ARPA-E: Changing What's Possible

2013 ASEE Engineering Research Council (ERC) Annual Conference

Peder Maarbjerg

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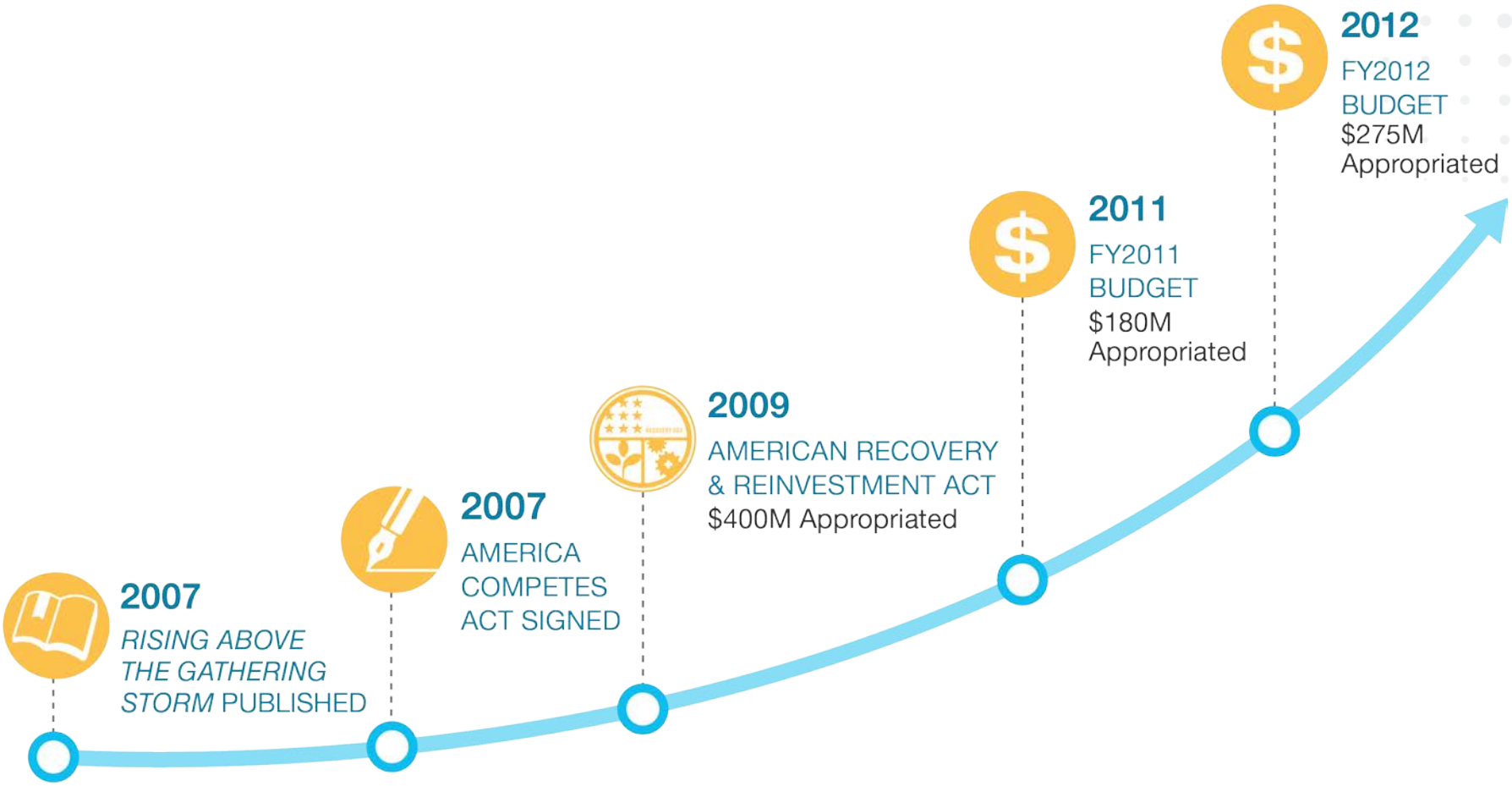
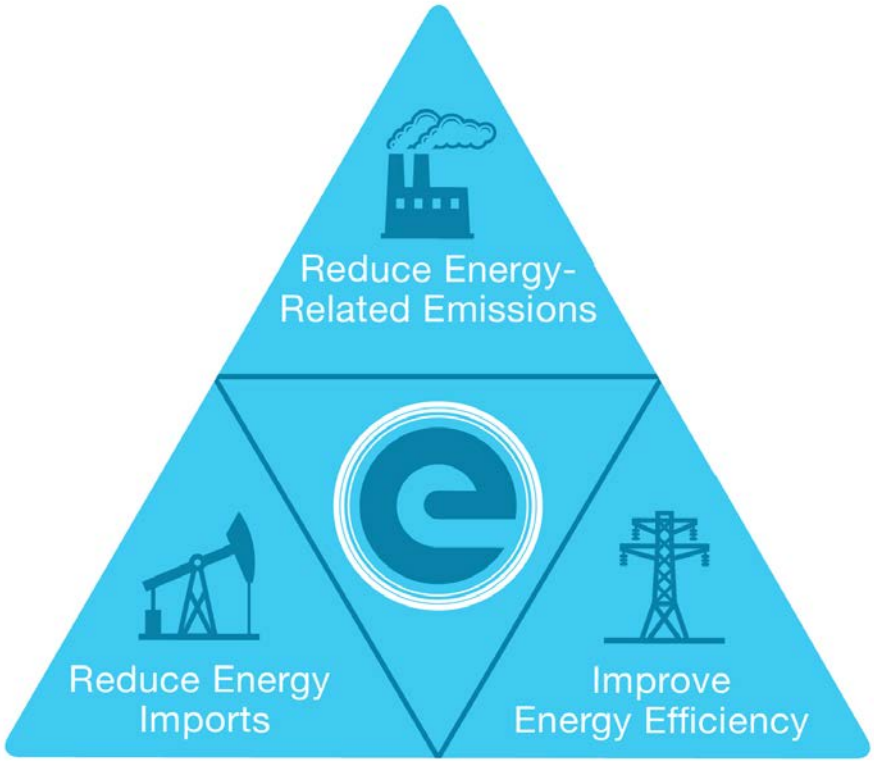
Evolution of ARPA-E



