INTRODUCTION TO ARPA-E

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Deputy Director for Technology

Thursday, October 19th 2023

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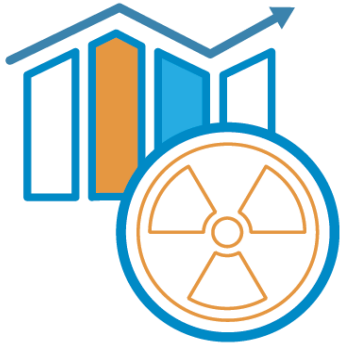
CHANGING WHAT'S POSSIBLE

ARPA-E Mission

REDUCE
imports

IMPROVE
efficiency

REDUCE
emissions



IMPROVE
radioactive waste management

IMPROVE
energy infrastructure resilience

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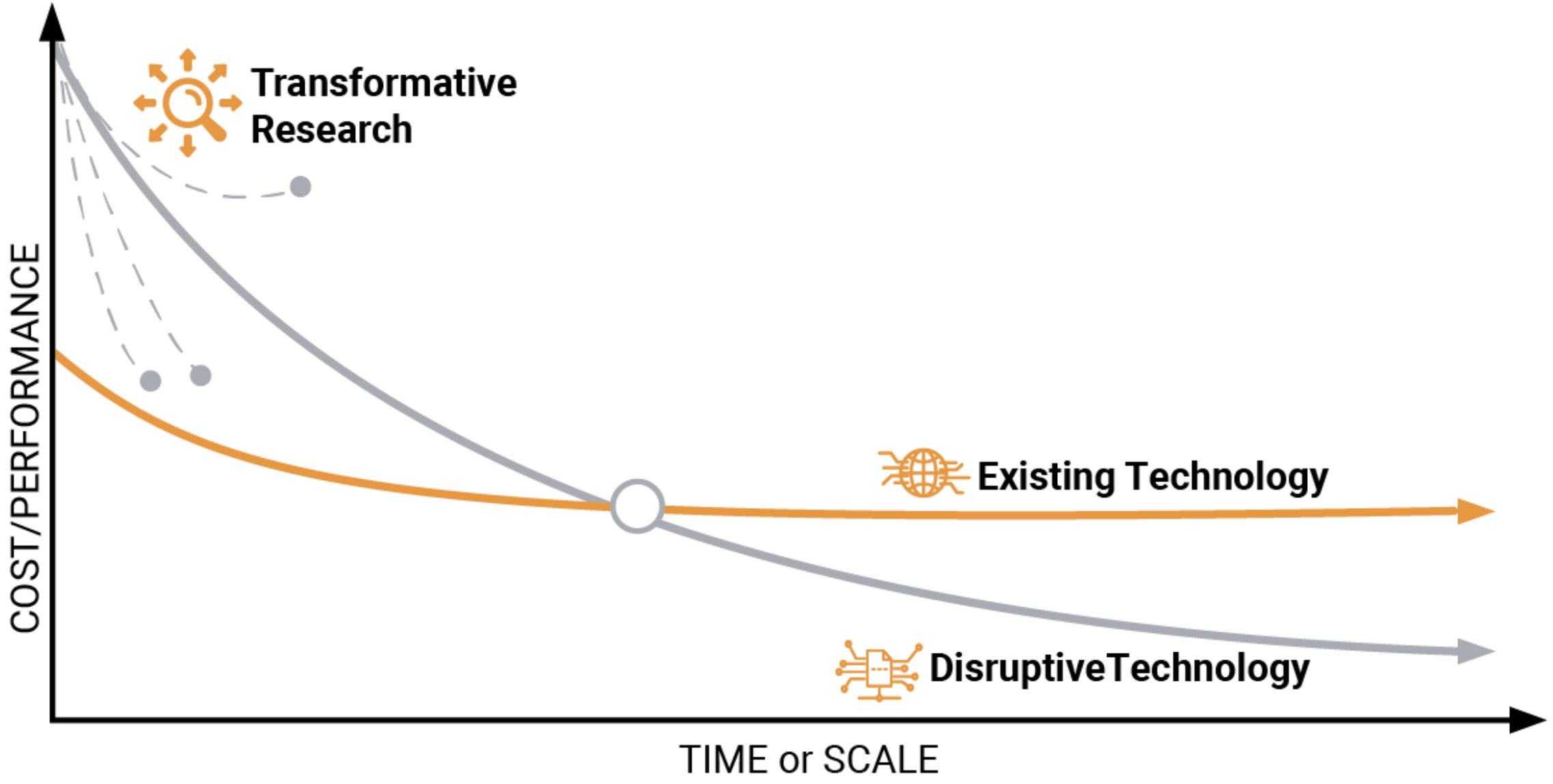

