

(c) Data collection

Under the program, the Secretary shall collect data on—

- (1) the status and location of marginal wells and oil and gas reservoirs;
- (2) the production capacity of marginal wells and oil and gas reservoirs;
- (3) the location of low-pressure gathering facilities and pipelines; and
- (4) the quantity of natural gas vented or flared in association with crude oil production.

(d) Analysis

Under the program, the Secretary shall—

- (1) estimate the remaining producible reserves based on variable pipeline pressures; and
- (2) recommend measures that will enable the continued production of those resources.

(e) Study**(1) In general**

The Secretary may award a grant to an organization of States that contain significant numbers of marginal oil and natural gas wells to conduct an annual study of low-volume natural gas reservoirs.

(2) Organization with no GIS capabilities

If an organization receiving a grant under paragraph (1) does not have GIS capabilities, the organization shall contract with an institution of higher education with GIS capabilities.

(3) State geologists

The organization receiving a grant under paragraph (1) shall collaborate with the State geologist of each State being studied.

(f) Public information

The Secretary may use the data collected and analyzed under this section to produce maps and literature to disseminate to States to promote conservation of natural gas reserves.

(Pub. L. 109–58, title IX, §966, Aug. 8, 2005, 119 Stat. 893.)

§ 16297. Complex Well Technology Testing Facility

The Secretary, in coordination with industry leaders in extended research drilling technology, shall establish a Complex Well Technology Testing Facility at the Rocky Mountain Oilfield Testing Center to increase the range of extended drilling technologies.

(Pub. L. 109–58, title IX, §967, Aug. 8, 2005, 119 Stat. 894.)

§ 16298. Carbon utilization program**(a) In general**

The Secretary, in consultation with the Administrator of the Environmental Protection Agency, shall carry out a program of research, development, demonstration, and commercialization relating to carbon utilization.

(b) Activities

Under the program described in subsection (a), the Secretary shall—

(1) assess and monitor—

(A) potential changes in lifecycle carbon dioxide and other greenhouse gas emissions; and

(B) other environmental safety indicators of new technologies, practices, processes, or methods used in enhanced hydrocarbon recovery as part of the activities authorized under section 16293 of this title;

(2) identify and evaluate novel uses for carbon (including conversion of carbon oxides) that, on a full lifecycle basis, achieve a permanent reduction, or avoidance of a net increase, in carbon dioxide in the atmosphere, for use in commercial and industrial products such as—

(A) chemicals;

(B) plastics;

(C) building materials;

(D) fuels;

(E) cement;

(F) products of coal utilization in power systems or in other applications; and

(G) other products with demonstrated market value;

(3) identify and assess carbon capture technologies for industrial systems; and

(4) identify and assess alternative uses for coal that result in zero net emissions of carbon dioxide or other pollutants, including products derived from carbon engineering, carbon fiber, and coal conversion methods.

(c) Prioritization

In supporting demonstration and commercialization research under the program described in subsection (a), the Secretary shall prioritize consideration of projects that—

(1) have access to a carbon dioxide emissions stream generated by a stationary source in the United States that is capable of supplying not less than 250 metric tons per day of carbon dioxide for research;

(2) have access to equipment for testing small-scale carbon dioxide utilization technologies, with onsite access to larger test bays for scale-up; and

(3) have 1 or more existing partnerships with a National Laboratory, an institution of higher education, a private company, or a State or other government entity.

(d) Coordination

The Secretary shall coordinate the activities authorized under this section with the activities authorized in section 16298a of this title as part of a single consolidated program of the Department.

(e) Authorization of appropriations

There is authorized to be appropriated to the Secretary to carry out this section \$50,000,000, to remain available until expended.

(Pub. L. 109–58, title IX, §969, as added Pub. L. 116–260, div. S, §102(c)(1), Dec. 27, 2020, 134 Stat. 2248.)

