Advanced Research Projects Agency • ENERGY

FIRST OPEN SOLICITATION

# ALGAEVENTURE SYSTEMS

## FUEL FROM ALGAE

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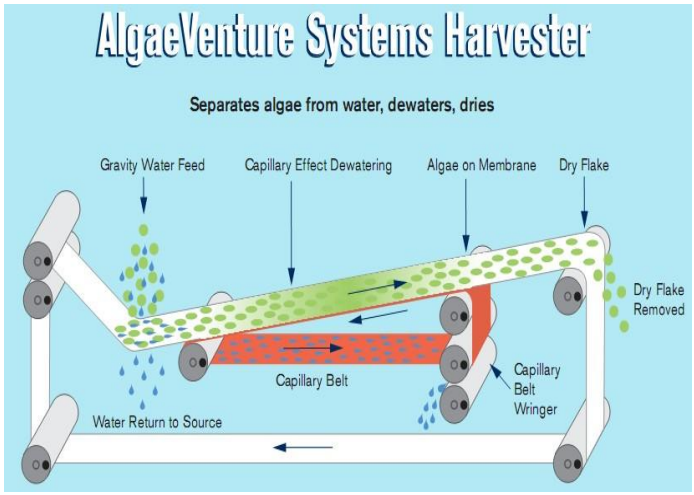
| PROJECT TITLE: | Scaling and Commercialization of Algae Harvesting Technologies | | |
| ORGANIZATION: | Algaeventure Systems (AVS) | LOCATION: | Marysville, OH |
| PROGRAM: | FOA1 | ARPA-E AWARD: | $5,992,676 |
| TECH TOPIC: | Advanced Fuels | PROJECT TERM: | 1/15/10 – 1/31/12 |
| WEBSITE: | www.algaevs.com | | |

## CRITICAL NEED

The U.S. relies almost exclusively on petroleum-based fuels to power its cars, trucks, and planes. Fossil fuels like petroleum produce harmful emissions, and they're subject to price instabilities that impact consumers. Domestically produced biofuels are a promising alternative. However, the methods used to convert algae into fuel are currently too costly and inefficient to make algae-based biofuels a commercially viable alternative to fossil fuels.

## PROJECT INNOVATION + ADVANTAGES

Led by CEO Ross Youngs, AVS has patented a cost-effective dewatering technology that separates micro-solids (algae) from water. Separating micro-solids from water traditionally requires a centrifuge, which uses significant energy to spin the water mass and force materials of different densities to separate from one another. In a comparative analysis, dewatering 1 ton of algae in a centrifuge costs around $3,400. AVS's Solid-Liquid Separation (SLS) system is less energy-intensive and less expensive, costing $1.92 to process 1 ton of algae. The SLS technology uses capillary dewatering with filter media to gently facilitate water separation, leaving behind dewatered algae which can then be used as a source for biofuels and bio-products. The biomimicry of the SLS technology emulates the way plants absorb and spread water to their capillaries.




## IMPACT

If successful, AVS would significantly decrease the production cost of biofuels made from algae.

- SECURITY: Increasing production of domestic biofuels could help the U.S. cut foreign oil imports by 33% in 15 years.
- ENVIRONMENT: Widespread use of biofuels, biopower, and other bio-based products has the potential to conserve 1.26 billion barrels of oil, 58 million tons of coal, and 682 million tons of carbon dioxide from 2020–2030.
- ECONOMY: Widespread use of biofuels would help reduce and stabilize gas prices for consumers.
- JOBS: Increasing domestic biofuels production would create jobs for Americans in industries like agriculture and engineering.

## CONTACTS

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