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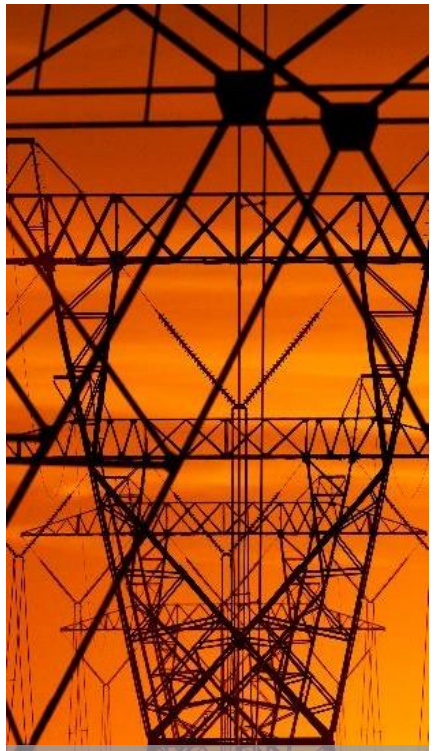
What Problems are We Trying to Solve?



Resilient energy infrastructure for the 21st century

Affordable, sustainable energy for all

U.S. economic development

American leadership in science and technology

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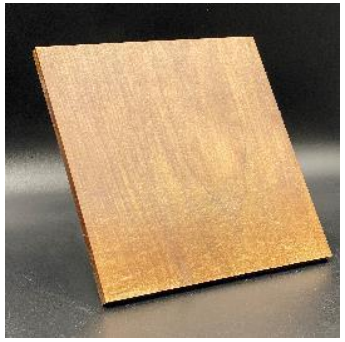
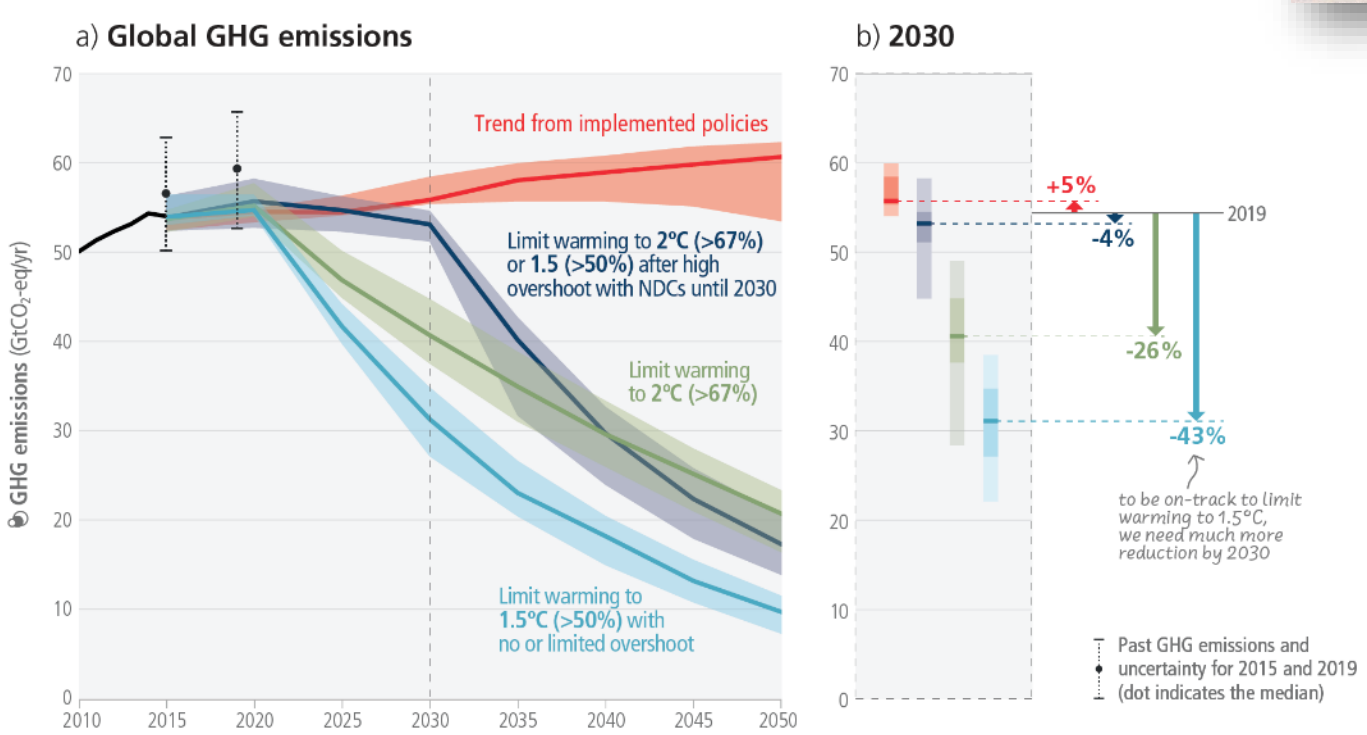
Climate Resilience and Reducing Greenhouse Gas Emissions



