DOE personnel, the FOA is the controlling document.

Basic Energy Sciences Mission

To understand, predict, and ultimately control matter and energy at the electronic, atomic, and molecular levels

BES fulfills its mission through:

- ▶ Supporting **basic research** to discover new materials and design new chemical processes that underpin a broad range of energy technologies
 - ❖ **Critical role in clean energy research**
- ▶ Operating **world-class scientific user facilities** in x-ray, neutron, and electron beam scattering as well as in nanoscale research
- ▶ Managing **construction and upgrade projects** to maintain **world-leading** scientific user facilities

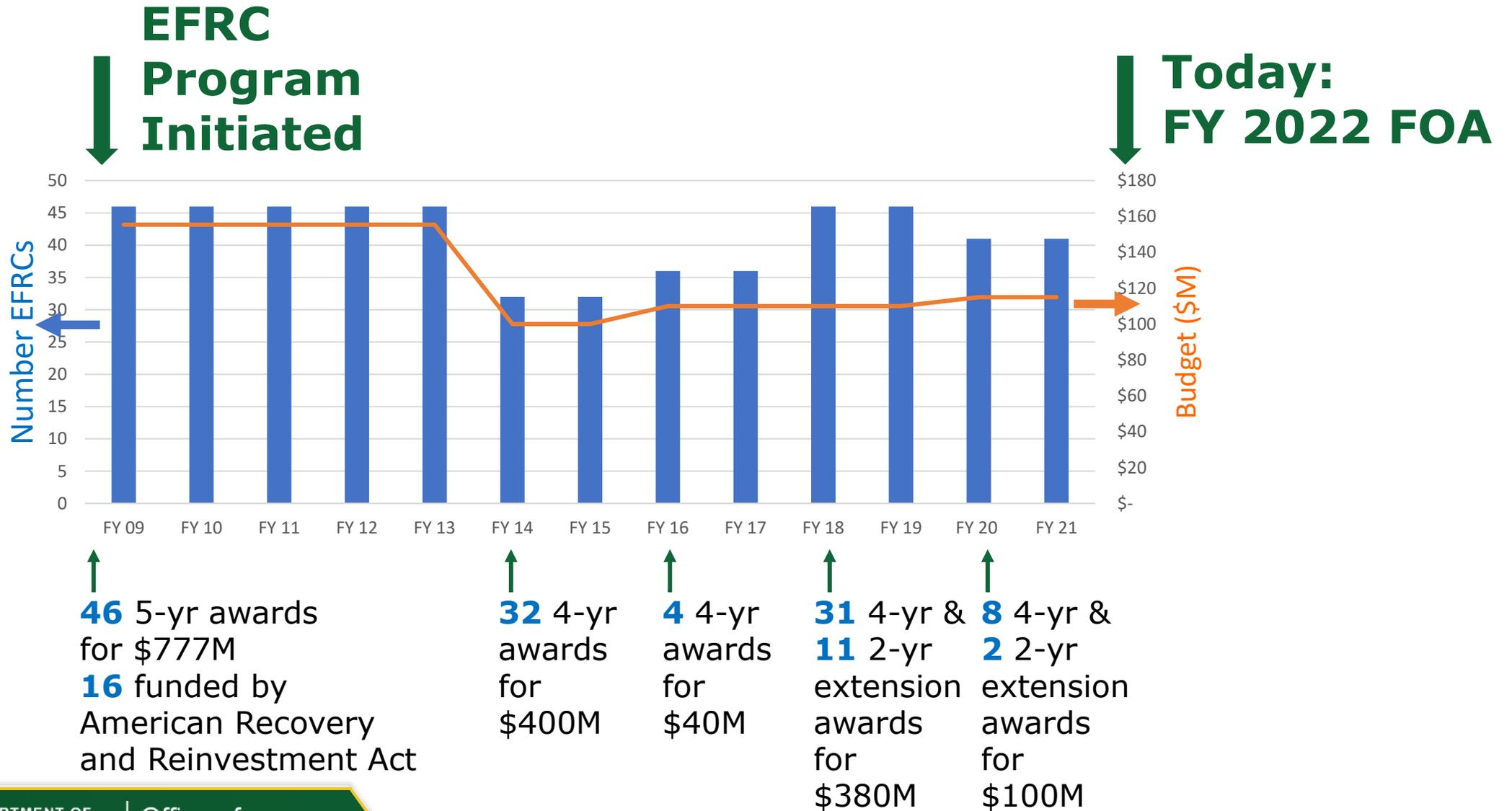


Energy Frontier Research Centers (EFRCs)



- **HISTORY:** Based on strategic planning workshops since early-2000s with over 2,000 participants
EFRC Program was proposed in 2008; funding started in 2009
- **ATTRIBUTES:**
 - Coupling “**basic research needs**” for energy applications and “**grand-challenge science**”
 - Bringing the academic community together with the national labs to enable high quality **collaborative research** with relevance to energy science and technology
 - Demonstrating **scientific productivity and world leadership**, and making progress in ways that would not have been likely through individual efforts
 - Using **effective communications** to tell an inspiring story concerning the value of fundamental research that supports clean energy and sustainability

