

# Electrochemical Approaches to Modular Power Generation Workshop: Introduction to ARPA-E

Dr. Eric Rohlifing, Acting Deputy Director for Technology

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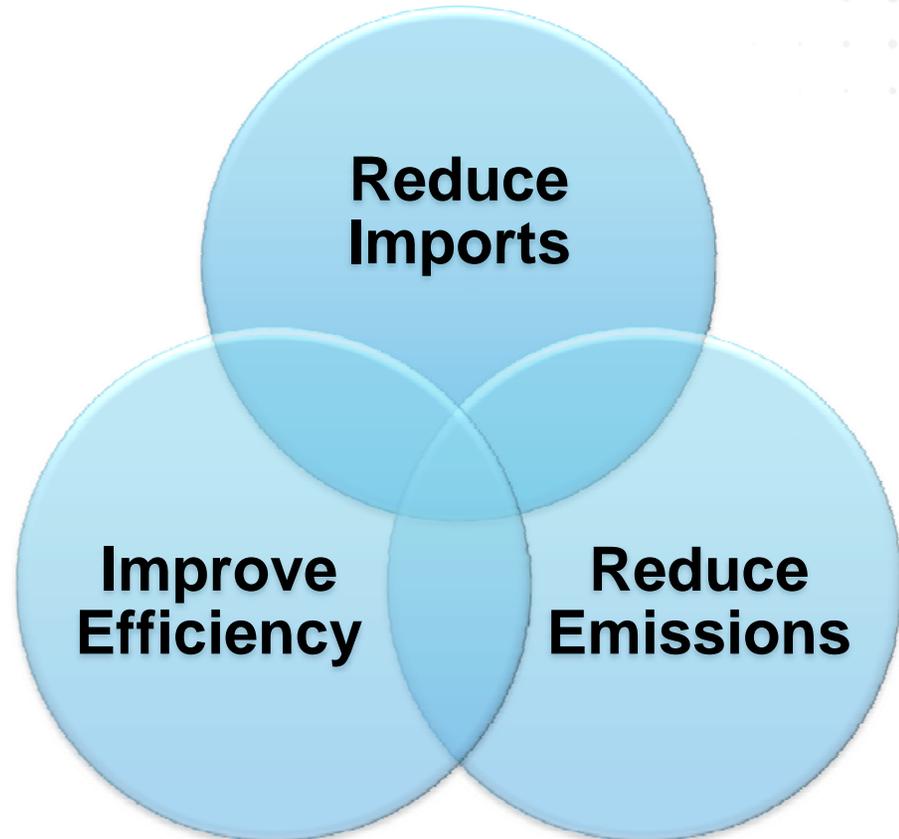
# The ARPA-E Mission