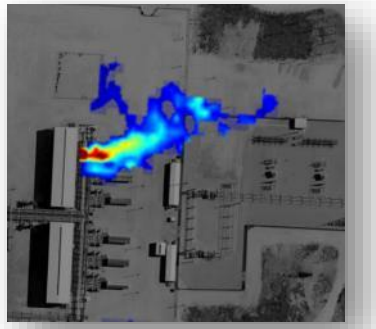
Inventwood

SkyCool



Measurement, mitigation, reduction, and removal of GHGs are needed to maximize climate resilience (Ref: IPCC AR6)

Longpath



Bridger

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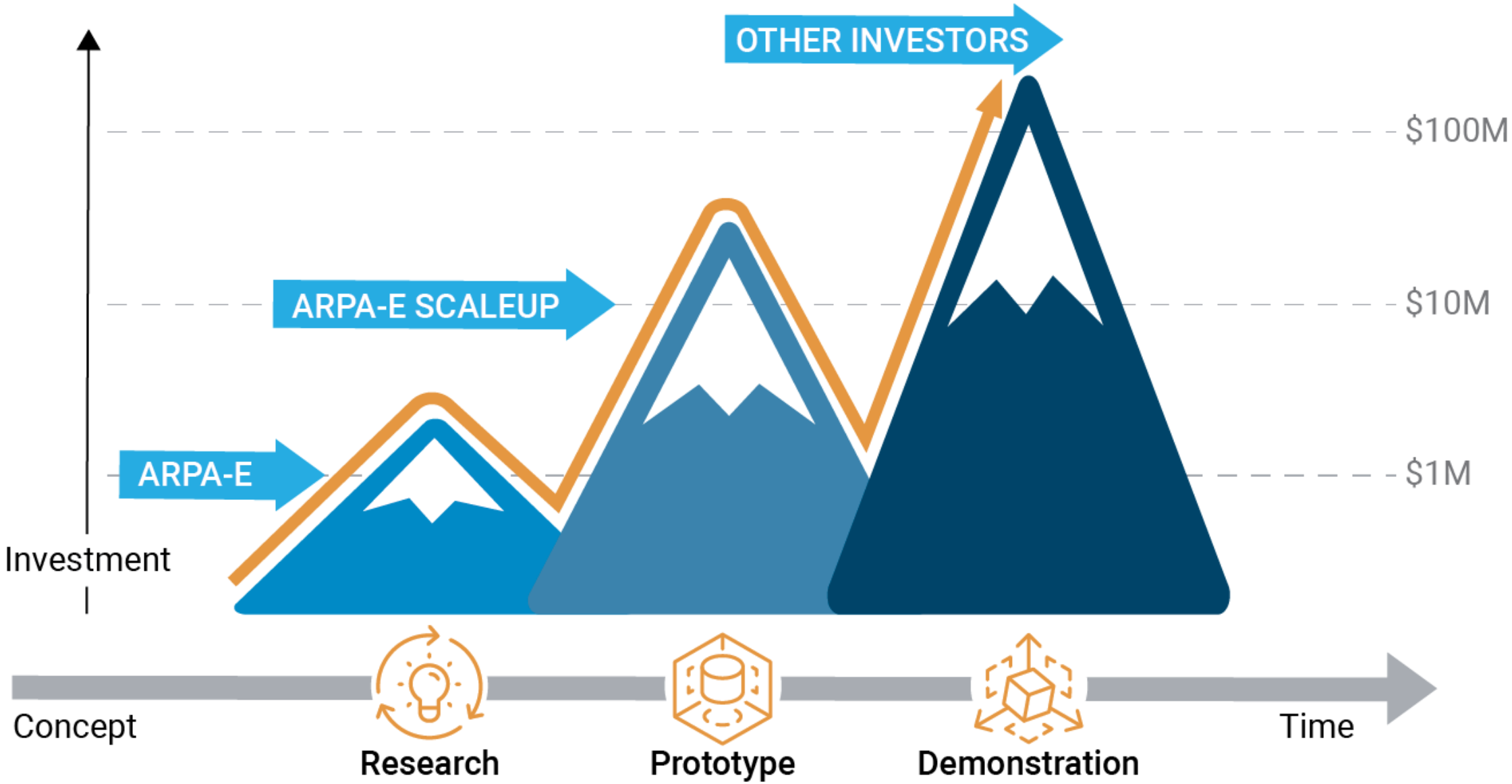
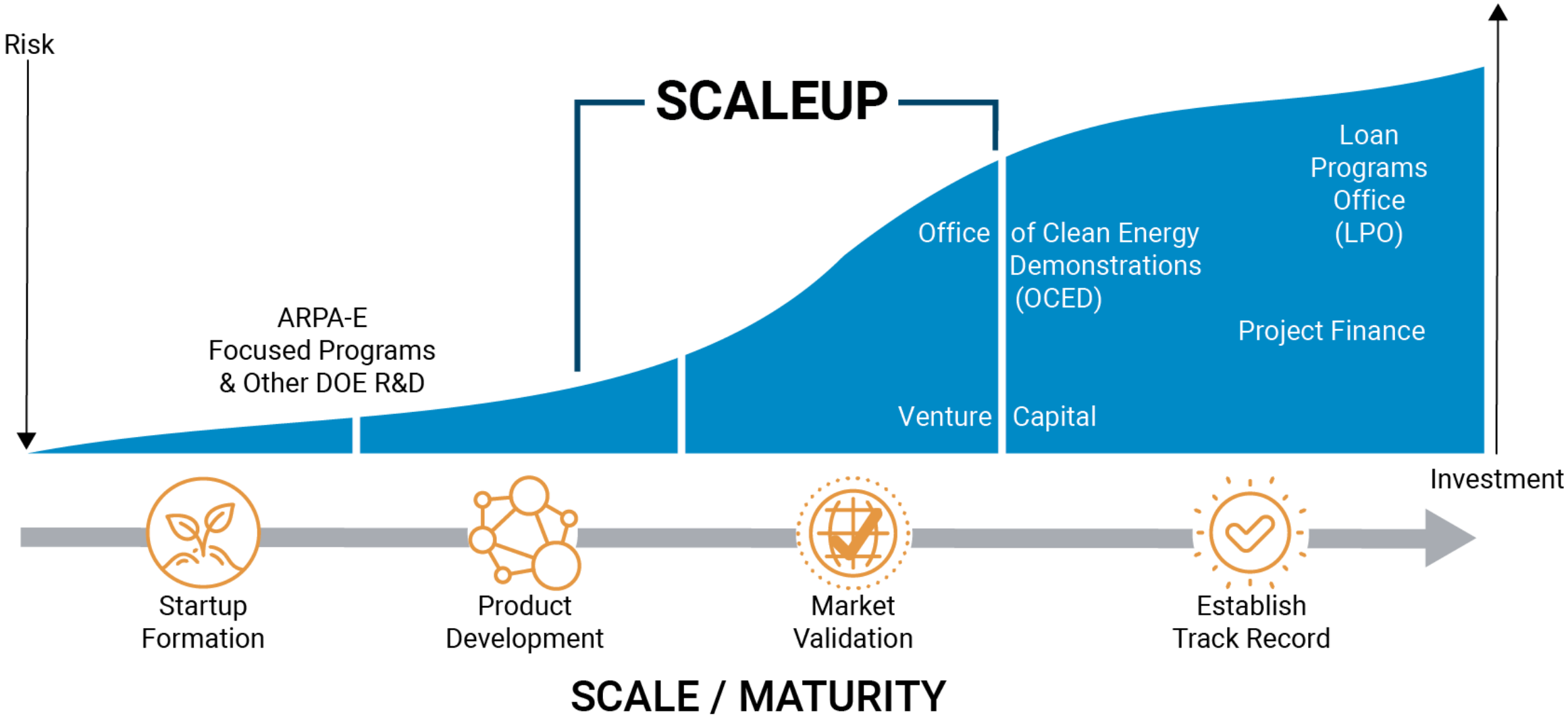
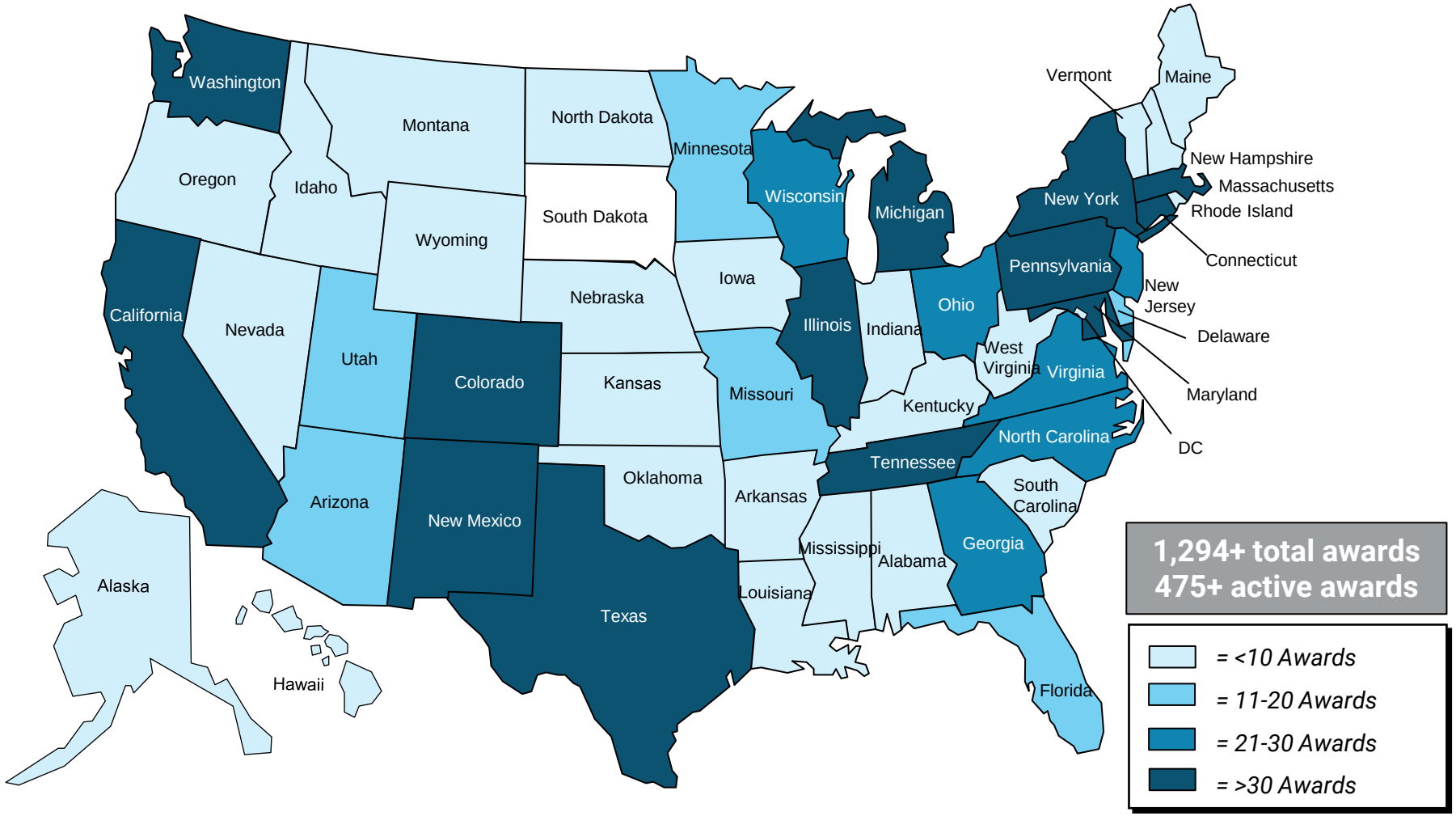
ARPA-E OPERATIONS


