CHANGING WHAT'S POSSIBLE

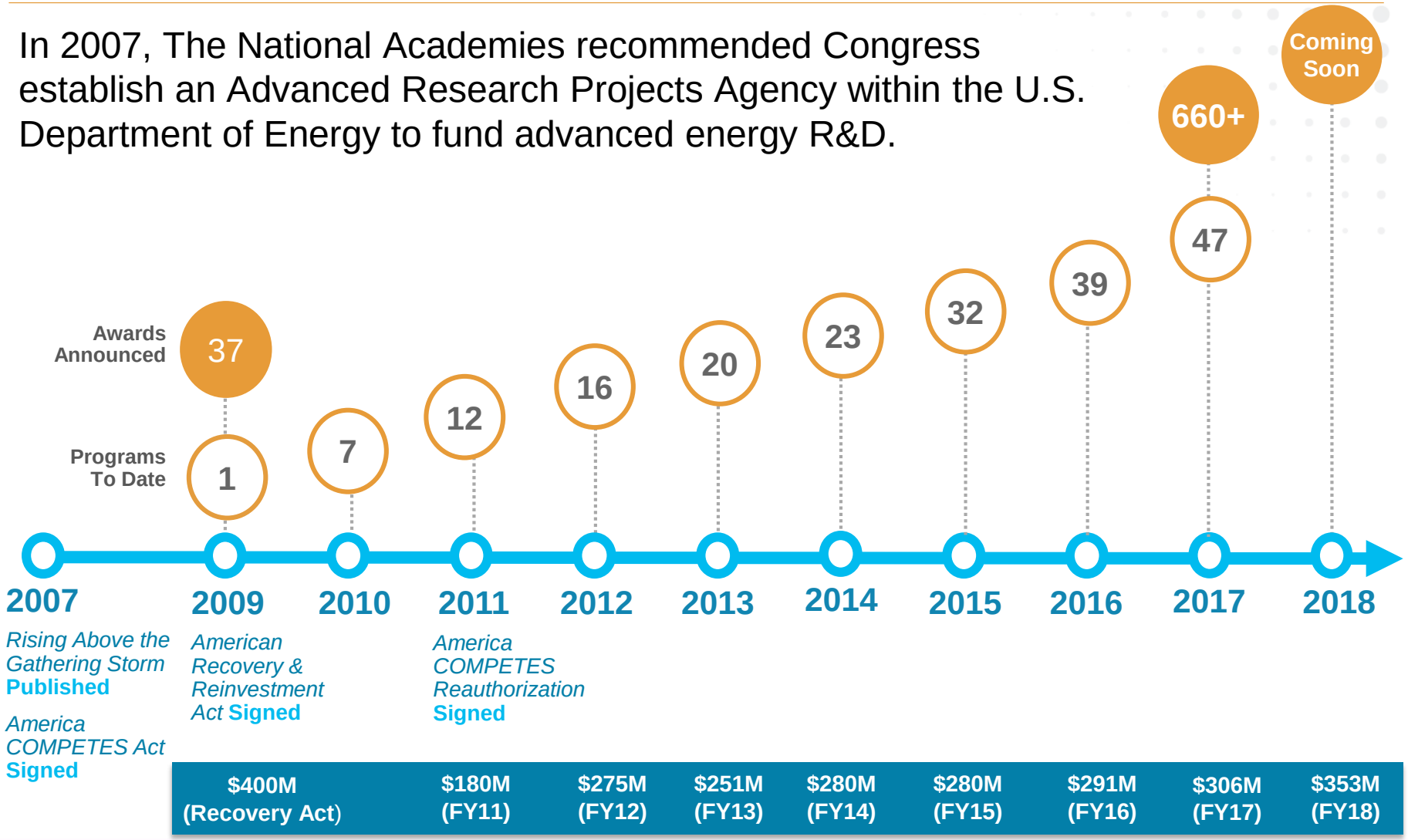
U.S. Department of Energy Advanced Research Projects Agency-Energy (ARPA-E)

Conner Prochaska
Chief of Staff & Senior Advisor, ARPA-E
April 10, 2018

www.arpa-e.energy.gov

History of 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.