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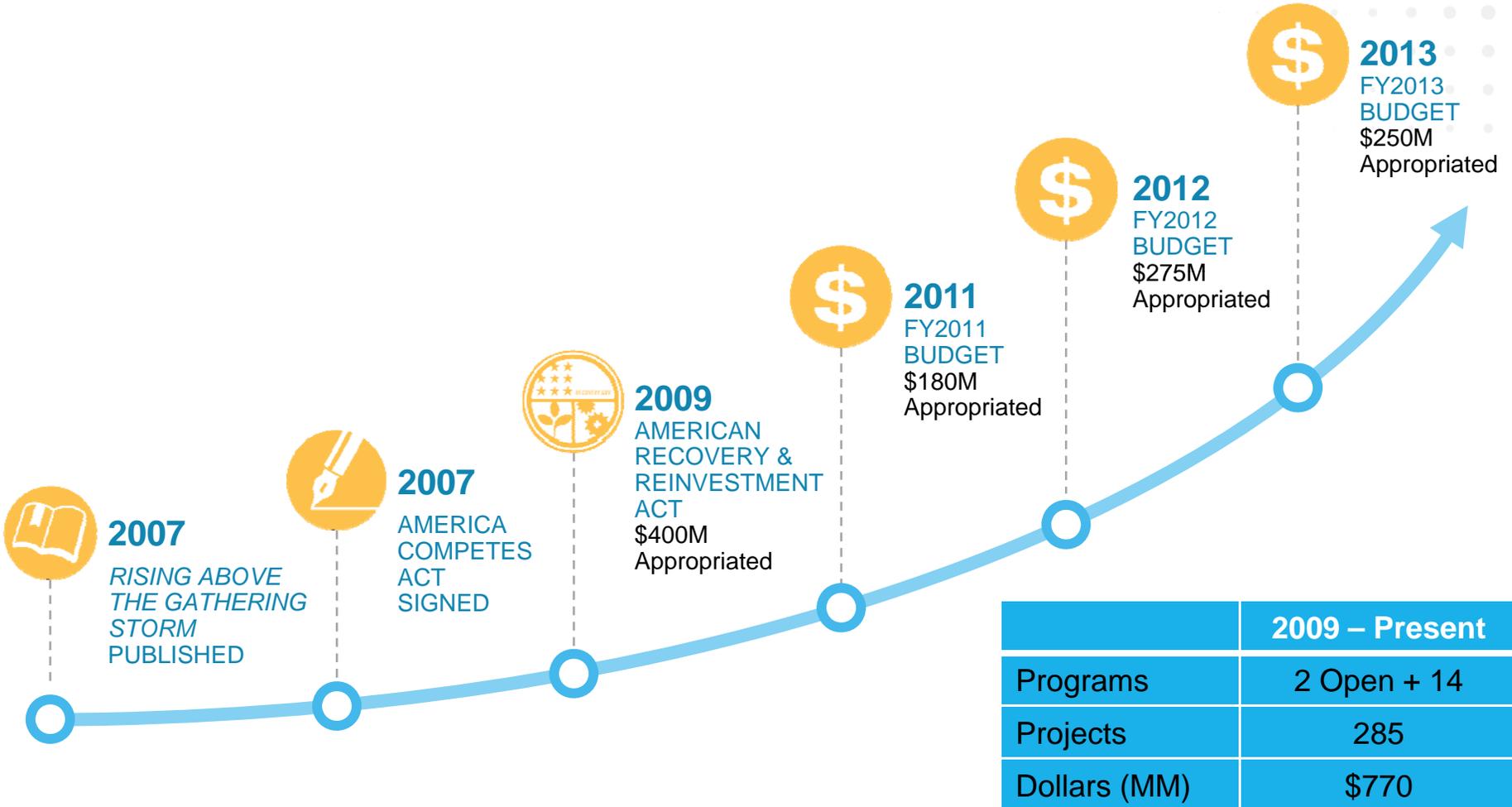
Catalyze and support the development of transformational, high-impact energy technologies