OTHER INVESTORS
$100M
ARPA-E SCALEUP
$10M
ARPA-E
$1M
Investment
Concept
Research
Prototype
Demonstration
Time

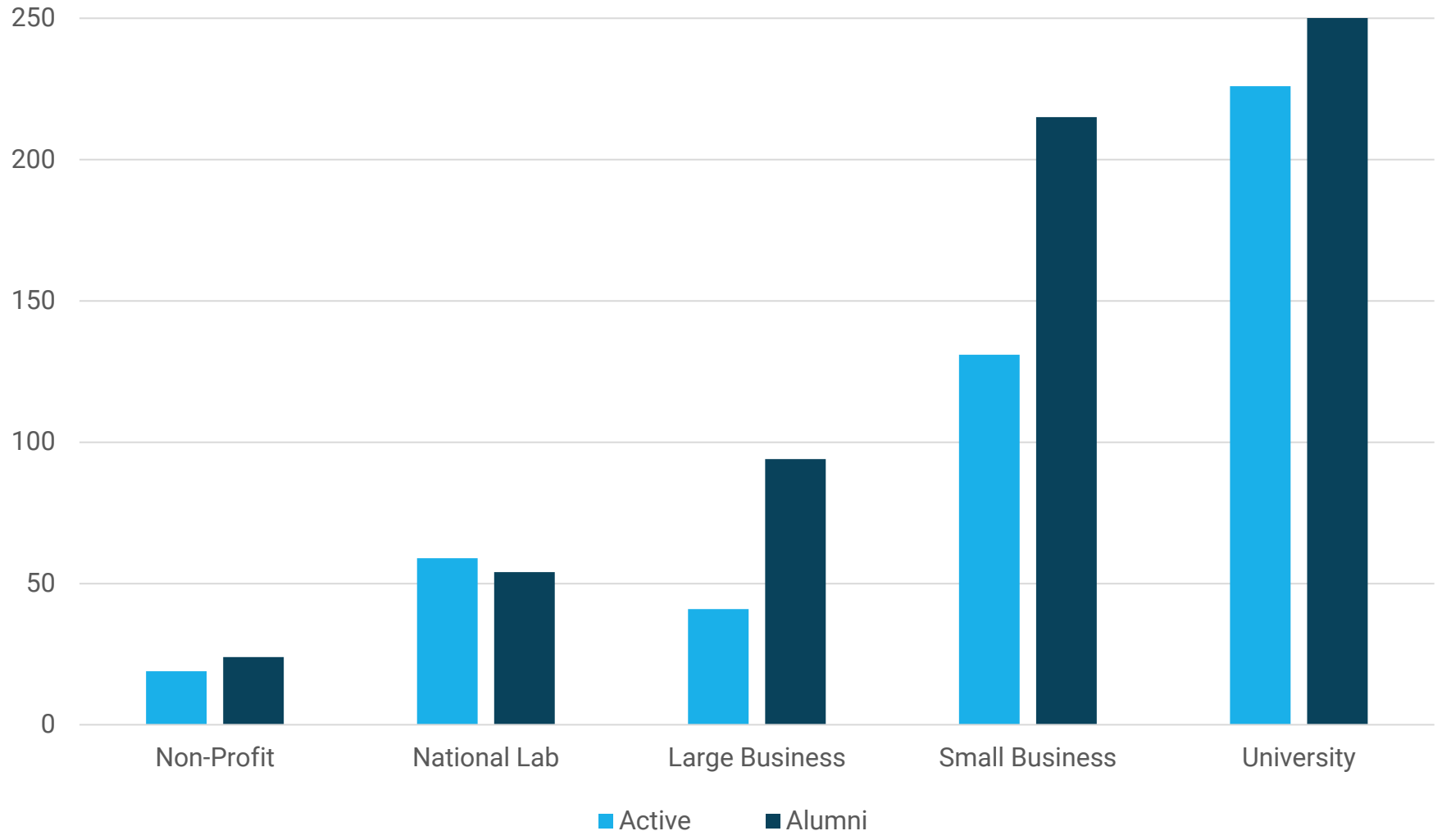

Risk
SCALEUP
ARPA-E
Focused Programs
& Other DOE R&D
Office
of Clean Energy
Demonstrations
(OCED)
Loan
Programs
Office
(LPO)
Project Finance
Venture
Capital
Investment
Startup
Formation
Product
Development
Market
Validation
Establish
Track Record
SCALE / MATURITY

