

ARPA-E: Enabling Disruptive Energy Technologies

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October 2023



REDUCE
imports

ARPA-E Mission



REDUCE
emissions



IMPROVE
efficiency

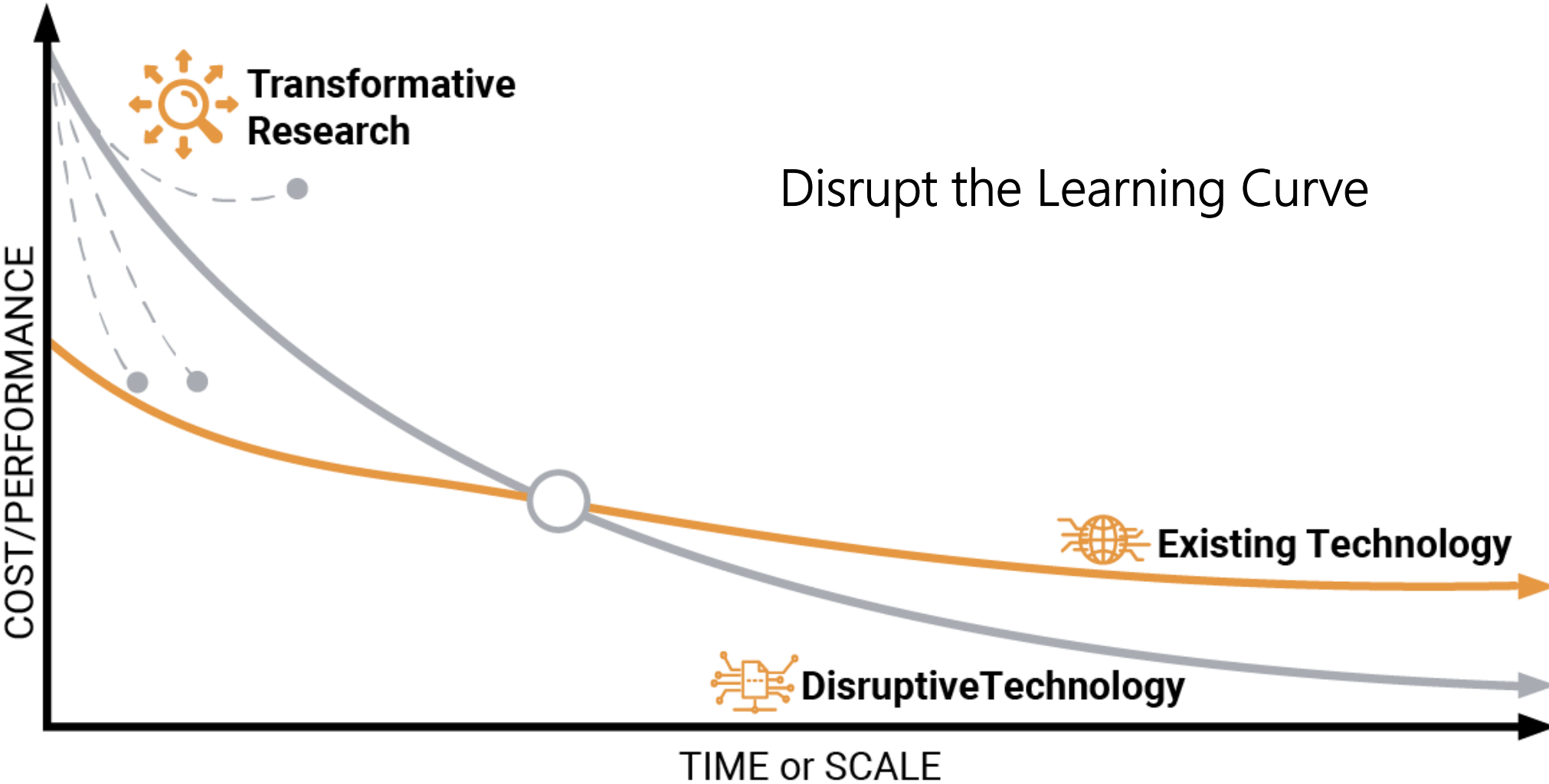


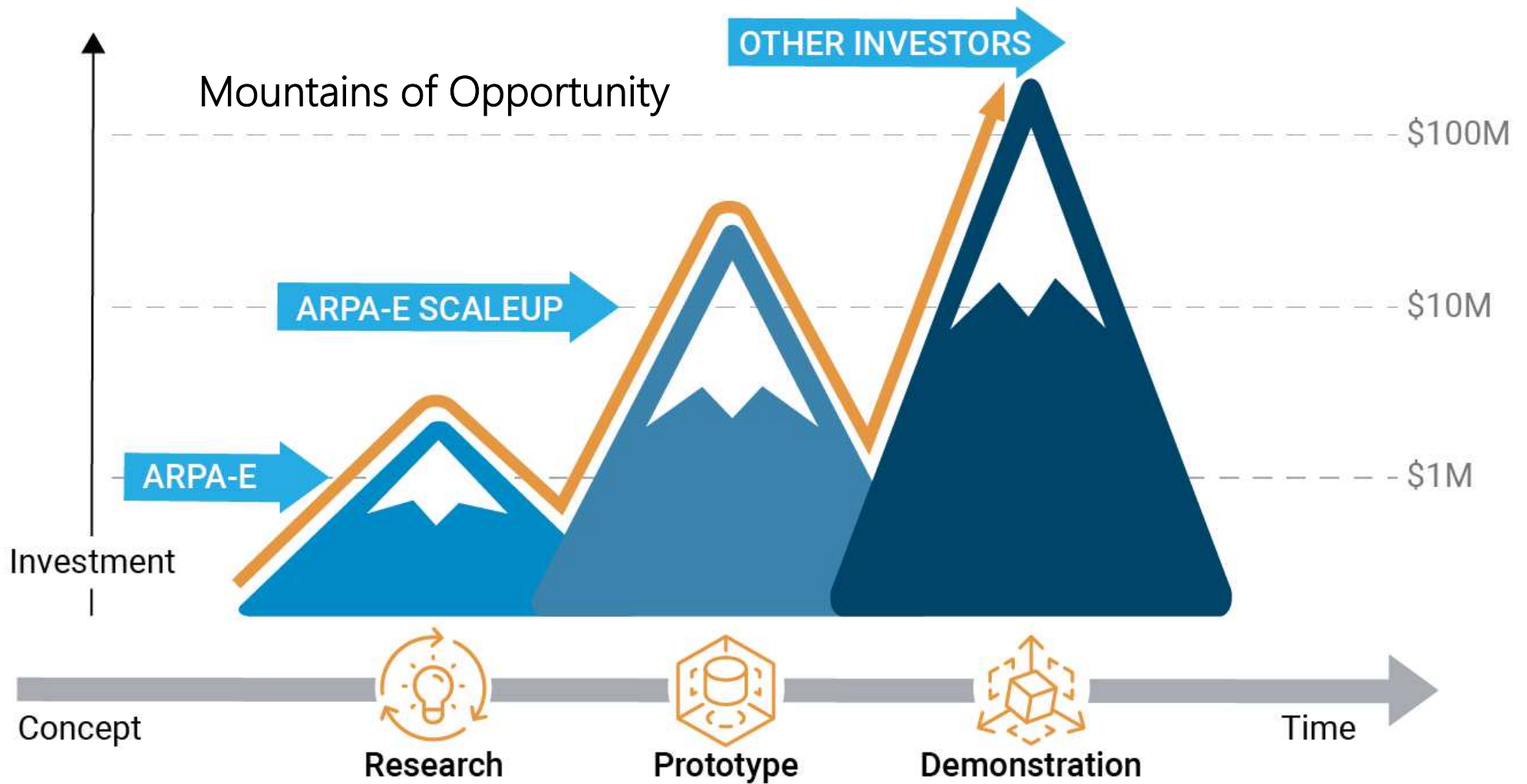
IMPROVE
radioactive waste
management



IMPROVE
