cations of a hydrogen infrastructure, and the benefits potentially derived from a hydrogen infrastructure.

(b) Wind energy technologies

The Secretary shall—

(1) prepare a detailed roadmap for carrying out the provisions in this subchapter related to wind energy technologies and for implementing the recommendations related to wind energy technologies that are included in the report transmitted under subsection (e); and

(2) provide for the establishment of 5 projects in geographic areas that are regionally and climatically diverse to demonstrate the production of hydrogen at existing wind energy facilities, including one demonstration project at a National Laboratory or institution of higher education.

(c) Program support

The Secretary shall support programs at institutions of higher education for the development of solar energy technologies and wind energy technologies for the production of hydrogen. The programs supported under this subsection shall—

(1) enhance fellowship and faculty assistance programs;

(2) provide support for fundamental research;

(3) encourage collaborative research among industry, National Laboratories, and institutions of higher education;

(4) support communication and outreach; and

(5) to the greatest extent possible—

(A) be located in geographic areas that are regionally and climatically diverse; and

(B) be located at part B institutions, minority institutions, and institutions of higher education located in States participating in the Experimental Program to Stimulate Competitive Research of the Department.

(d) Institutions of higher education and National Laboratory interactions

In conjunction with the programs supported under this section, the Secretary shall develop sabbatical, fellowship, and visiting scientist programs to encourage National Laboratories and institutions of higher education to share and exchange personnel.

(e) Report

The Secretary shall transmit to the Congress not later than 120 days after August 8, 2005, a report containing detailed summaries of the roadmaps prepared under subsections (a)(1) and (b)(1), descriptions of the Secretary's progress in establishing the projects and other programs required under this section, and recommendations for promoting the availability of advanced solar and wind energy technologies for the production of hydrogen.

(f) Definitions

For purposes of this section—

(1) the term ''concentrating solar power devices'' means devices that concentrate the power of the sun by reflection or refraction to improve the efficiency of a photovoltaic or thermal generation process;

(2) the term ''minority institution'' has the meaning given to that term in section 1067k of title 20;

(3) the term ''part B institution'' has the meaning given to that term in section 1061 of title 20; and

(4) the term ''photovoltaic devices'' means devices that convert light directly into electricity through a solid-state, semiconductor process.

(g) Authorization of appropriations

There is authorized to be appropriated such sums as are necessary for carrying out the activities under this section for each of fiscal years 2006 through 2020.

(Pub. L. 109–58, title VIII, §812, Aug. 8, 2005, 119 Stat. 853.)

§ 16161a. Regional clean hydrogen hubs

(a) Definition of regional clean hydrogen hub

In this section, the term ''regional clean hydrogen hub'' means a network of clean hydrogen producers, potential clean hydrogen consumers, and connective infrastructure located in close proximity.

(b) Establishment of program

The Secretary shall establish a program to support the development of at least 4 regional clean hydrogen hubs that—

(1) demonstrably aid the achievement of the clean hydrogen production standard developed under section 16166(a) of this title;

(2) demonstrate the production, processing, delivery, storage, and end-use of clean hydrogen; and

(3) can be developed into a national clean hydrogen network to facilitate a clean hydrogen economy.

(c) Selection of regional clean hydrogen hubs

(1) Solicitation of proposals

Not later than 180 days after November 15, 2021, the Secretary shall solicit proposals for regional clean hydrogen hubs.

(2) Selection of hubs

Not later than 1 year after the deadline for the submission of proposals under paragraph (1), the Secretary shall select at least 4 regional clean hydrogen hubs to be developed under subsection (b).

(3) Criteria

The Secretary shall select regional clean hydrogen hubs under paragraph (2) using the following criteria:

(A) Feedstock diversity

To the maximum extent practicable—

(i) at least 1 regional clean hydrogen hub shall demonstrate the production of clean hydrogen from fossil fuels;

(ii) at least 1 regional clean hydrogen hub shall demonstrate the production of clean hydrogen from renewable energy; and

(iii) at least 1 regional clean hydrogen hub shall demonstrate the production of clean hydrogen from nuclear energy.

