

ARPA-E Overview

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Program Director

Advanced Research Projects Agency – Energy (ARPA-E)

**Powertrain Innovations for Connected and
Autonomous Vehicles Workshop**

Denver, CO, May 14-15 , 2015



U.S. DEPARTMENT OF
ENERGY

The Brief History of ARPA-E

ARPA-E was envisioned in the Rising Above the Gathering Storm report, authorized by Congress in the America Competes Act, and implemented with ARRA funding.



Rising Above the Gathering Storm Published

American Recovery & Reinvestment Act Signed

America COMPETES Act Signed

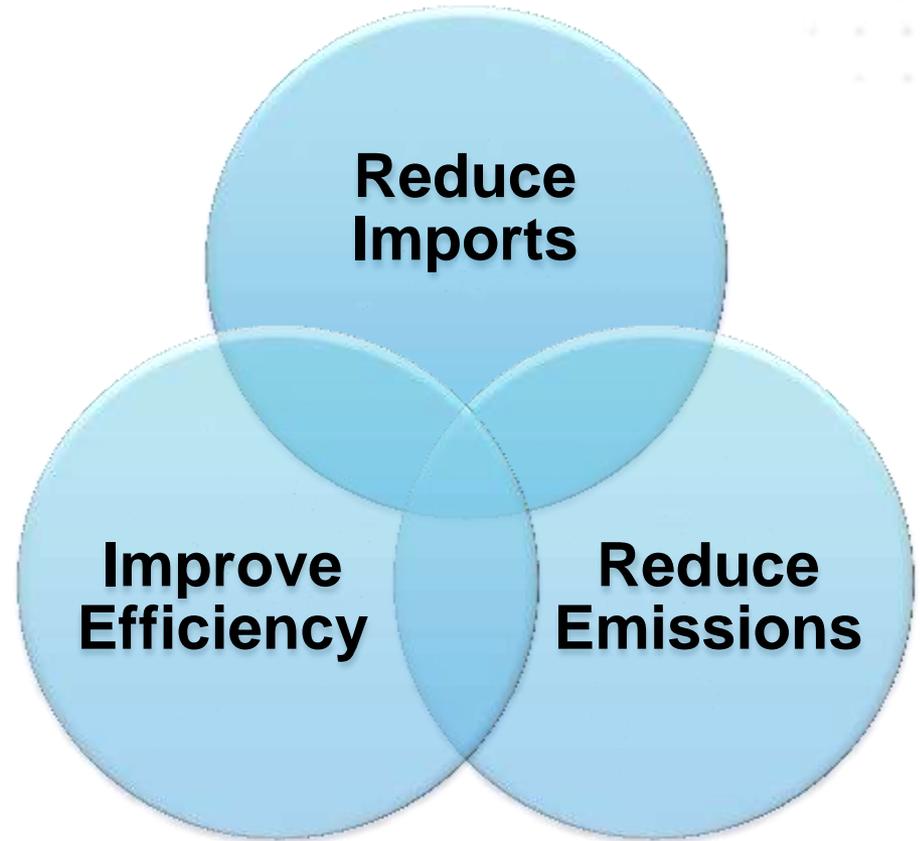
Fiscal Year	Request	Appropriation
2015	\$325M	\$280M
2016	\$325M	?
2017 and beyond	Modest growth?	