energy infrastructure
resilience

Disrupt the Learning Curve



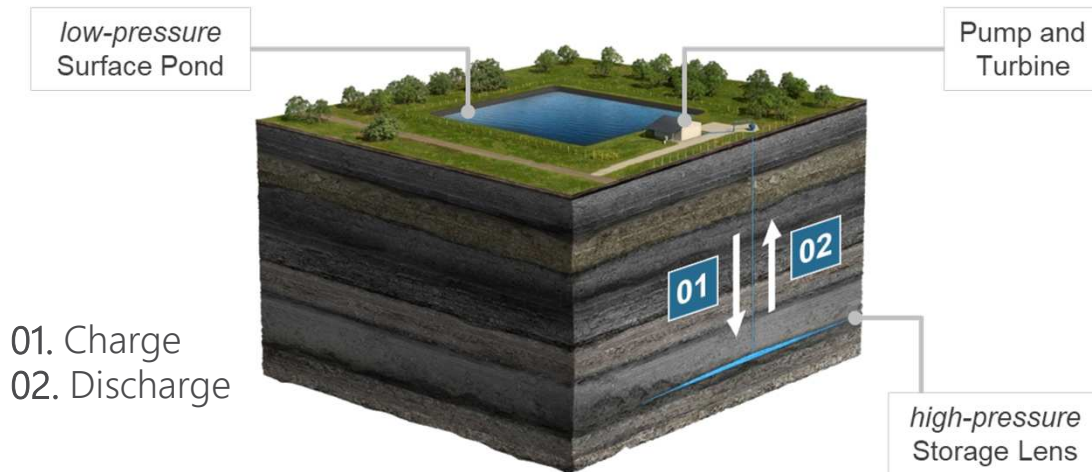




DAYS
Duration Addition to electricity
Storage

- Created to develop energy storage systems that provide power to the electric grid
- Capable of providing power for durations of 10 to approximately 100 hours
- Lifetime of 20 years