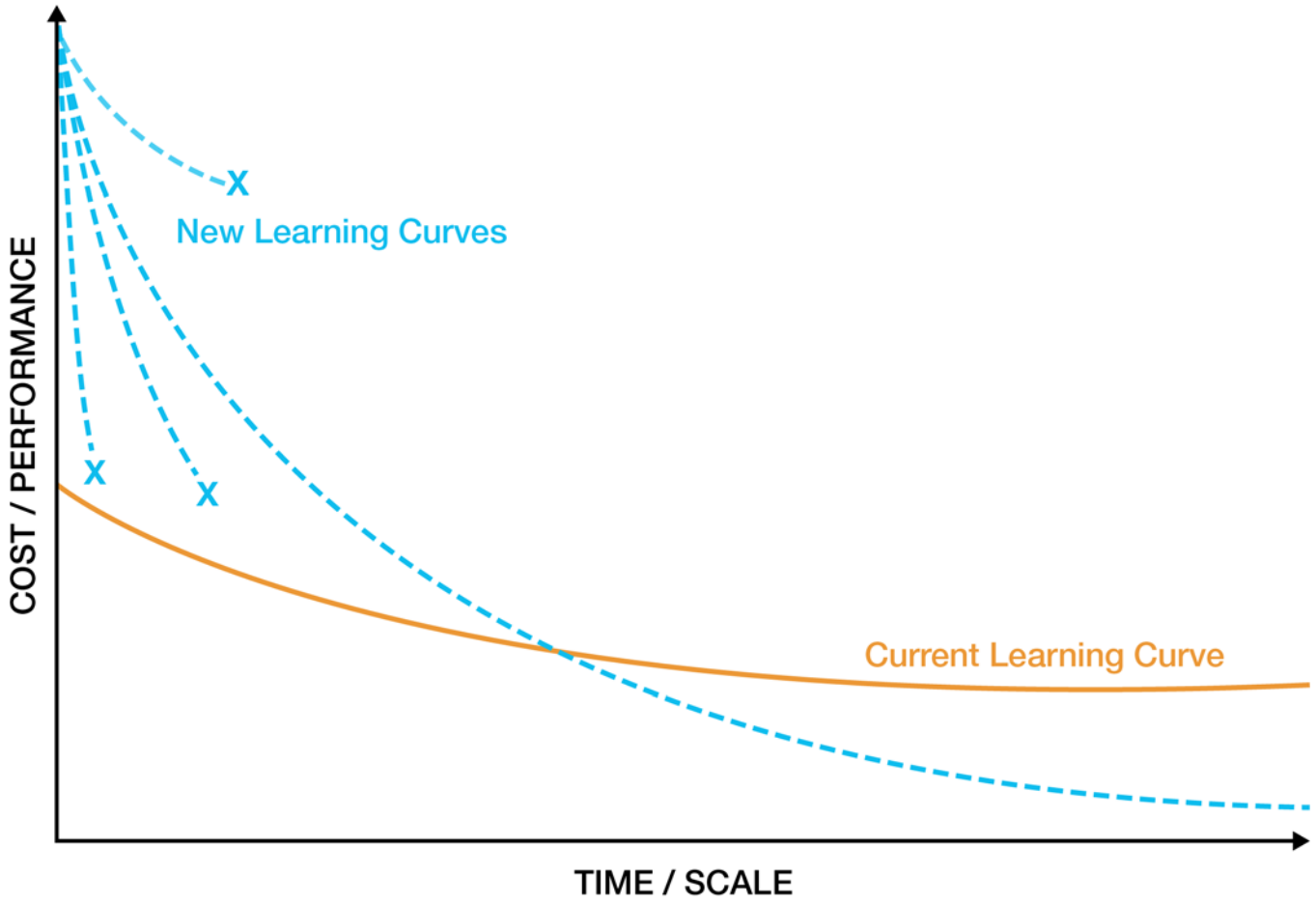
ARPA-E Mission

Catalyze the development of transformational, high-impact energy technologies



Ensure the U.S. maintains a lead in the development and deployment of advanced technologies