(B) End-use diversity

To the maximum extent practicable—

(i) at least 1 regional clean hydrogen hub shall demonstrate the end-use of clean hydrogen in the electric power generation sector;

(ii) at least 1 regional clean hydrogen hub shall demonstrate the end-use of clean hydrogen in the industrial sector;

(iii) at least 1 regional clean hydrogen hub shall demonstrate the end-use of clean hydrogen in the residential and commercial heating sector; and

(iv) at least 1 regional clean hydrogen hub shall demonstrate the end-use of clean hydrogen in the transportation sector.

(C) Geographic diversity

To the maximum extent practicable, each regional clean hydrogen hub—

(i) shall be located in a different region of the United States; and

(ii) shall use energy resources that are abundant in that region.

(D) Hubs in natural gas-producing regions

To the maximum extent practicable, at least 2 regional clean hydrogen hubs shall be located in the regions of the United States with the greatest natural gas resources.

(E) Employment

The Secretary shall give priority to regional clean hydrogen hubs that are likely to create opportunities for skilled training and long-term employment to the greatest number of residents of the region.

(F) Additional criteria

The Secretary may take into consideration other criteria that, in the judgment of the Secretary, are necessary or appropriate to carry out this subchapter[1]

(4) Funding of regional clean hydrogen hubs

The Secretary may make grants to each regional clean hydrogen hub selected under paragraph (2) to accelerate commercialization of, and demonstrate the production, processing, delivery, storage, and end-use of, clean hydrogen.

(d) Authorization of appropriations

There is authorized to be appropriated to the Secretary to carry out this section $8,000,000,000 for the period of fiscal years 2022 through 2026.

(Pub. L. 109–58, title VIII, § 813, as added Pub. L. 117–58, div. D, title III, § 40314(2), Nov. 15, 2021, 135 Stat. 1008.)

Editorial Notes

PRIOR PROVISIONS

A prior section 813 of Pub. L. 109–58 was renumbered section 818 and is classified to section 16162 of this title.

Statutory Notes and Related Subsidiaries

WAGE RATE REQUIREMENTS

For provisions relating to rates of wages to be paid to laborers and mechanics on projects for construction, alteration, or repair work funded under div. D or an amendment by div. D of Pub. L. 117–58, including authority of Secretary of Labor, see section 18851 of this title.

[1] So in original. Probably should be followed by a period.

§ 16161b. National clean hydrogen strategy and roadmap

(a) Development

(1) In general

In carrying out the programs established under sections 16154 and 16161a of this title, the Secretary, in consultation with the heads of relevant offices of the Department, shall develop a technologically and economically feasible national strategy and roadmap to facilitate widescale production, processing, delivery, storage, and use of clean hydrogen.

(2) Inclusions

The national clean hydrogen strategy and roadmap developed under paragraph (1) shall focus on—

(A) establishing a standard of hydrogen production that achieves the standard developed under section 16166(a) of this title, including interim goals towards meeting that standard;

(B)(i) clean hydrogen production and use from natural gas, coal, renewable energy sources, nuclear energy, and biomass; and

(ii) identifying potential barriers, pathways, and opportunities, including Federal policy needs, to transition to a clean hydrogen economy;

(C) identifying—

(i) economic opportunities for the production, processing, transport, storage, and use of clean hydrogen that exist in the major shale natural gas-producing regions of the United States;

(ii) economic opportunities for the production, processing, transport, storage, and use of clean hydrogen that exist for merchant nuclear power plants operating in deregulated markets; and

(iii) environmental risks associated with potential deployment of clean hydrogen technologies in those regions, and ways to mitigate those risks;

(D) approaches, including substrategies, that reflect geographic diversity across the country, to advance clean hydrogen based on resources, industry sectors, environmental benefits, and economic impacts in regional economies;

(E) identifying opportunities to use, and barriers to using, existing infrastructure, including all components of the natural gas infrastructure system, the carbon dioxide pipeline infrastructure system, end-use local distribution networks, end-use power generators, LNG terminals, industrial users of natural gas, and residential and commercial consumers of natural gas, for clean hydrogen deployment;

(F) identifying the needs for and barriers and pathways to developing clean hydrogen hubs (including, where appropriate, clean hydrogen hubs coupled with carbon capture, utilization, and storage hubs) that—

(i) are regionally dispersed across the United States and can leverage natural gas to the maximum extent practicable;