ARPA-E PROGRAMS

ARPA-E Awards by State



ARPA-E Projects by Lead Organization Type



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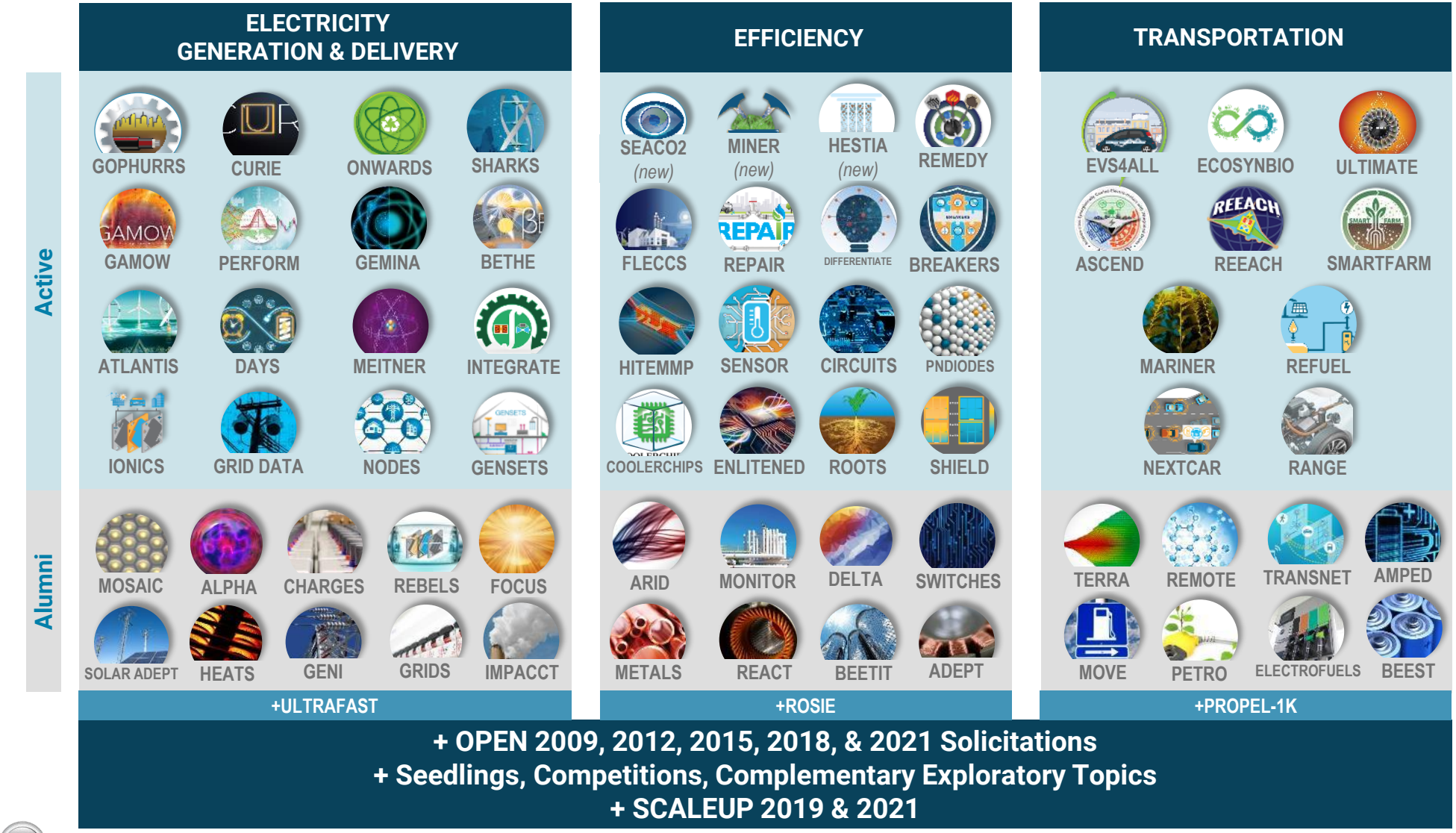
ARPA-E Program Portfolio



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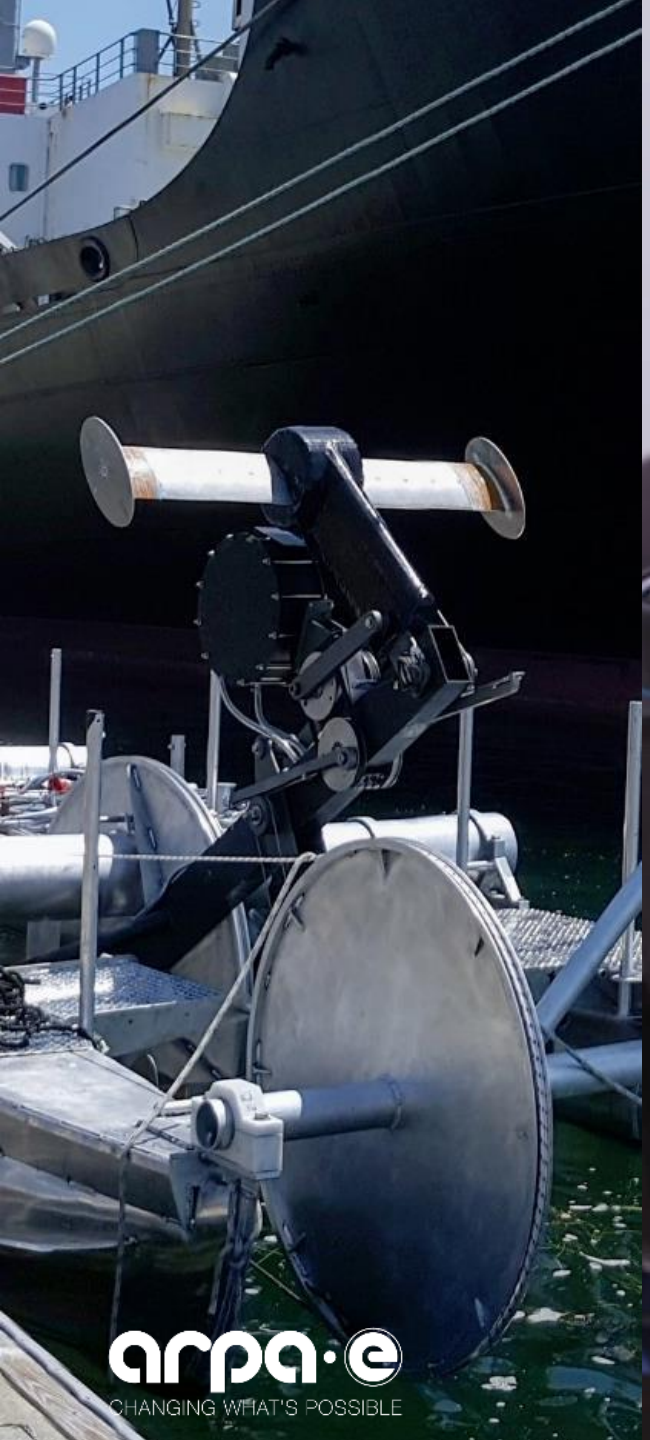