Creating New Learning Curves



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

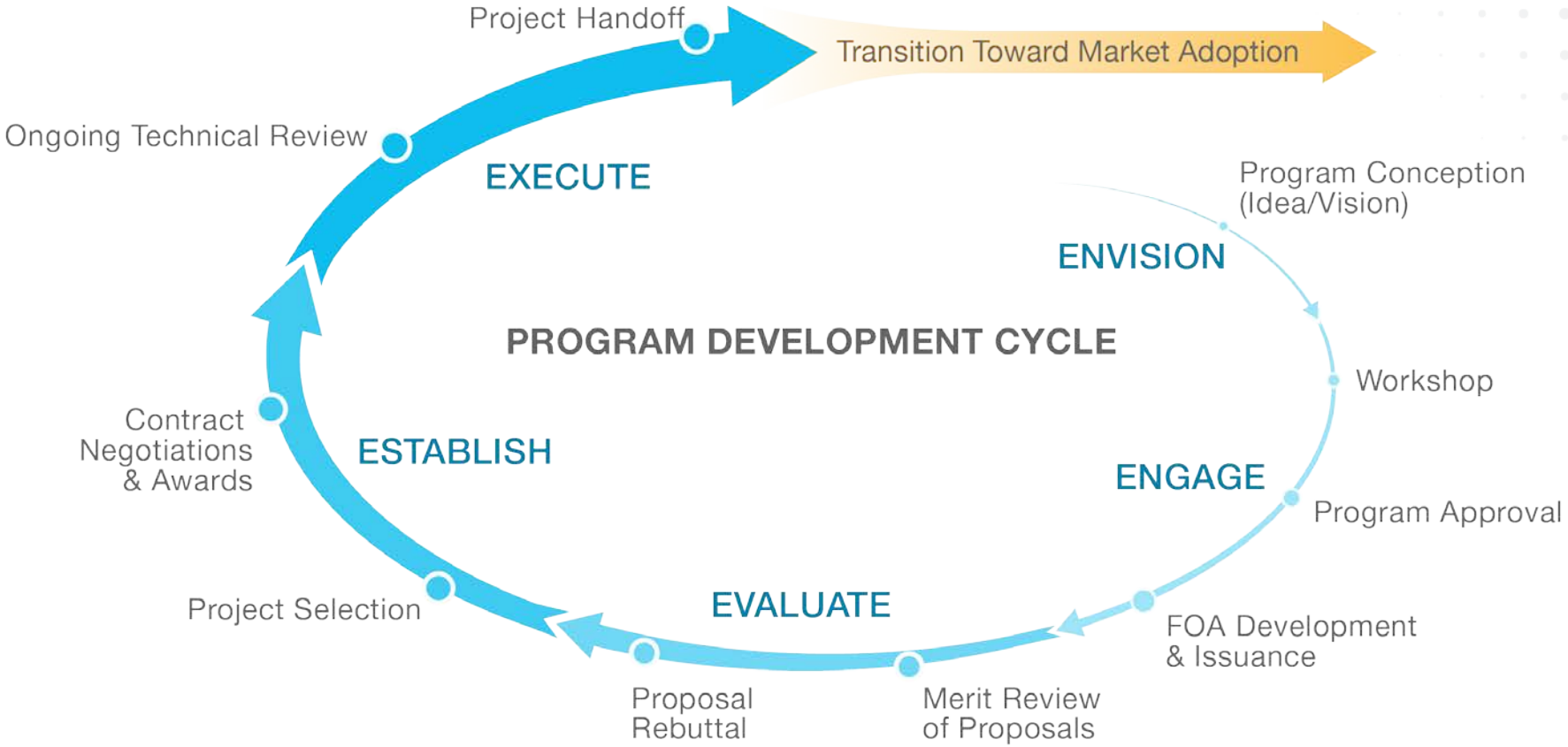
BRIDGE

- 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

Technology Acceleration Model



Measuring ARPA-E's Success

MOVING TECHNOLOGY TOWARD MARKET

- Partnerships with Other Government Agencies
- Licensing/Acquisition by an Established Firm
- Licensing/Acquisition Resulting in a Spinoff
- Private-Sector Funding
- Growth of Existing Company (e.g., Organic Growth)

