Energy and Natural Resources Course of Study

The Energy and Natural Resource Cluster prepares students for careers focused on extraction, production and management of energy and natural resources while emphasizing environmental stewardship and resource conservation.

November 12, 2026



Process Overview

- The Energy and Natural Resources Cluster was adopted nationally in December 2022 to meet industry and workforce demands.
- Committee comprised of 16 teachers, administrators, and post-secondary educators
- Meetings were held from April 2026 - October 2026
- Conducted two rounds of public review
    - Sought industry, educator, and general public input
    - Outreach to university faculty across the state - engineering, wildlife sciences, geology, and more





Energy and Natural Resources Committee and Task Force

- Andalusia City Schools
- Auburn University
- Calhoun County Schools
- Chambers County Schools
- Chilton County Schools
- Franklin County School
- Hale County Schools
- Hoover City Schools
- Limestone County Schools
- Montgomery County Schools
- Morgan County Schools
- Phenix City Schools
- Talladega County Schools
- Tallapoosa County Schools





Conceptual Framework





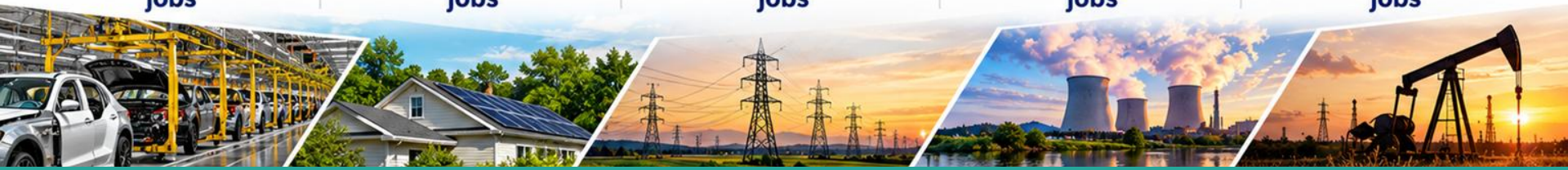
The construction of the Energy and Natural Resources course of study marks the beginning of a new cycle of revisions for CTE clusters. The use of the spaceship and planet imagery represents this cycle's theme.

ALABAMA HAD 164,000 ENERGY WORKERS IN 2025



The energy workforce is made up of a diversified group in *Alabama.*

Motor vehicles	Energy Efficiency	Transmission, Distribution & Storage	Electric Power Generation	Fuels (oil, gas, biofuels)
81,100 jobs	31,400 jobs	29,800 jobs	11,600 jobs	10,400 jobs



Energy and Natural Resources Overview



Content developed and organized:

- Targeted for Grades 9-12
- Based on workforce development and higher education
- Analyzed programs from other states
- Establishes foundational understanding of energy and natural resources with a focus on STEM and literacy skills
- Promotes problem solving, communication, leadership, and employability skills



CTSO Options:

- National FFA Organization (FFA), SkillsUSA, Technology Student Association (TSA)

Energy and Natural Resources Overview

THREE PROGRAMS		
NATURAL RESOURCES	ENERGY AND SUSTAINABLE TECHNOLOGIES	POWER AND SOCIETY
• Earth Resources and Extraction • Environmental Engineering • Environmental Management	• Energy Efficiency and Sustainable Systems • Energy Generation and Power Systems	• Line Worker • Line Worker Service Equipment • Public Utilities
COURSES ACROSS PROGRAM AREAS		
Introduction to Energy and Natural Resources; Heavy Equipment in Energy and Natural Resources; Geospatial Systems Applications; CTE Lab; Career Pathway Project		

*Additional courses will be offered through various other clusters

Energy and Natural Resources: Progression of Rigor

Content Knowledge	**Describe the major forms of energy and explain how energy is converted from one form to another, including how energy from the sun is captured, stored, transformed, and released through natural systems on Earth.**
Critical Thinking	**Analyze how population growth, consumer choices, industrial changes, and future technology affect the power grid and influence how changes are made to the grid.**
Skills-Development	**Calculate the energy efficiency of a device or process, using input and output data and including cost savings and return on investment.**
Industry Expectations	**Collect and analyze geospatial data to support decisions regarding the usage and management of natural resources.**

Comments? Questions? Concerns?