OPEN Programs

support new technologies across the full spectrum of energy applications

OPEN 2009

41 projects

$176 million investment

10 technical areas

OPEN 2012

66 projects

$130 million investment

11 technical areas

OPEN 2015

41 projects

$125 million investment

10 technical areas

OPEN 2018

77 projects

$199 million investment

13 technical areas

OPEN 2021

68 projects

$175 million investment

13 technical areas

SCALEUP

Seeding Critical Advances for Leading Energy technologies with Untapped Potential

Supports previously funded ARPA-E technologies to commercial viability

*

Enables further technology de-risking of pre-production prototypes

*

Encourages small business, company, and industry participation

*

SCALEUP 2019
9 Awardees – $70 million

*

SCALEUP 2021
8 awardees - $100M available

SCALEUP Program

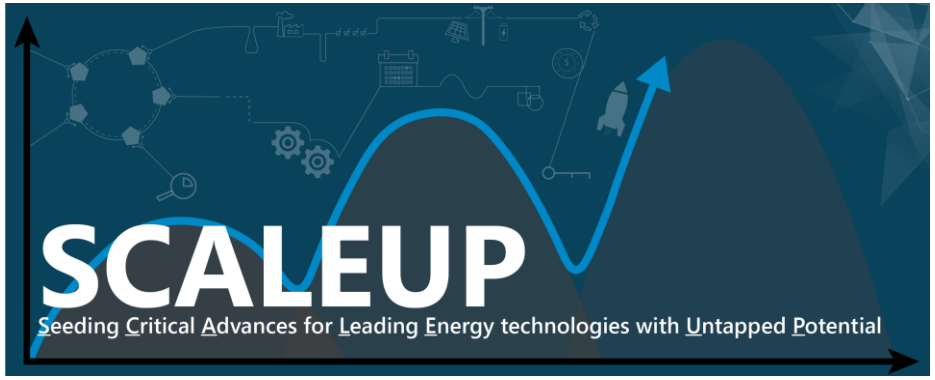
Small business, company, and industry participation is at the core of the SCALEUP program

Focuses on scale-up and pre-pilot projects of promising technologies that ARPA-E has funded and for which the scale-up would substantially build upon innovations achieved under the original ARPA-E award

Applicants must own/control ***subject invention(s) or software*** arising from ARPA-E award(s).

SCALEUP is designed to encourage ***company and industry*** participation. Must ***partner*** with potential customers, end-users, suppliers, etc.

SCALEUP 2019 & 2021 Portfolio at a Glance



Power Electronics

SWITCHED SOURCE
IMAGEN
AMPAIRE
FINWAVE
COREPOWER MAGNETICS

Buildings

SkyCool Systems
InventWood™

Energy Storage

24m
Natron Energy
SILA NANOTECHNOLOGIES
Quidnet Energy

Methane Emissions Detection

BRIDGER PHOTONICS
LONGPATH

Rare-Earth Alternatives

Niron Magnetics

Renewables – Wind

kent

Grid

AutoGrid

Industrial Efficiency

VIA SEPARATIONS

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SAVE THE DATE

arpa·e

energy innovation summit

May 22-24, 2024

Dallas, Texas

www.ARPAE-Summit.com

THANK YOU!

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https://arpa-e.energy.gov