BREAKTHROUGH ACHIEVEMENTS

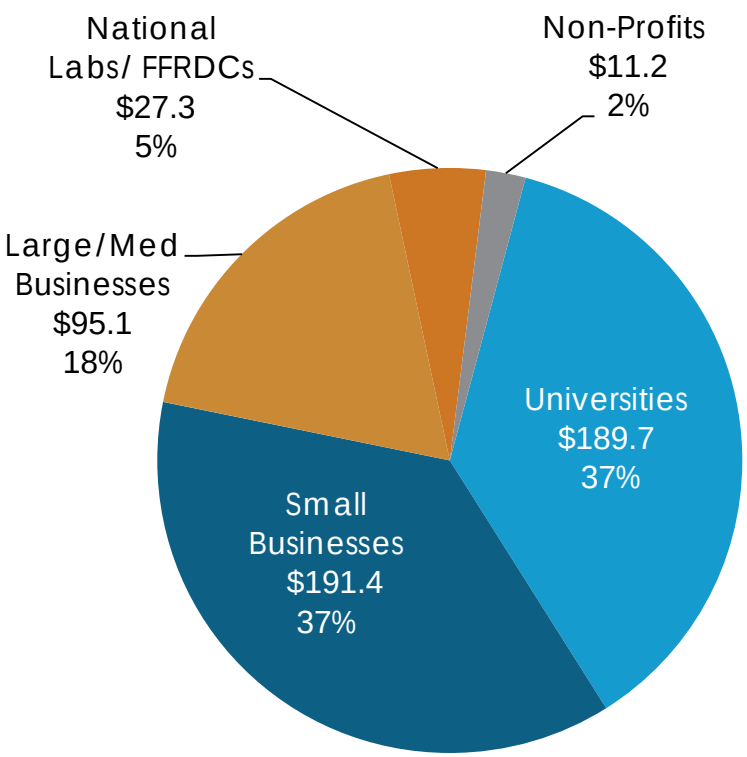
- Patents
- Publications

OPERATIONAL EXCELLENCE

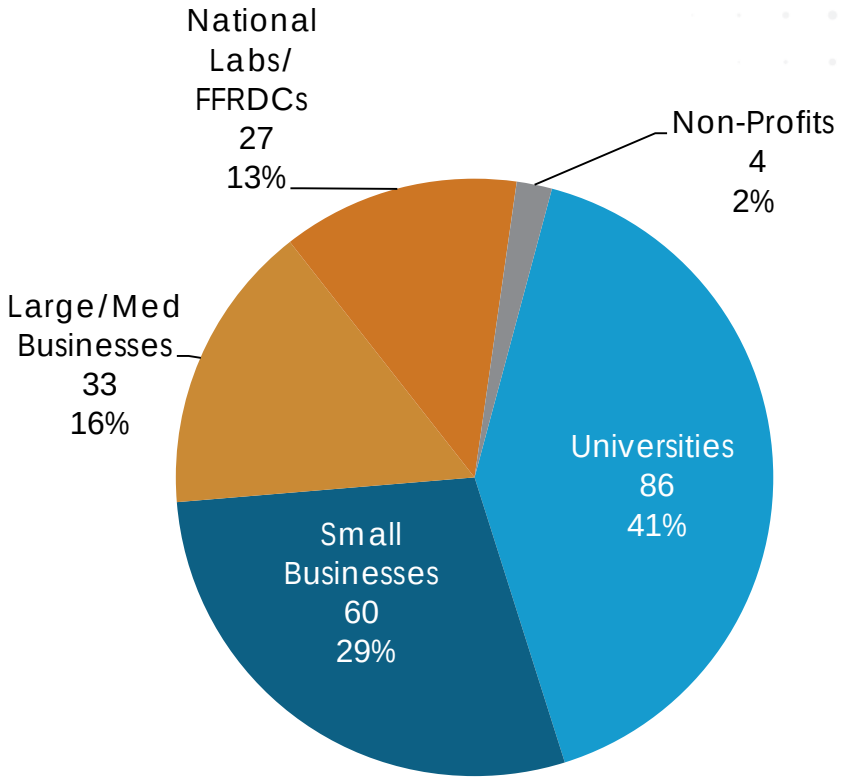
- Expedited program development and project selection
- Aggressive performance metrics

Breakdown of ARPA-E's project leads

Federal Funding (million $)