Quidnet Energy



- Houston, Texas
- Geomechanical Pumped Storage (GPS) technology using 1-10 MW, 10+hour modules for flexible and precise deployment

Antora Energy



ANTORA



- Sunnyvale, California
- Heated carbon block (up to 2,400°C) and high efficiency TPV cells
- 12 MWh energy storage for 25 hours



MONITOR

Methane Observation Networks with
Innovative Technology to Obtain Reductions

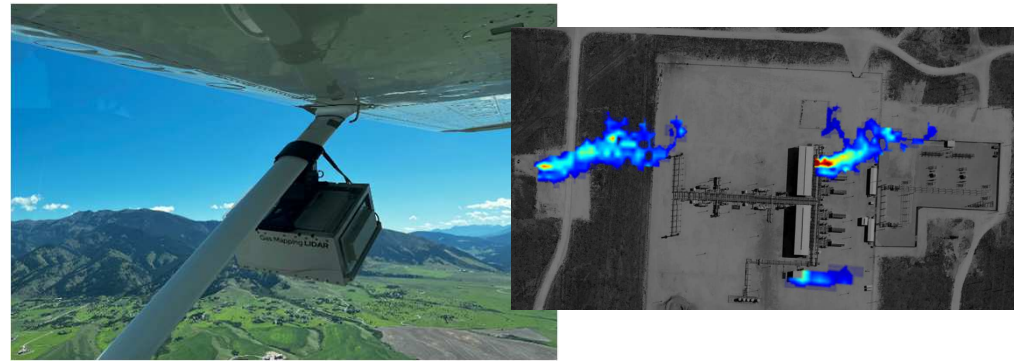
- Detect and measure methane leaks as small as 1 ton per year from a site 10 m x 10 m in area
- Certainty that would allow 90% reduction in methane loss for an annual site cost of \$3,000

LongPath Technologies



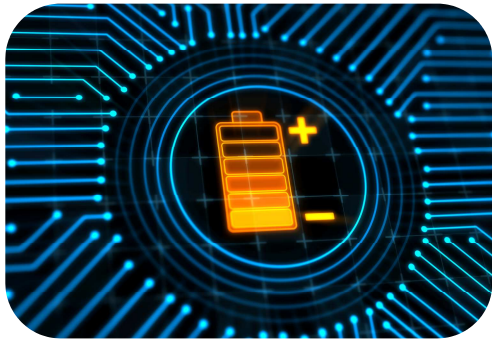
- Boulder, Colorado
- Dual-frequency comb spectrometer
- Quantifies > 90% of leaks down to 0.2 kg/hr from distance of nearly 1 mile

Bridger Photonics

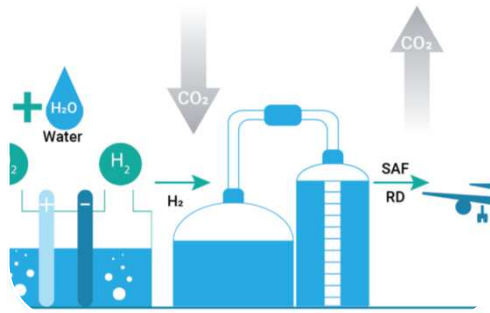


- Bozeman, Montana
- Gas Mapping LiDAR sensor attached to an aircraft
- Laser beam transmitted to target 1-300 m (1000 feet) from the sensor

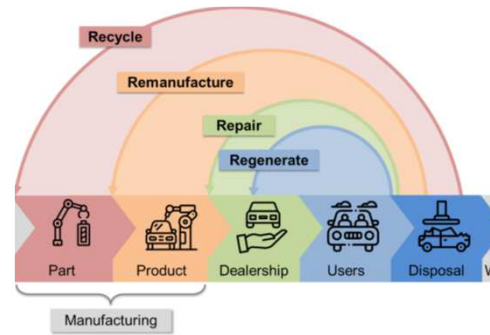
Areas of Interest



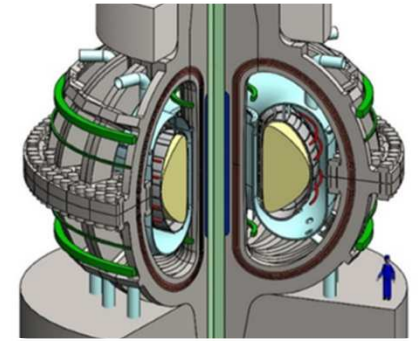
Improving Battery Energy Density



Using Renewables to Create Liquid Fuels



Supporting Battery Circularity



Making Fusion a Reality



ENERGY

INDUSTRY

GOVERNMENT

ENGINEERING

INVESTORS

RESEARCH

ACADEMIC