## Ensure America's

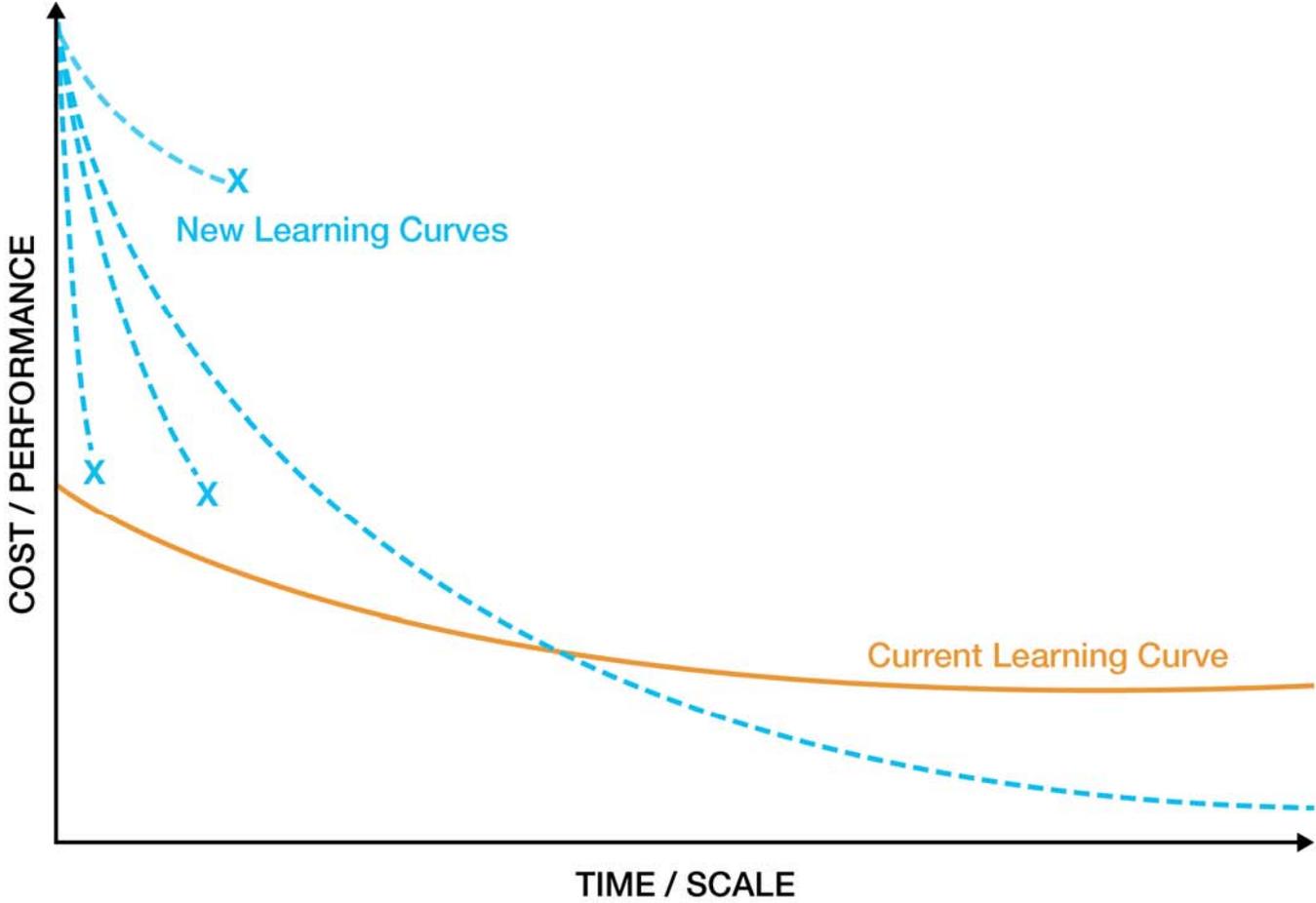
- National Security
- Economic Security
- Energy Security
- Technological Lead



# A Brief History of ARPA-E



# Creating New Learning Curves



# What Makes an ARPA-E Project?

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## 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