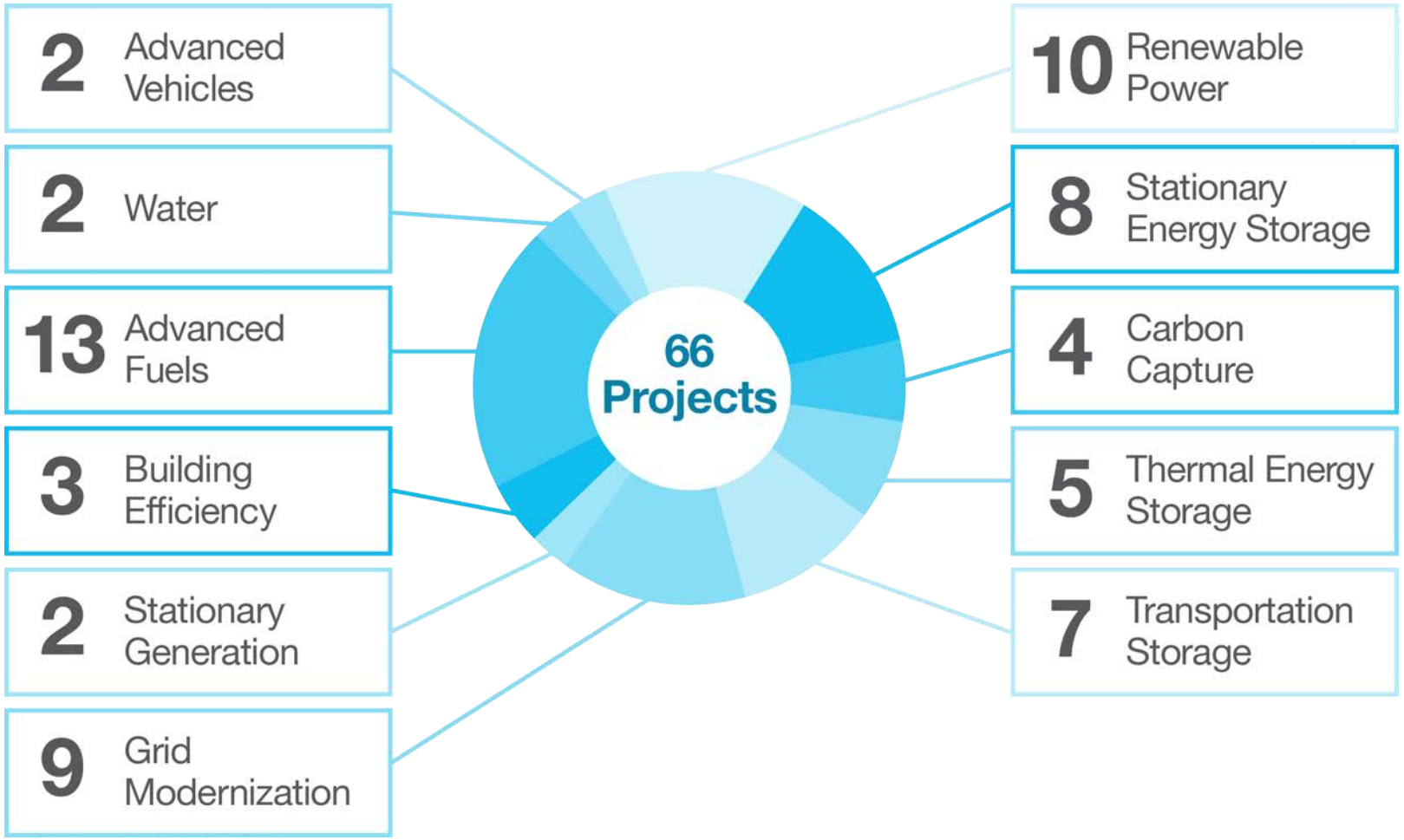


Frequency

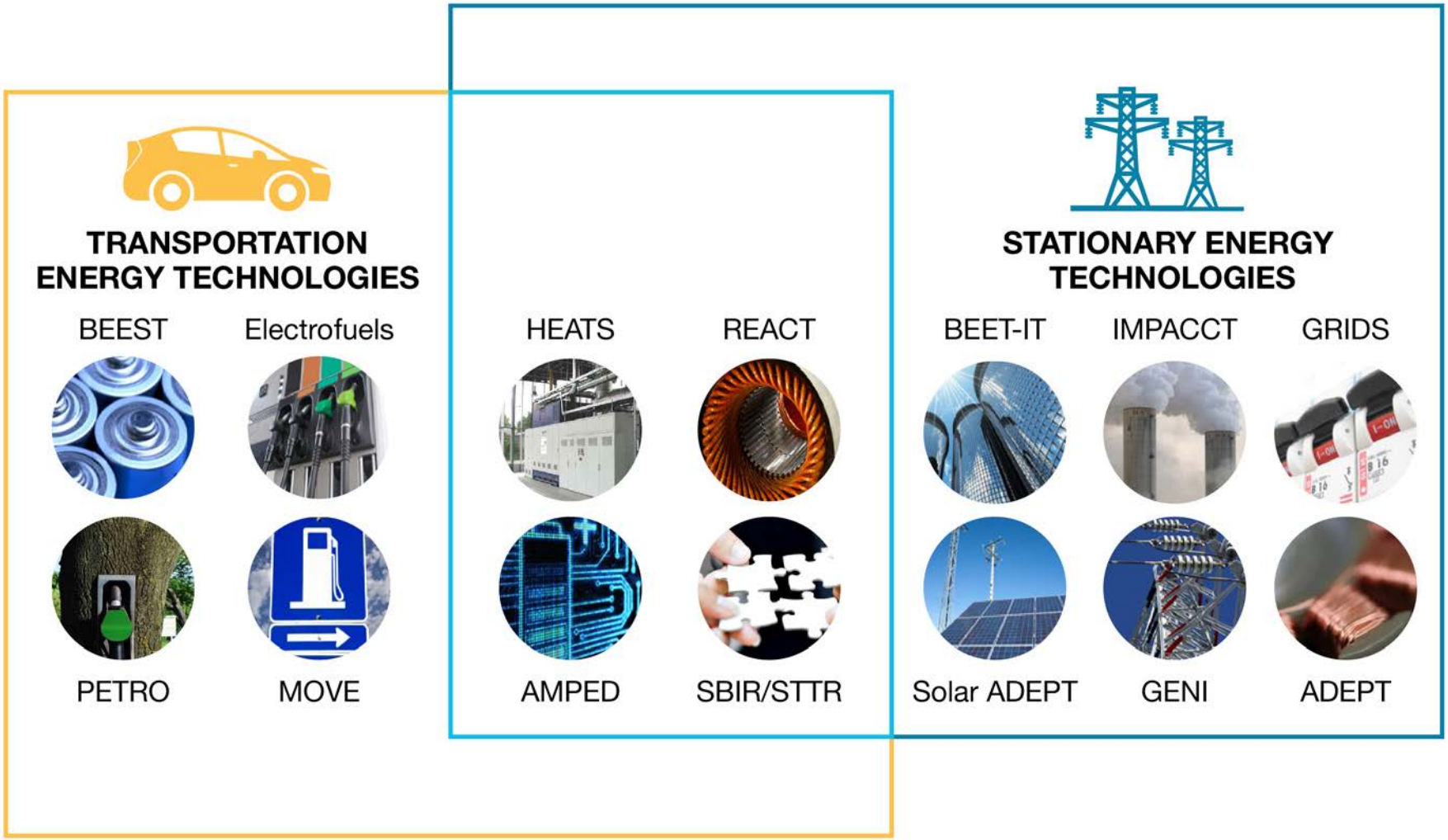


Data above includes all ARPA-E projects contracted as of the end of FY 2012, with the exception of AMPED and SBIR/STTR which were excluded due to data availability issue..

OPEN 2012: 66 Projects, 24 States, 11 Areas



Focused Programs



Photosynthetic Biofuels

Less than 1% efficient

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CHANGING WHAT'S POSSIBLE