EFRC Awards History

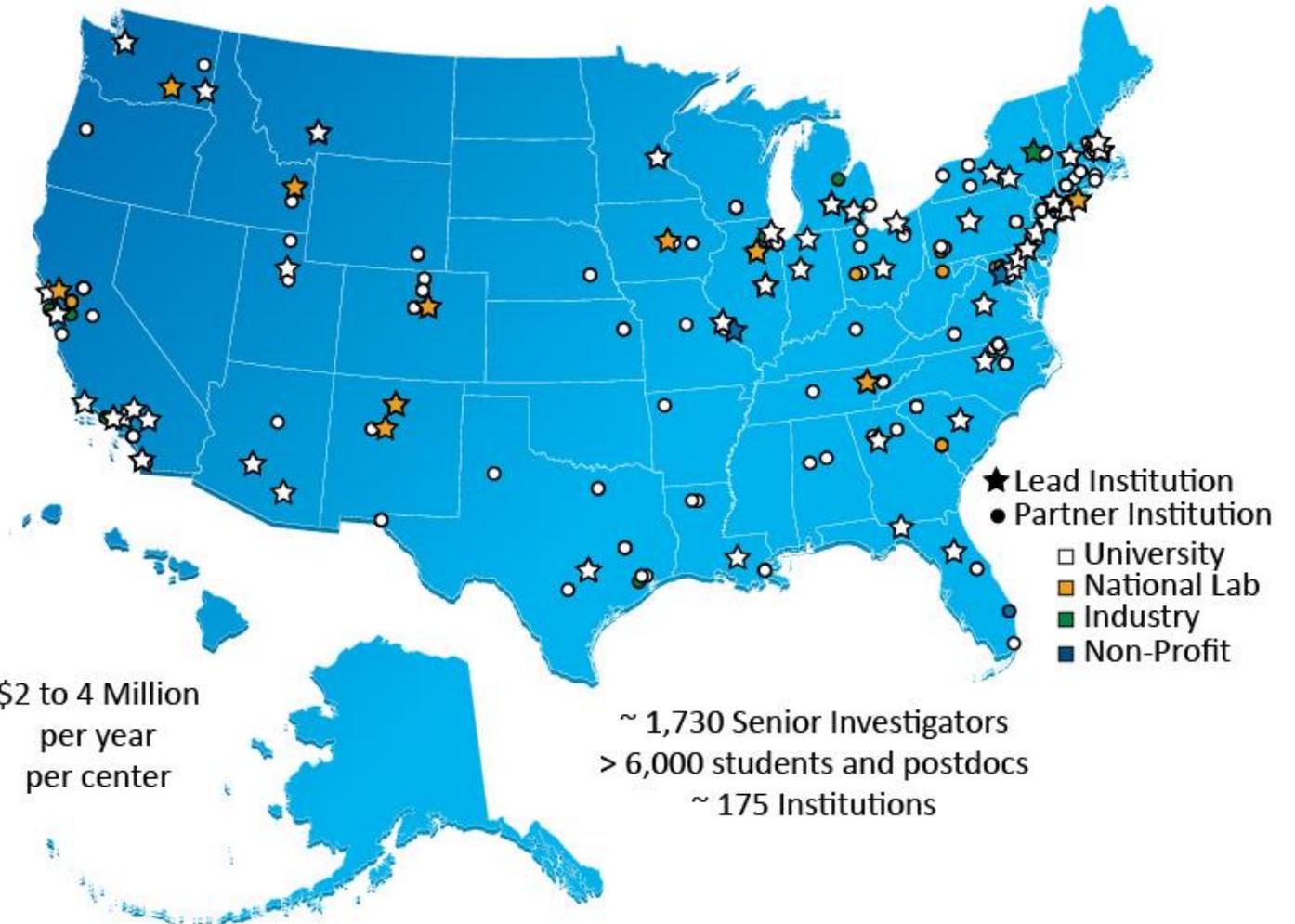


Cumulative EFRC Awards (2009-2021)