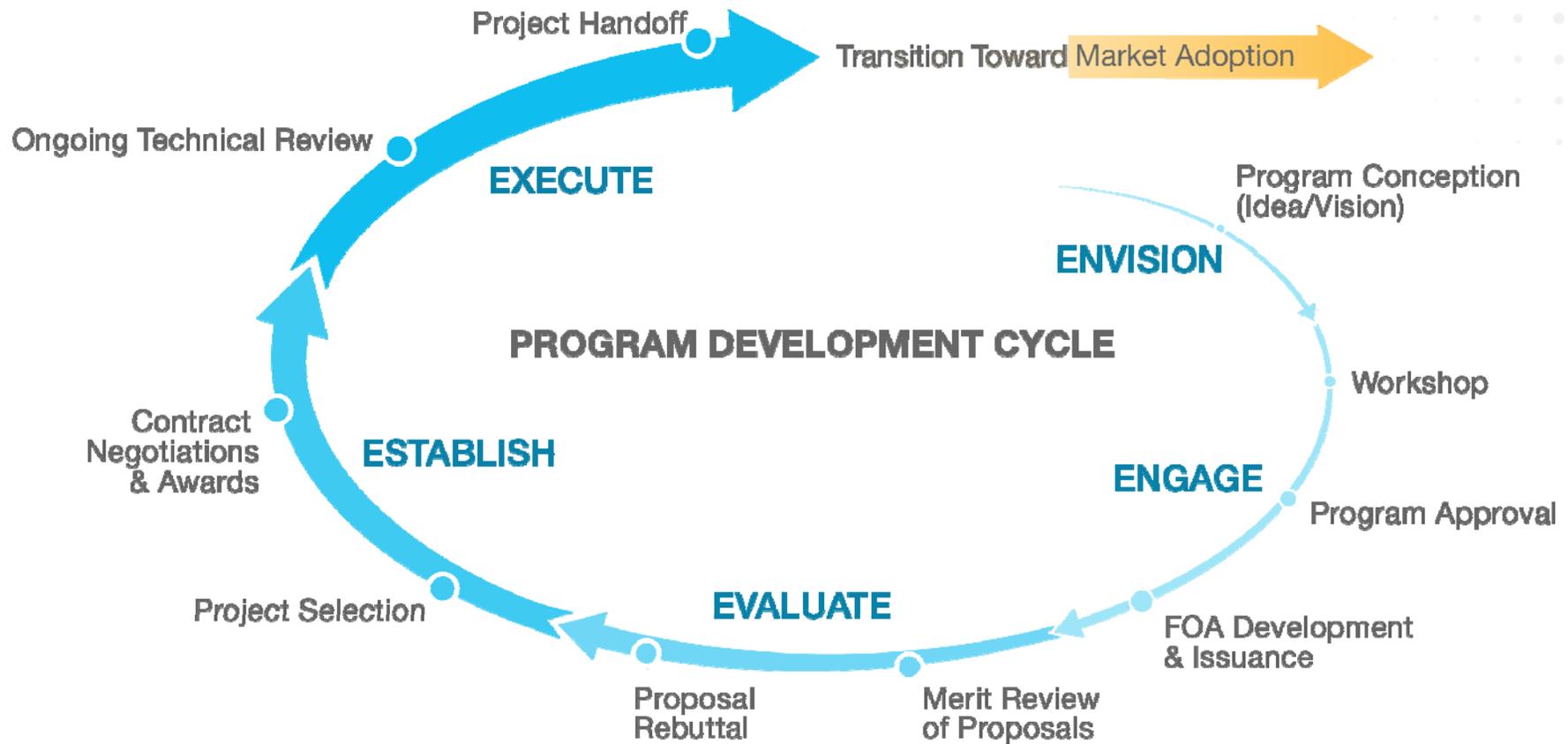
- ▶ Translates science into breakthrough technology
- ▶ Not researched or funded elsewhere
- ▶ Catalyzes new interest and investment