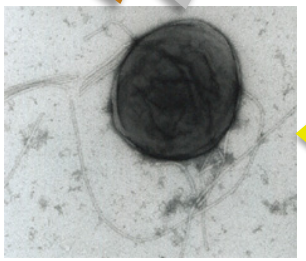
Electrofuels

H_2S

H_2

Electricity

Non-photosynthetic microbes



Greater than 10X more efficient

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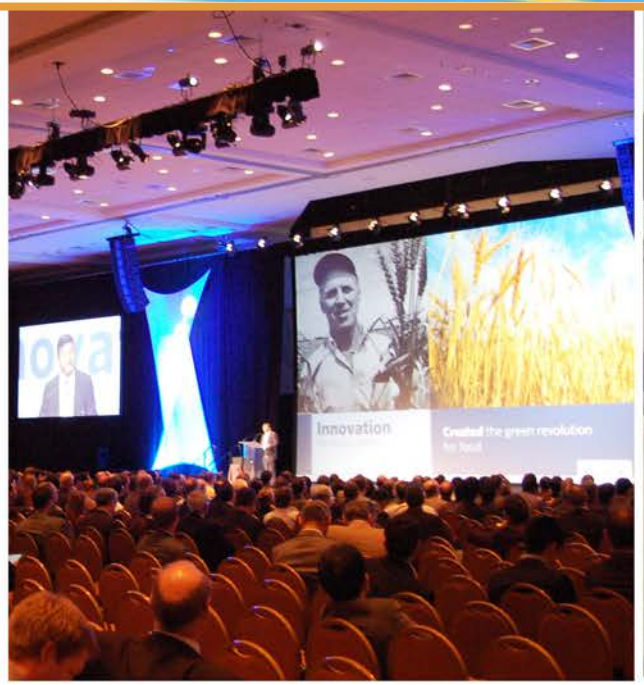
CHANGING WHAT'S POSSIBLE

Plants Engineered To Replace Oil (PETRO)

Non-food crops that directly replace transportation fuels

Photosynthetic plants

arpa·e energy innovation summit



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