Jennifer Gerbi
Associate Director for Technology

ARPA-E
In 2007, The National Academies recommended Congress establish an Advanced Research Projects Agency within the U.S. Department of Energy to fund advanced energy R&D.

**Rising Above the Gathering Storm**
Published - warning policymakers that U.S. advantages in science and technology had begun to erode

**America COMPETES Act Signed** – authorizing the creation of ARPA-E

**American Recovery & Reinvestment Act Signed** – Providing ARPA-E its first appropriations of $400 million, which funded ARPA-E's first projects

2007

2009

2019

800+ Awards
49 Programs

Current Funding: 
$353M 
(FY18)
ARPA-E Mission

**Mission:** To overcome long-term and high-risk technological barriers in the development of energy tech.

Ensure U.S. Technological Lead & U.S. Economic and Energy Security

**What problem should be solved?**

**What should the solution look like?**
If it works…

will it matter?
~4 year funding cycle: Driven by Program Directors

PROGRAM DEVELOPMENT CYCLE

ENVISION
- Program Conception (Idea/Vision)
- Workshop
- Program Approval

ENGAGE
- FOA Development & Issuance

ESTABLISH
- Contract Negotiations & Awards
- Project Selection

EXECUTE
- Ongoing Technical Review
- Project Handoff

EVALUATE
- Proposal Rebuttal
- Merit Review of Proposals

Transition Toward Market Adoption
Focused programs want to solve a specific problem.

- Size of the potential impact
- Technical opportunities for transformation – Metric specific
- Portfolio of projects with *different approaches*
- May be complimented by smaller efforts (TINA, etc)
# ARPA-E Program Portfolio

## ELECTRICITY GENERATION & DELIVERY
- INTEGRATE
- GRID DATA
- IONICS
- MOSAIC
- GENSETS
- NODES
- ALPHA
- CHARGES
- FOCUS
- MEITNER
- DAYS
- REBELS
- GRIDS
- GENI
- HEATS
- SOLAR ADEPT
- IMPACCT

## EFFICIENCY
- SENSOR
- CIRCUITS
- PNIOODES
- ENLITENED
- SHIELD
- ROOTS
- BREAKERS
- MONITOR
- ARID
- DELTA
- HITEMMP
- SWITCHES
- METALS
- BEETIT
- REACT
- ADEPT

## TRANSPORTATION
- MARINER
- REFUEL
- NEXTCAR
- TRANSNET
- TERRA
- RANGE
- REMOTE
- ELECTROFUELS
- AMPED
- BEEST


**Complement Focused Programs**
OPEN FOAs support the development of potentially disruptive new technologies across the full spectrum of energy applications. To date, ARPA-E has issued OPEN solicitations in 2009, 2012, 2015, and 2018.
What Makes an ARPA-E Project?  What is unique?

“Substantial Involvement”
Forming New Communities
Active Portfolio Management

TRANSFORM
- Challenges what is possible
- Disrupts existing learning curves
- Leaps beyond today’s technologies

BRIDGE
- Translates science into breakthrough technology - IMPACT
- Not researched or funded elsewhere
- Catalyzes new interest and investment
Tech-To-Market Approach Drives Impact

**Scope**
Provide strategic market insights necessary to create innovative, commercially-relevant programs

**Manage**
Manage project teams’ T2M efforts through T2M plans and jointly developed milestones

**Advise**
Support project teams with skills & knowledge to align technology with market needs

**Partnerships**
Engage third-party investors and partners to support technology development towards the market
ARPA-E Impact Indicators

Since 2009 ARPA-E has provided
$2 billion
in R&D funding to
more than 800 projects

145 Projects have
attracted more than
$2.9 billion
in private-sector follow-on funding

76 projects
have formed
new
companies

131 projects
have partnered
with other
government
agencies
for further
development

2,489 peer-reviewed
journal articles
from ARPA-E
projects

346 patents
issued by U.S.
Patent and
Trademark Office

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Ensure U.S. Energy and Economic Security

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