



Center for Applied Energy Research

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History of CAER

- Created by Act of the KY Legislature in 1974.
- Center opened in 1977.
- Lab was intended to support growing synthetic fuels industry (coal and oil shale).
- Transferred to the University of Kentucky in 1988.

OUR MISSION

To execute a research program designed to develop new and more effective and environmentally acceptable use for coal and to improve existing uses for Kentucky's fossil fuels and other natural resources.

- KY Acts 90 Ch 325

Focused on Kentucky Issues



Environment

Reducing environmental impacts of energy production and use.



Coal Ash & Waste

Exploring beneficial uses for coal ash and industrial waste.



Renewables

Developing a renewable portfolio standard.



Cost & Reliability

Insuring the affordable cost and reliability of power in the state.



Efficiency

Discovering new ways to improve energy efficiency.



Security

Improving fuel security and domestic resource utilization.



Economy

Promoting economic development in Kentucky.

Who We Are

153

UK CAER employs 153 total personnel, as of August 2016.

13 Faculty

63 Scientists & Engineers

5 Tech Support

10 Postdoctoral Scholars

2 Technicians

19 Admin & Facilities

41 Students

SCIENTISTS



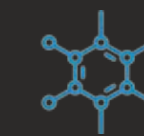
Chemistry



Materials



Physics



Biology



Geology

ENGINEERS



Chemical



Materials



Mechanical



Civil



Biosystems



Mining

UK CAER Funding 2015-2016

General Fund	\$5.3M
Utilities & Supplies	\$1.4M
Cost Share	\$542,000
Salaries	\$3.4M
<i>Operations & Maintenance covered by the General Fund.</i>	
Grants, Contracts & Income	\$25.5M

UK CAER Research Funding

Sponsored Project Awards	
2016	\$18.8M
2015	\$15M
2014	\$18.4M
2013	\$13.9M
2012	\$12.6M

Our Facilities



Laboratory 1

55,000 sq. ft.



Laboratory 2

43,000 sq. ft.

Mineral Processing

6,500 sq. ft.

Fiber Development

4,800 sq. ft.

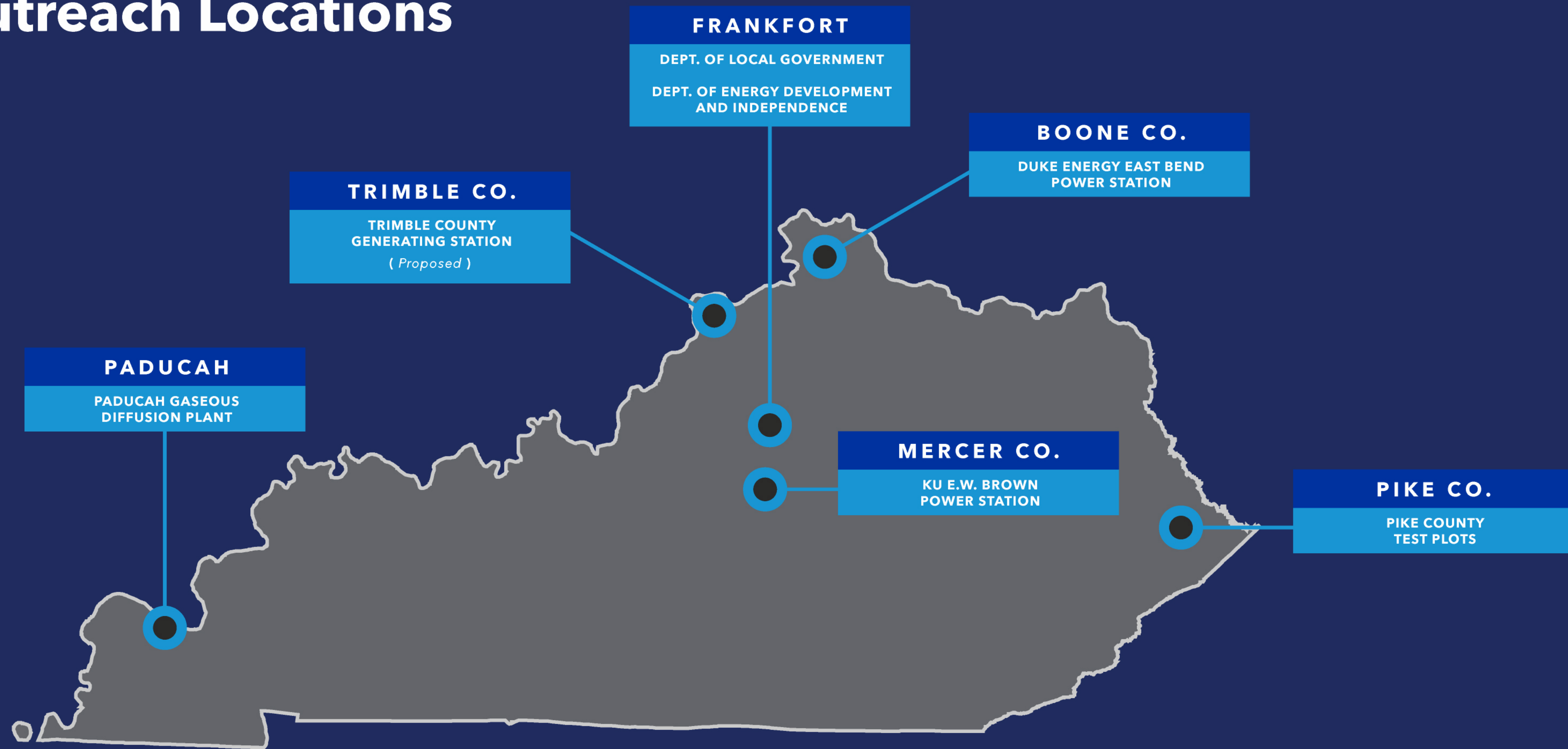
CAER Greenhouse

2,500 sq. ft.

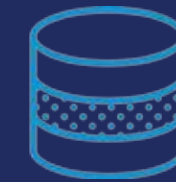
Synthesis & Pitch Lab

1,400 sq. ft.

UK CAER Statewide Offices and Outreach Locations



What We Do



Developing technologies to address Kentucky's energy needs.



Protecting Kentucky's environment.



Partnering with Kentucky industry to add value to their operations.



Taking technology from bench to practice.



Providing hands-on scientific experiences to Kentucky students.

- P-12 Education
- Undergraduate Research
- Graduate Students

How We Do This

Collaborative Research Groups



Biofuels and
Environmental Catalysis



Power Generation and
Carbon Management



Material Technologies
Carbon materials & materials from
ash and other byproducts



Clean Fuels and
Chemicals



Remediation and
Environmental Monitoring



Organic
Electronics

Questions?

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