§ 16298a. Carbon utilization program**(a) In general**

The Secretary shall establish a program of research, development, and demonstration for carbon utilization—

(1) to assess and monitor—

(A) potential changes in lifecycle carbon dioxide and other greenhouse gas emissions; and

(B) other environmental safety indicators of new technologies, practices, processes, or methods used in enhanced hydrocarbon recovery as part of the activities authorized under section 16293 of this title;

(2) to identify and assess novel uses for carbon, including the conversion of carbon and carbon oxides for commercial and industrial products and other products with potential market value;

(3) to identify and assess carbon capture technologies for industrial systems; and

(4) to identify and assess alternative uses for raw coal and processed coal products in all phases that result in no significant emissions of carbon dioxide or other pollutants, including products derived from carbon engineering, carbon fiber, and coal conversion methods.

(b) Demonstration programs for the purpose of commercialization

(1) In general

Not later than 180 days after December 27, 2020, as part of the program established under subsection (a), the Secretary shall establish a 2-year demonstration program in each of the 2 major coal-producing regions of the United States for the purpose of partnering with private institutions in coal mining regions to accelerate the commercial deployment of coal-carbon products.

(2) Cost sharing

Activities under paragraph (1) shall be subject to the cost-sharing requirements of section 16352 of this title.

(c) Carbon Utilization Research Center

(1) In general

In carrying out the program under subsection (a), the Secretary shall establish and operate a national Carbon Utilization Research Center (referred to in this subsection as the “Center”), which shall focus on early stage research and development activities including—

(A) post-combustion and pre-combustion capture of carbon dioxide;

(B) advanced compression technologies for new and existing fossil fuel-fired power plants;

(C) technologies to convert carbon dioxide to valuable products and commodities; and

(D) advanced carbon dioxide storage technologies that consider a range of storage regimes.

(2) Selection

The Secretary shall—

(A) select the Center under this subsection on a competitive, merit-reviewed basis; and

(B) consider applications from the National Laboratories, institutions of higher education, multiinstitutional collaborations, and other appropriate entities.

(3) Existing centers

In selecting the Center under this subsection, the Secretary shall prioritize carbon

utilization research centers in existence on December 27, 2020.

(4) Duration

The Center established under this subsection shall receive support for a period of not more than 5 years, subject to the availability of appropriations.

(5) Renewal

On the expiration of any period of support of the Center, the Secretary may renew support for the Center, on a merit-reviewed basis, for a period of not more than 5 years.

(6) Termination

Consistent with the existing authorities of the Department, the Secretary may terminate the Center for cause during the performance period.

(d) Authorization of appropriations

There are authorized to be appropriated to the Secretary to carry out this section—

(1) \$54,000,000 for fiscal year 2021;

(2) \$55,250,000 for fiscal year 2022;

(3) \$56,562,500 for fiscal year 2023;

(4) \$57,940,625 for fiscal year 2024; and

(5) \$59,387,656 for fiscal year 2025.

(e) Coordination

The Secretary shall coordinate the activities authorized in this section with the activities authorized in section 16298 of this title as part of one consolidated program at the Department. Nothing in section 16298 of this title shall be construed as limiting the authorities provided in this section.

(Pub. L. 109–58, title IX, §969A, as added Pub. L. 116–260, div. Z, title IV, §4004(a)(1), Dec. 27, 2020, 134 Stat. 2539.)

§ 16298b. High efficiency turbines

(a) In general

The Secretary, acting through the Assistant Secretary for Fossil Energy (referred to in this section as the “Secretary”), shall establish a multiyear, multiphase program (referred to in this section as the “program”) of research, development, and technology demonstration to improve the efficiency of gas turbines used in power generation systems and aviation.

(b) Program elements

The program shall—

(1) support first-of-a-kind engineering and detailed gas turbine design for small-scale and utility-scale electric power generation, including—

(A) high temperature materials, including superalloys, coatings, and ceramics;

(B) improved heat transfer capability;

(C) manufacturing technology required to construct complex 3-dimensional geometry parts with improved aerodynamic capability;

(D) combustion technology to produce higher firing temperature while lowering nitrogen oxide and carbon monoxide emissions per unit of output;

(E) advanced controls and systems integration;