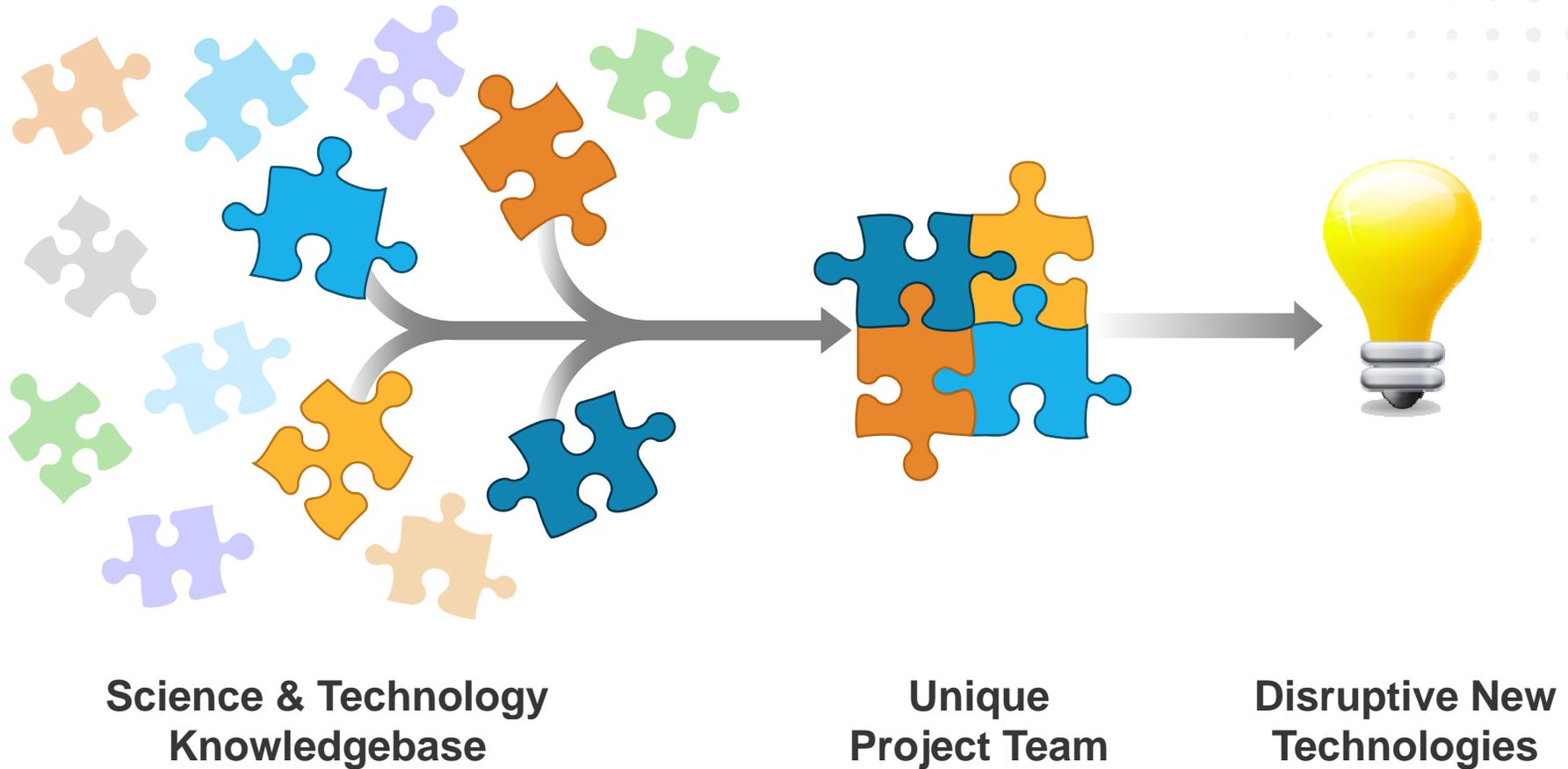
## TEAM

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

# Technology Acceleration Model



# How does ARPA-E Enable Transformations?



ARPA-E teams come from a multiple segments of the S&T base to attack problems in entirely new ways