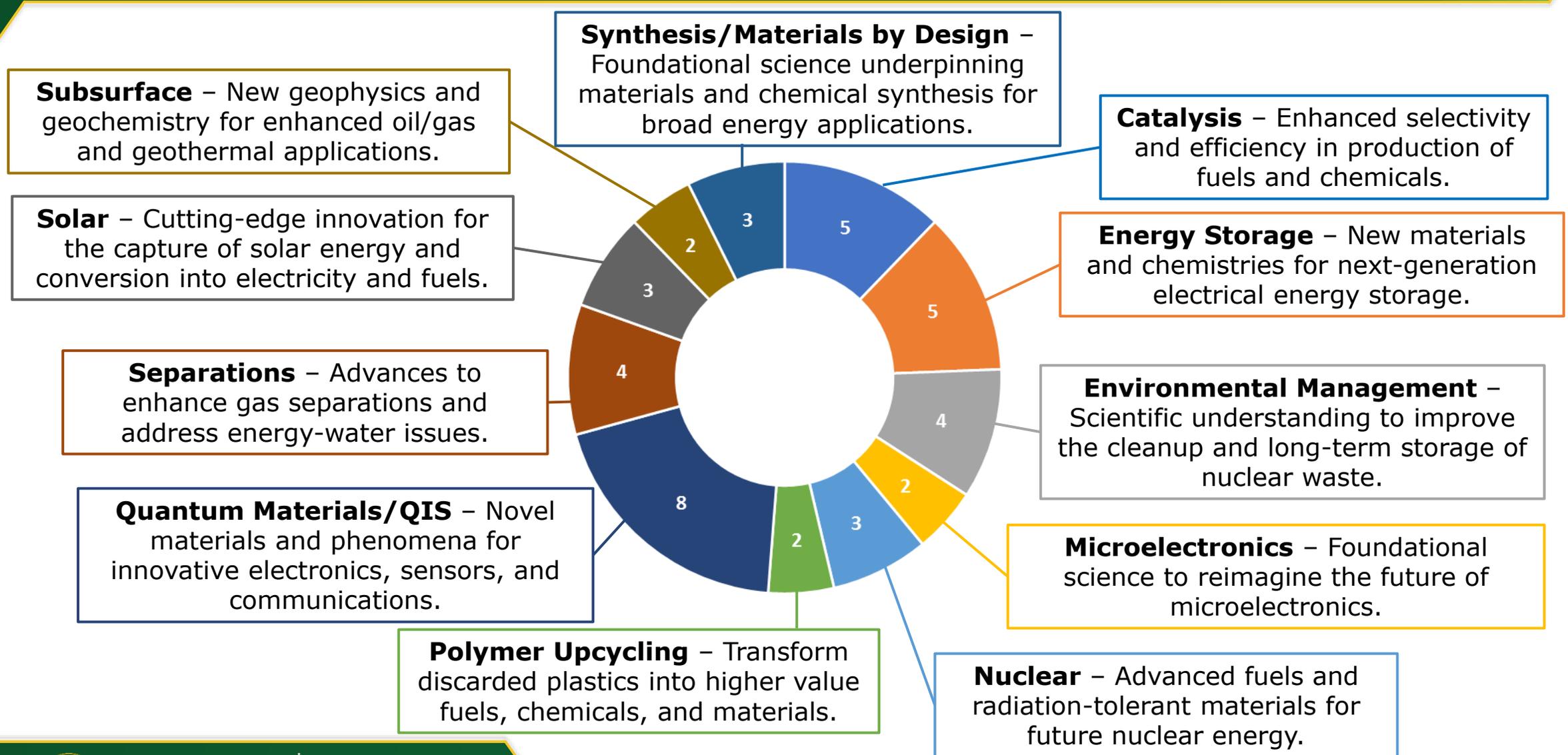
88 EFRCs in 41 States + D.C. since 2009

Current EFRC Members

- ~ 650 senior investigators
- ~ 1,575 postdoctoral researchers, graduate students, undergraduate students, & technical staff
- 110 institutions in 33 states