The ARPA-E Mission

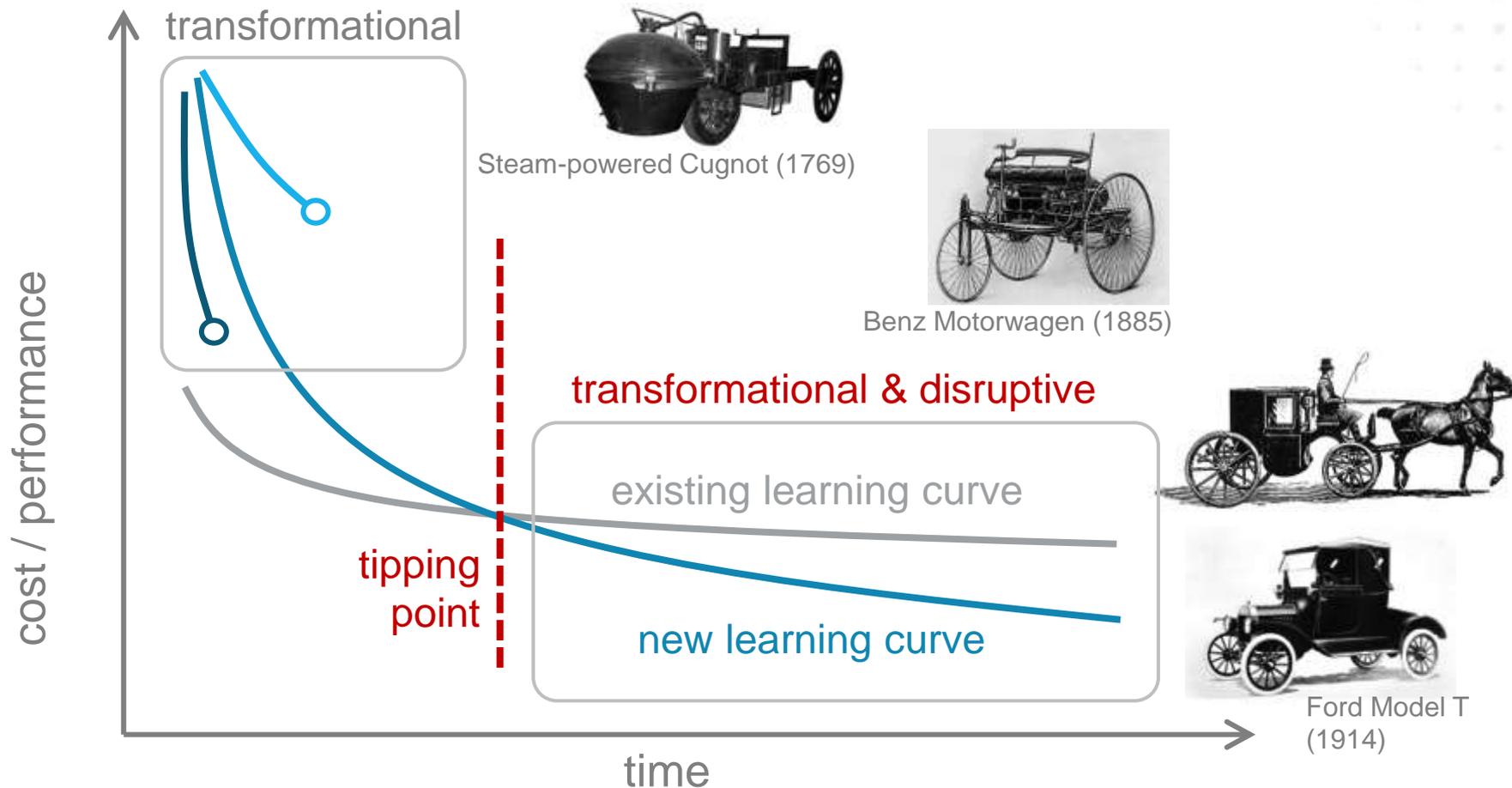
Catalyze and support the development of transformational, disruptive energy technologies

Ensure America's

- National Security
- Economic Security
- Energy Security
- Technological Competitiveness

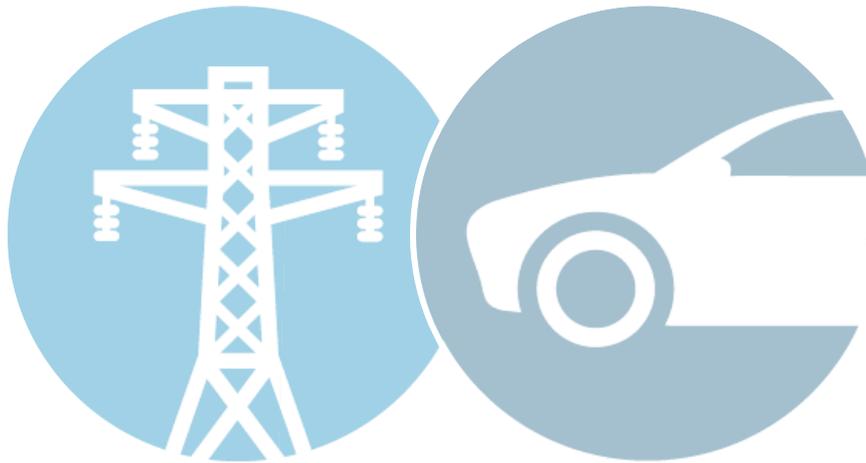


ARPA-E Invests in the Development of Transformational, Disruptive Technologies



The ARPA-E Portfolio

As of January 2015, ARPA-E has funded over 400 projects, investing \$1.1 billion across 25 focused programs and open funding solicitations