# Focused Programs



## TRANSPORTATION ENERGY TECHNOLOGIES

BEEST

Electrofuels



PETRO

MOVE

HEATS



AMPED

REACT



SBIR/STTR



## STATIONARY ENERGY TECHNOLOGIES

BEET-IT

IMPACCT

GRIDS

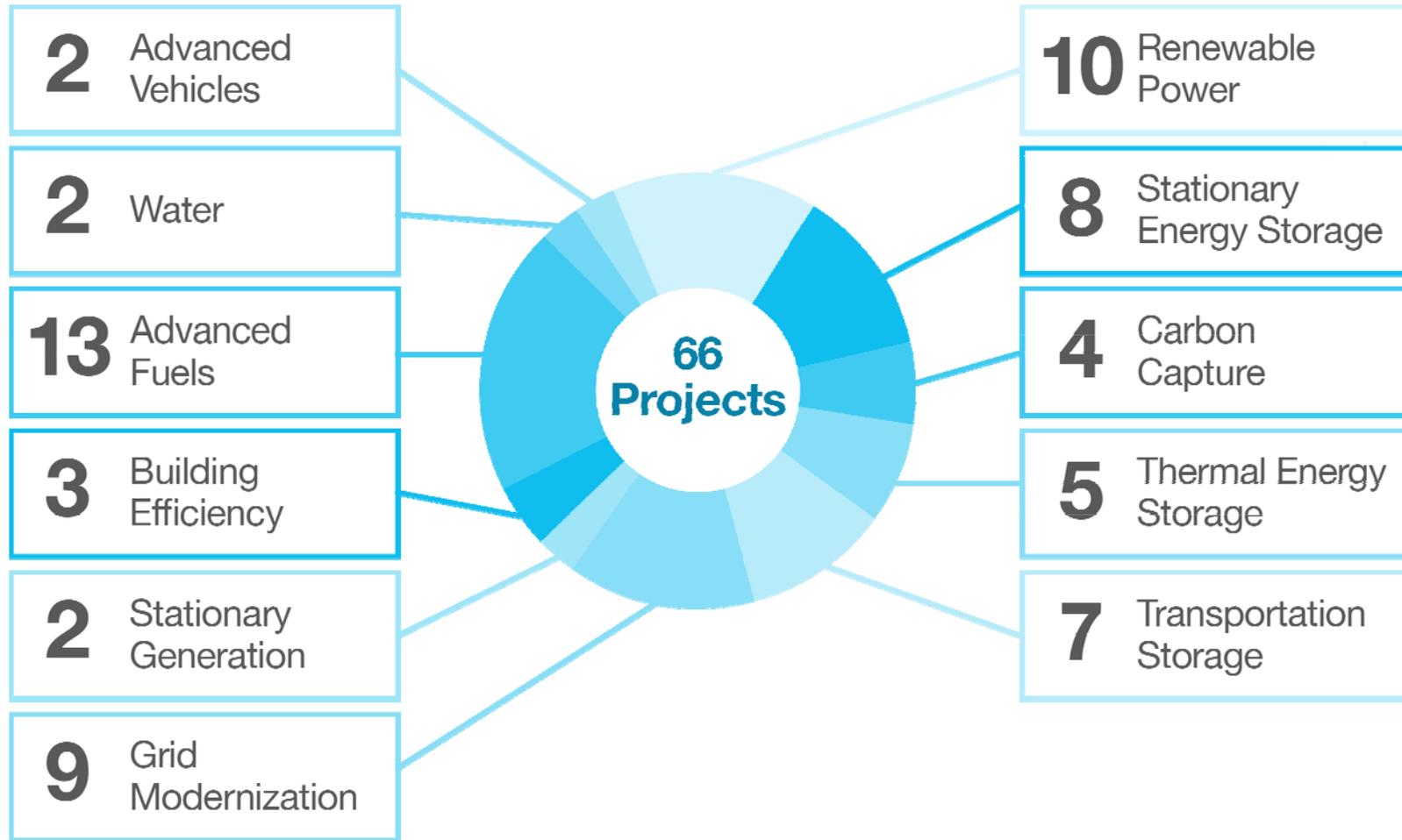


Solar ADEPT

GENI

ADEPT

# OPEN 2012: 66 Projects, 24 States, 11 Areas



# Measuring ARPA-E's Success

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## MOVING TECHNOLOGY TOWARD MARKET

- ▶ Partnerships with Other Government Agencies
- ▶ New Company Formation
- ▶ Established Company Partnerships
- ▶ New Communities



## BREAKTHROUGH ACHIEVEMENTS

- ▶ Technology breakthroughs
- ▶ Patents
- ▶ Publications



## OPERATIONAL EXCELLENCE

- ▶ Expedited program development and project selection
- ▶ Aggressive performance metrics

# New Funding Opportunities

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## RANGE

Robust Affordable Next Generation EV-storage

*Release Date: 2/19/2013*

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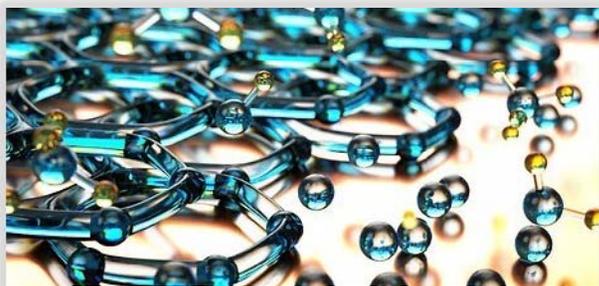


## METALS

Modern Electro/Thermochemical Advances in Light-metal Systems

*Release Date: 3/20/2013*

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## REMOTE

Reducing Emissions Using Methanotrophic Organisms for Transportation Energy

*Release Date: 3/15/2013*

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# Program Directors

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*ARPA-E is continually recruiting new Program Directors, who serve 3-year terms*

## ROLES & RESPONSIBILITIES

### Program development

- ▶ Perform technical deep dive soliciting input from multiple stakeholders in the R&D community
- ▶ Present & defend program concept in climate of constructive criticism

### Active project management

- ▶ Actively manage portfolio projects from merit reviews through project completion
- ▶ Extensive “hands-on” work with awardees

### Thought leadership

- ▶ Represent ARPA-E as a thought leader in the program area

## ATTRIBUTES

- ▶ R&D experience; intellectual integrity, flexibility, and courage; technical breadth; commitment to energy; communication skills; leadership; and team management
- ▶ ***A passion to change the world of energy technology combined with the ability to do so***



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**ENERGY**

[www.arpa-e.energy.gov](http://www.arpa-e.energy.gov)