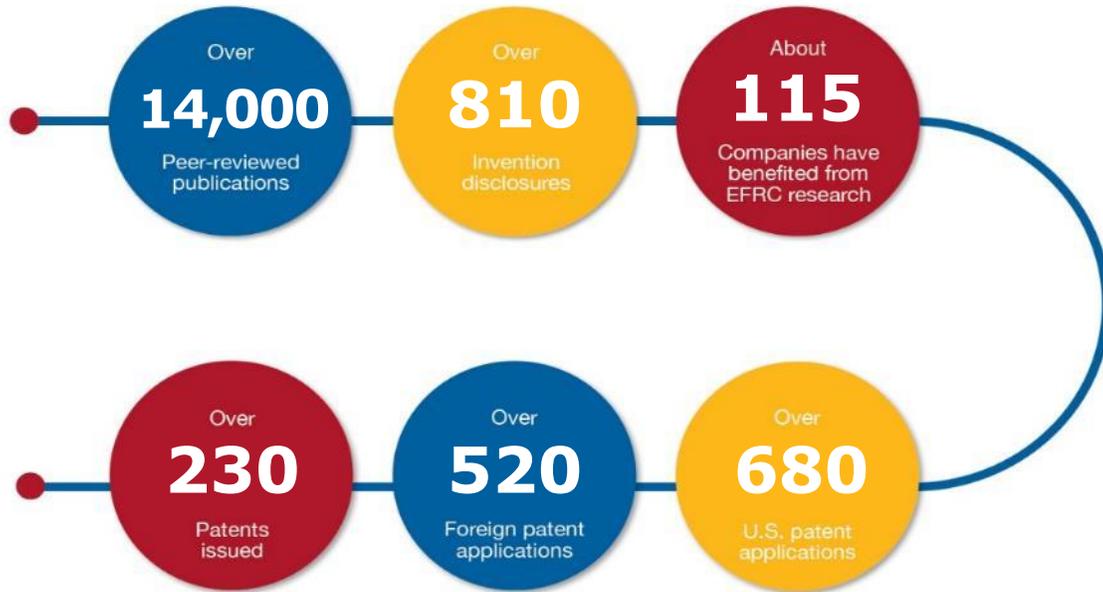


Topical Distribution of 41 Current EFRC Awards

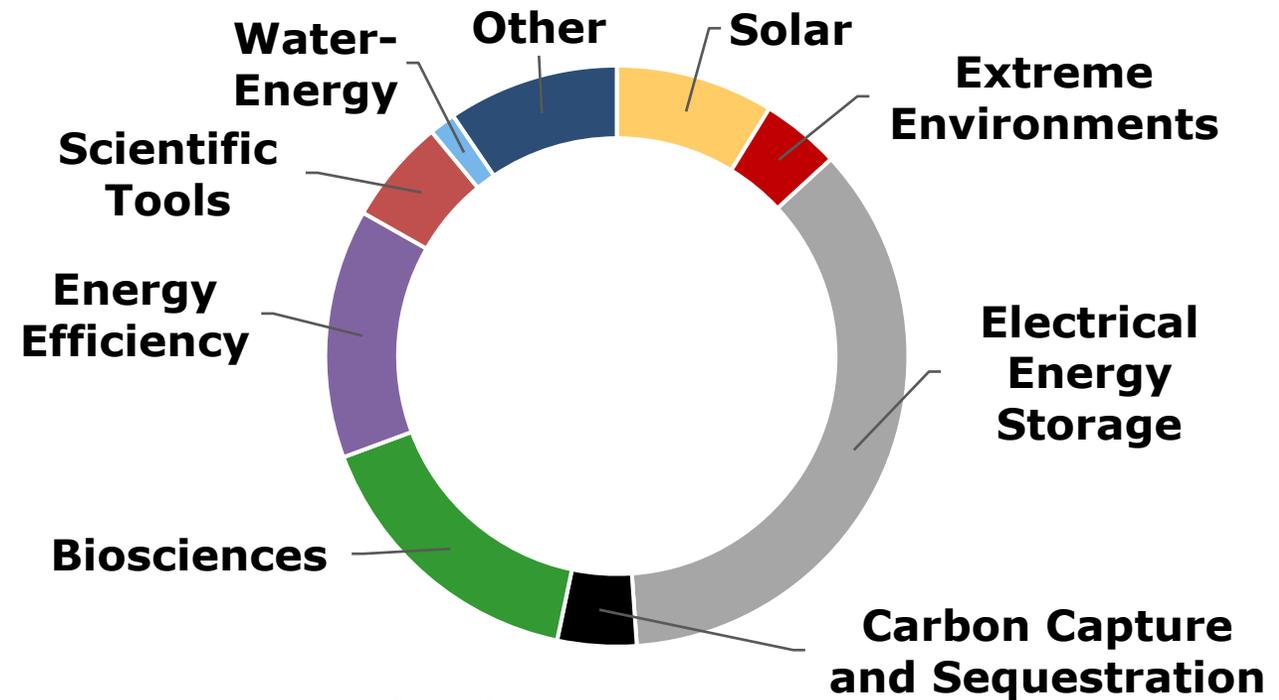


EFRC Impact – Publications, IP, Interactions (May 2021)

EFRC IMPACT BY THE NUMBERS



DISTRIBUTION OF COMPANIES THAT HAVE BENEFITTED FROM EFRC RESEARCH



~34% Start-ups
~20% Mid-sized companies
~46% Large companies

“Good Practices” for a Successful EFRC



A compelling mission
that everyone understands
and embraces

Adaptive management
to evaluate progress and redirect
resources in response to promising
new opportunities

High-risk research
that would not be attempted by
individual investigators

Synergy
among researchers working toward
collectively developed objectives

Accelerated success and failure
enabling adjustments and key decisions
that lead to the most impactful science

Training the next generation of scientists
in collaborative research, including students,
postdocs and other early-career scientists

NOTE: These are not the Merit Review Criteria

Energy Frontier Research Center FY 2022 FOA: Scientific Scope (See Sec. I of the FOA)