Stationary Energy Technologies

Solar ADEPT	BEETIT	REBELS
GRIDS	GENI	DELTA
IMPACCT	FOCUS	MONITOR

Transportation Energy Technologies

BEEST	MOVE
PETRO	RANGE
Electrofuels	REMOTE

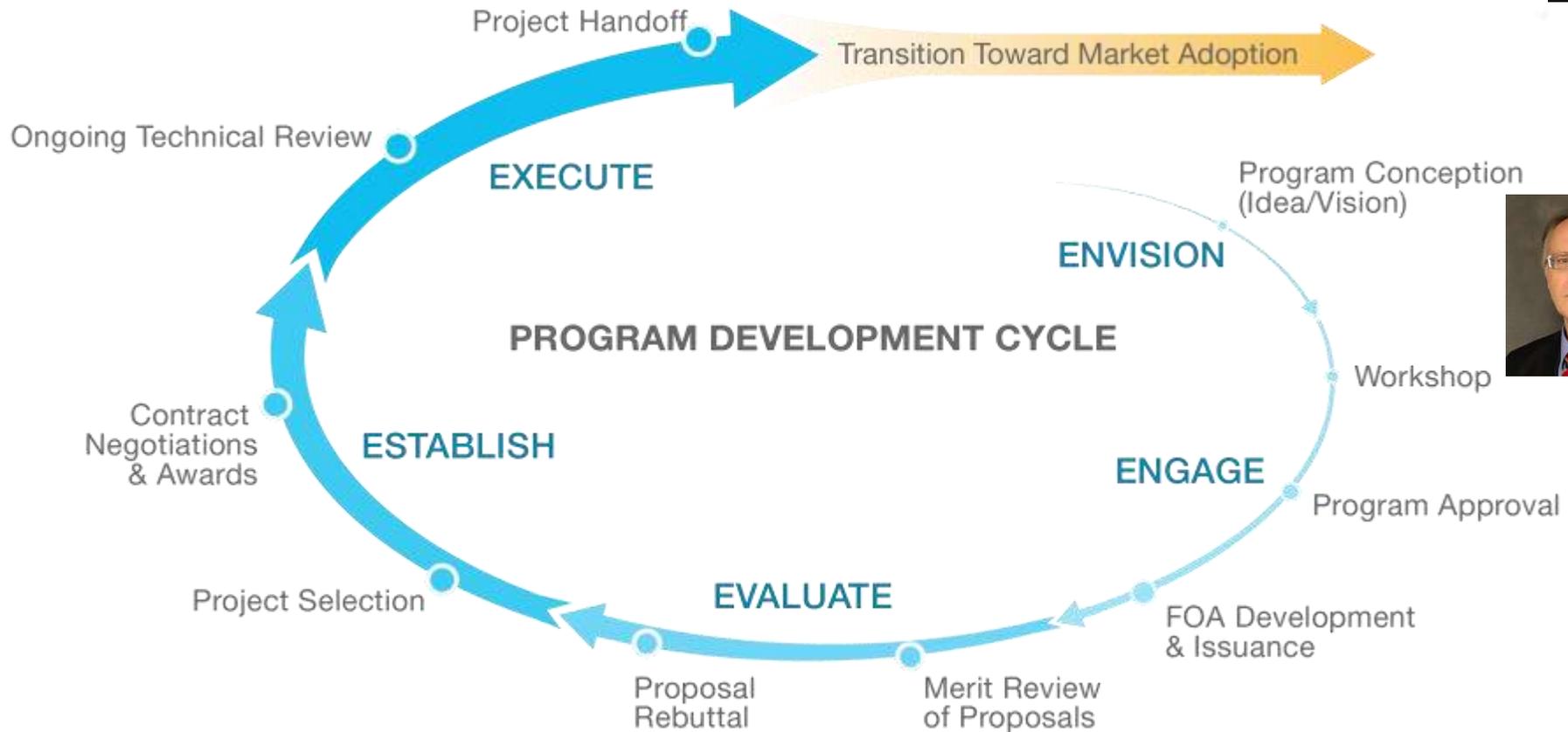
Stationary & Transportation Energy Technologies