arpa·e
CHANGING WHAT'S POSSIBLE

ARPA-E Mission

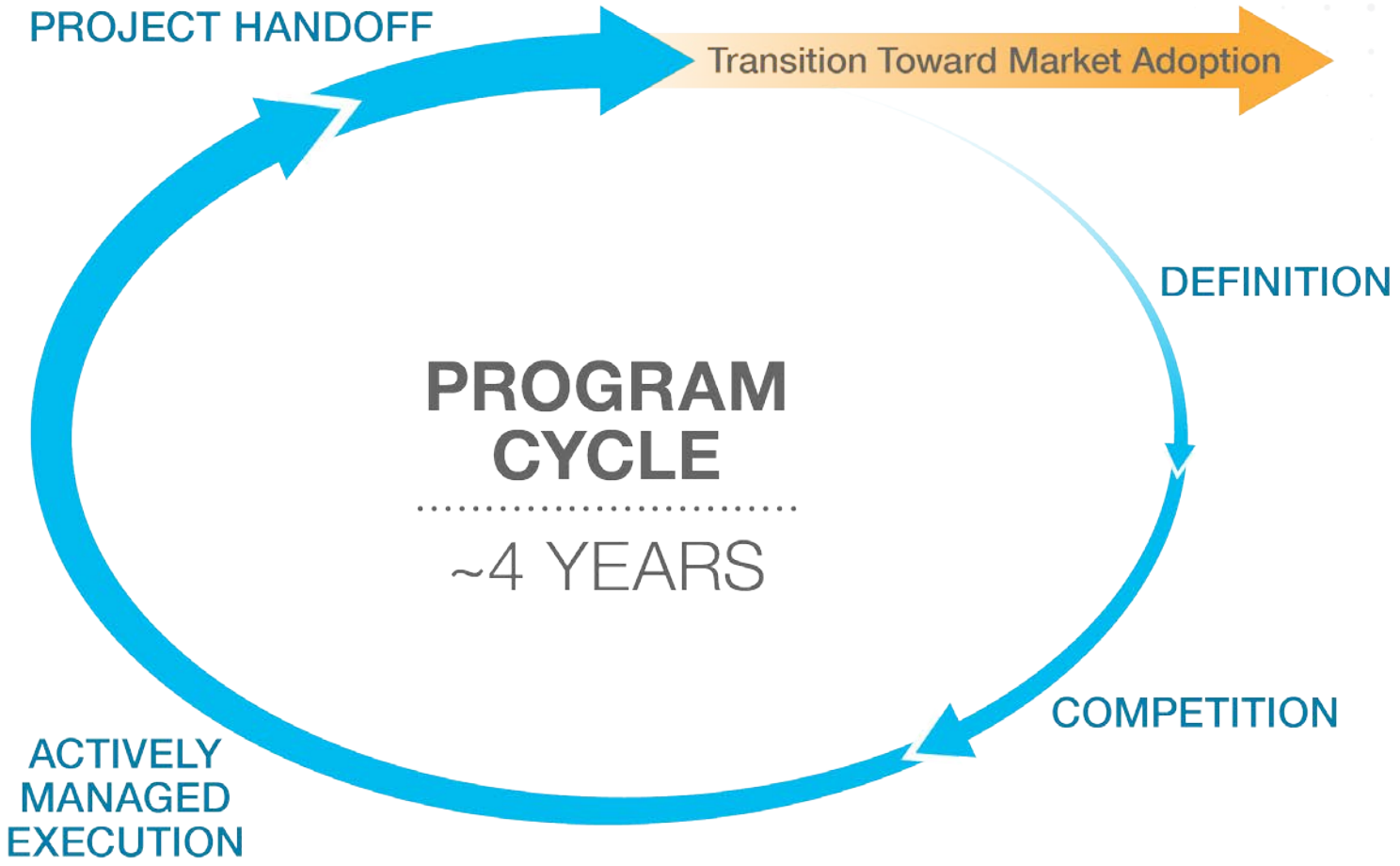
Mission: To overcome long-term and high-risk technological barriers in the development of energy technologies

Means:

- Identify and promote revolutionary advances in fundamental and applied sciences
- Translate scientific discoveries and cutting-edge inventions into technological innovations
- Accelerate transformational technological advances in areas that industry by itself is not likely to undertake because of technical and financial uncertainty

Built on DARPA foundation, but with key differences…

Technology Acceleration Model



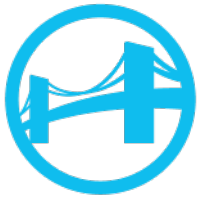
What Makes an ARPA-E Project?

IMPACT

- High impact on ARPA-E mission areas
- Credible path to market
- Large commercial application

TRANSFORM

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



BRIDGE

- Translates science into breakthrough technology
- Not researched or funded elsewhere
- Catalyzes new interest and investment

TEAM

- Comprised of best-in-class people
- Cross-disciplinary skill sets
- Translation oriented

Tech-To-Market Approach

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

$1.8 billion

in R&D funding to more than **660 projects**

136 Projects have attracted more than

$2.6 billion

in private-sector follow-on funding

*Does not include $338.5M from 3 aquisitions with strong links to ARPA-E supported technology

71 projects have formed **new companies**

109 projects have **partnered with other government agencies** to further development

1,634 peer-reviewed **journal articles** from ARPA-E projects

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

ARPA-E Program Portfolio

Active

Alumni

ELECTRICITY GENERATION & DELIVERY

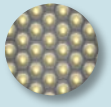

INTEGRATE


GRID DATA


IONICS


GENSETS


NODES


MOSAIC


ALPHA


FOCUS


CHARGES


REBELS


GRIDS


GENI


HEATS

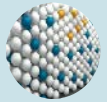

SOLAR ADEPT


IMPACCT

EFFICIENCY


SENSOR


CIRCUITS


PNDIODES


ENLITENED


SHIELD

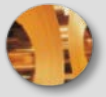

ROOTS


MONITOR


ARID

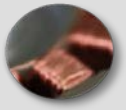

DELTA


SWITCHES


METALS


BEETIT


REACT


ADEPT

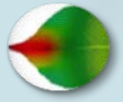
TRANSPORTATION


MARINER


REFUEL


NEXTCAR


TRANSNET


TERRA


RANGE


REMOTE


MOVE


PETRO


ELECTROFUELS


AMPED

BEEST

OPEN 2009, 2012, 2015 & 2018 Solicitations
Complement Focused Programs

A small sampling of what we do

Makani – Wind Kites

Stanford/SkyCool – Radiative Cooling

Donald Danforth – Robotic Phenotyping

Foro Energy – Laser Drill for Geothermal

U.S. DEPARTMENT OF
ENERGY

https://arpa-e.energy.gov