- ▶ Applications from multi-disciplinary teams will be required to propose both **discovery science** and **use-inspired basic research** that addresses priority research directions and opportunities identified by a series of BES workshop and roundtable reports
- ▶ The FOA emphasizes the following Science Focus Areas:
 - ❖ **Science for Clean Energy** (Carbon-Neutral Hydrogen, Liquid Solar Fuels, Nuclear Energy, Catalysis, Energy Storage, Energy/Water, Subsurface, Carbon Capture, Solar Energy)
 - ❖ **Science for Advanced Manufacturing** (Transformative Manufacturing, Chemical Upcycling of Polymers, Microelectronics, Synthesis Science)
 - ❖ **Other Priority Research Areas** (Quantum Information Science, Quantum Materials, Transformative Experimental Tools)
- ▶ EFRCs will continue to support cross-DOE initiatives, including the Energy Earthshots (<https://www.energy.gov/policy/energy-earthshots-initiative>)
- ▶ See Sec. I of the FOA for links to the workshop and roundtable reports

Energy Frontier Research Center FY 2022 FOA: Key Elements

- ▶ FOA solicits both new and renewal applications
- ▶ Eligible Applicants: All types of domestic entities, including for example, universities/colleges, non-profit organizations, for profit organizations, DOE National Laboratories (see Sec. III of the FOA)
 - ❖ Other Federal agencies or FFRDCs may participate as partners (not lead institution)
- ▶ All applications are expected to involve multi-disciplinary research teams; multi-institutional applications are encouraged
- ▶ FOA encourages applications led by, or in partnership with, Minority Serving Institutions (MSIs)*, including Historically Black Colleges and Universities (HBCUs), that are underrepresented in the BES portfolio and applications including individuals from groups historically underrepresented in STEM

*US Department of Education lists of MSIs and HBCUs in 2021 can be found at: <https://www2.ed.gov/about/offices/list/ope/ides/2021eligibilitymatrix.xlsx> and <https://sites.ed.gov/whhbcu/one-hundred-and-five-historically-black-colleges-and-universities/> 9

Energy Frontier Research Center FY 2022 FOA: Award Information (See Sec. II of the FOA)

- ▶ **Estimated funding:** DOE anticipates that, subject to the availability of future year appropriations, a total of up to \$420 million in current and future fiscal year funds will be used to support awards under this FOA
- ▶ **Period of performance:** DOE anticipates making awards with a project period of up to four years
- ▶ **Maximum/minimum award size:** DOE anticipates that award sizes will range from \$2 million per year to \$4 million per year
- ▶ **Expected number of awards and award size:** The number of awards and award sizes will depend on the number of meritorious applications and the availability of appropriated funds
- ▶ **Types of award instruments:** DOE anticipates awarding grants, interagency agreements, and National Laboratory authorizations under this FOA

Energy Frontier Research Center FY 2022 FOA: Pre-applications (See Sec. IV.B of the FOA)

- ▶ Pre-applications are **required**, with a limit of **3 per lead institution**
- ▶ Pre-application cover page **must** include a signature from an official of the lead institution
 - ❖ For DOE/NNSA National Laboratories, this should be the Laboratory Director
 - ❖ For other applicants, this should be someone who has authority over research activities for the entire institution
- ▶ Program Managers may evaluate all or some portion of pre-applications to determine their **competitiveness within a scientific topic**. Any such review will be conducted by no fewer than three federal program managers based on the following criteria:
 - ❖ Responsiveness to the objectives and requirements of the FOA
 - ❖ Scientific and technical merit
 - ❖ Appropriateness of the proposed research approaches
 - ❖ Likelihood of scientific impact
- ▶ Reviews within a topical field will be a **comparative review** with priority given to **scientifically innovative and forward-looking basic research with the highest likelihood of success as an application**
- ▶ Applicants with the highest rated pre-applications will be encouraged to submit applications; others will be discouraged from submitting applications