ADEPT	AMPED	SWITCHES
HEATS	REACT	
SBIR/STTR	METALS	

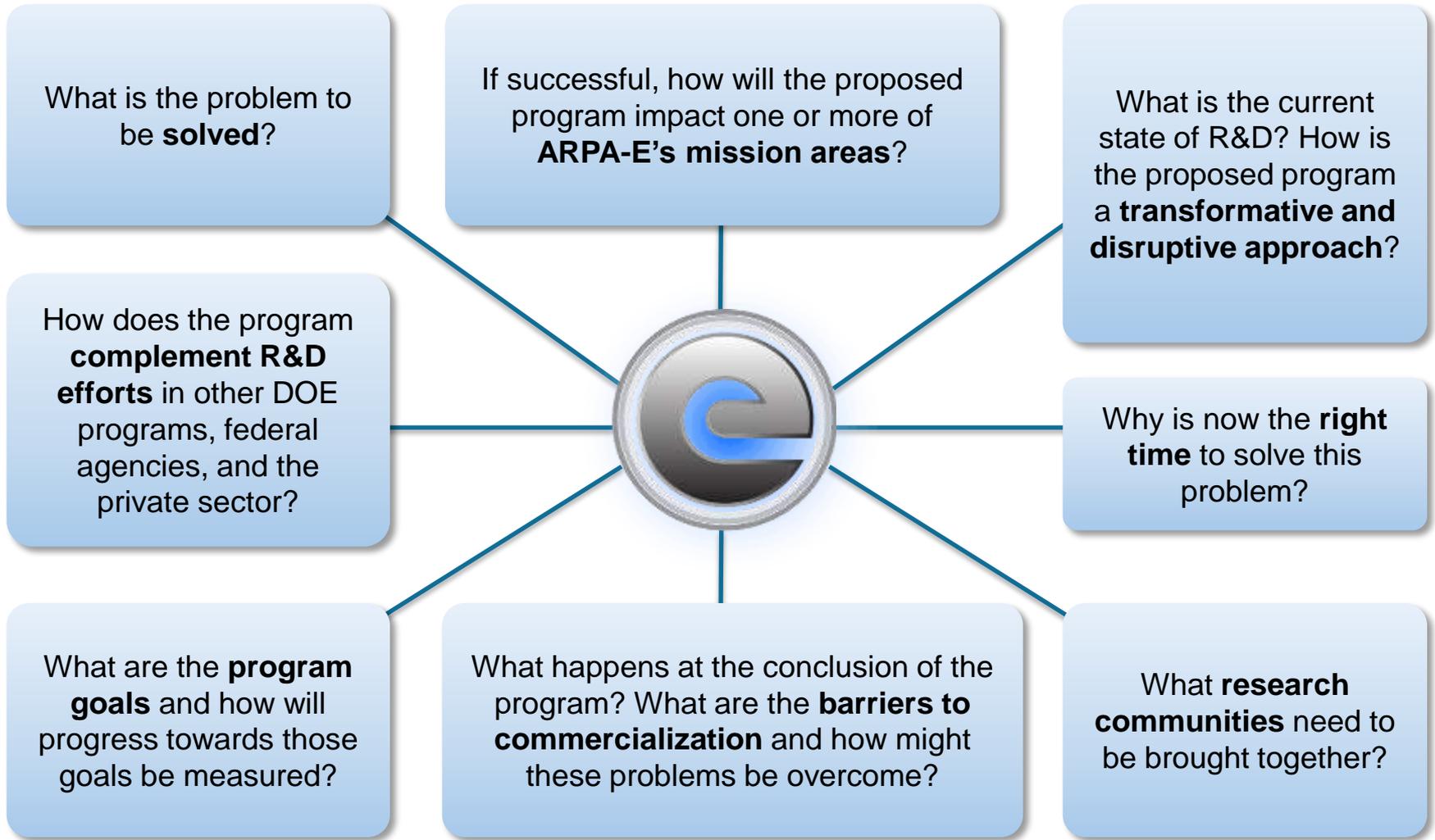
Open

OPEN 2009	OPEN 2012	IDEAS
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Developing ARPA-E Programs



ARPA-E Program Framing Questions





If it works...

will it matter?

Ideal ARPA-E Project Characteristics



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 technology
- ▶ Not researched or funded elsewhere
- ▶ Catalyzes new interest and investment



TEAM

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

Program Directors

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 our energy future***

Fellows

ARPA-E also hires Fellows, who serve 2-year terms

ROLES & RESPONSIBILITIES

Identification of high-impact energy technologies

- ▶ Perform technical and economic analyses to identify high-impact energy technologies.
- ▶ Publish original research papers and reviews.

Program director support

- ▶ Help develop future programs through technical analysis, discussions, and workshops.
- ▶ Assist with management of current projects, including site visits.

Organizational support

- ▶ Review proposals for funding opportunities.
- ▶ Contribute to the strategic direction and vision of the agency.

ATTRIBUTES

- ▶ Ph.D. in science or engineering; strong analytical and communication skills; ability to work independently and across disciplines; leadership.
- ▶ ***A passion to change our energy future***



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www.arpa-e.energy.gov