Energy Frontier Research Center FY 2022 FOA: Key Dates

- ▶ Pre-application due date: February 15, 2022, by 5:00PM Eastern Time
 - ❖ Pre-applications must be submitted via the DOE Portfolio Analysis and Management System (PAMS)
- ▶ Pre-application response date: March 22, 2022
 - ❖ DOE will notify all pre-applicants about whether or not they are encouraged to submit an application
 - ❖ DOE expects to encourage at least 100 applications, with the exact number based on the pre-application review
- ▶ Application due date: May 3, 2022, by 11:59PM Eastern Time
 - ❖ Applications that have not been encouraged by DOE may be declined without merit review
 - ❖ Applications must be submitted via www.grants.gov
- ▶ DOE anticipates that award selection will be completed by the 4th quarter of Fiscal Year 2022 (July – Sept) and that awards will be made in Fiscal Year 2022

Checklist for avoiding common errors: Pre-applications

(not a comprehensive list of all FOA requirements)

- ▶ **Scope:** Address **priority research directions/opportunities** in reports referenced in Section I of the FOA; no applied research or technology development
- ▶ **Tables:** FOA requires two tables with pre-application, submitted in Excel format by email to EFRC.FOA@science.doe.gov (templates provided); pre-applications without these two tables may be discouraged without review:
 - ❖ Reports addressed by the pre-application, with priority research directions/opportunities (FOA p.15)
 - ❖ List of Individuals Who Should Not Serve as Reviewers (FOA p.15, p.51)
- ▶ **Signature:** Cover page must include the signature of an official of the lead institution
 - ❖ Official who signs should be someone who has authority over research activities for the entire institution
 - ❖ Signatures will be used to identify pre-applications that the institution supports
 - ❖ Pre-applications without institutional support **may be discouraged without review**
- ▶ Each pre-application must designate a **single EFRC Director**
- ▶ Submit pre-application **via PAMS**, not via www.grants.gov (due Feb. 15 by 5pm ET)
- ▶ **Late submissions** of pre-applications are rarely accepted (see Sec. IV.F.4 of the FOA)

Checklist for avoiding common errors: Applications

(not a comprehensive list of all FOA requirements)

- ▶ **Tables:** FOA requires three tables with application, submitted in Excel format by email to EFRC.FOA@science.doe.gov (templates provided); applications without these three tables may be declined without review:
 - ❖ Reports addressed by the application, with priority research directions/opportunities (FOA p.20, p.29)
 - ❖ List of Individuals Who Should Not Serve as Reviewers (FOA p.29, p.51)
 - ❖ Summary budget (p.20, p.29)
- ▶ **Budget:** The lead institution must request a larger percentage of the budget than each of the other institutional partners
- ▶ **Biographical sketch** and list of **current/pending support**
 - ▶ Required for each senior/key personnel; follow instructions in FOA, including the use of the NSF format; do not attach a list of individuals who should not be used as merit reviewers as part of the biographical sketch; ensure complete list of activities regardless of source of funding
- ▶ EFRC Director must be the same as on the pre-application
- ▶ Submit application via www.grants.gov, not via PAMS (due May. 3 by 11:59pm ET)
- ▶ **Late submissions** of applications are rarely accepted (see Sec. IV.F.4 of the FOA)

Where to find more information

- ▶ EFRC webpage: <http://science.osti.gov/bes/efrc/>
- ▶ FOA: <https://science.osti.gov/bes/Funding-Opportunities>
- ▶ EFRC good practices document:
<https://science.osti.gov/-/media/bes/efrc/pdf/history/other/EFRC-Ref---Good-Practices-2017-12-v2.pdf>
- ▶ This webinar is being recorded; slides and the recording will be posted on the FOA page above
- ▶ Questions about the FOA must be submitted via the FedConnect portal:
<https://www.fedconnect.net/>
 - ❖ Register with FedConnect and respond as an interested party to submit questions, and to view responses to questions

Questions & Answers

Please submit questions using Zoom Q&A window, which should be accessible at the bottom of your zoom window

If your question is not answered today, or you have additional questions, please submit via www.FedConnect.net

Disclaimer: This presentation summarizes the contents of the FOA. Nothing in this webinar is intended to add to, take away from, or contradict any of the requirements of the FOA. If there are any inconsistencies between the FOA and this presentation or statements from DOE personnel, the FOA is the controlling document.