II

111TH CONGRESS
1ST SESSION

S. 1713

To establish loan guarantee programs to develop biochar technology using excess plant biomass, to establish biochar demonstration projects on public land, and for other purposes.

IN THE SENATE OF THE UNITED STATES

SEPTEMBER 24, 2009

Mr. REID (for himself, Mr. BAUCUS, Mr. HATCH, Mr. TESTER, and Mr. UDALL of New Mexico) introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

---

A BILL

To establish loan guarantee programs to develop biochar technology using excess plant biomass, to establish biochar demonstration projects on public land, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the ''Water Efficiency via Carbon Harvesting and Restoration (WECHAR) Act of 2009''.

SEC. 2. FINDINGS AND PURPOSE.

(a) FINDINGS.—Congress finds that—

(1) numerous expert reports have brought attention to the negative impacts caused by invasive weed species, including the consumption of water in areas with diminishing supplies;

(2) salt cedar, or Tamarix species, a noxious and invasive plant commonly found on public land can consume 200 gallons of water per plant each day;

(3) salt cedar now covers as much as 1,000,000 acres of floodplains, riparian acres, wetland, and lake margins in the Western United States;

(4) minimizing the impact of and eradicating invasive species that wrest water from delicate watersheds is in the best interest of the United States;

(5) as drought conditions worsen and legal requirements relating to water supply accelerate water shortages, innovative approaches are needed to address the increasing demand for water;

(6) pine bark beetle has killed thousands of acres of standing forests in the Western United States, creating a hazardous buildup of dead tree biomass that is a serious fire threat to those and surrounding areas;

(7) biochar technology would result in a more cost-effective, environmentally beneficial, and suc-

cessful approach to combating invasive weeds and removing excess biomass and plant waste from public land;

(8) invasive weeds and excess biomass on public land can serve as feedstock for biochar and alternative fuel production;

(9) it is in the best interest of the United States to conduct a comprehensive and thorough research, development, and demonstration program on biochar and related bioenergy so as to better understand how to use excess biomass available on public land; and

(10) biochar production and use systems have been shown to have many ancillary beneficial environmental impacts.

(b) PURPOSES.—The purposes of this Act are—

(1) to restore the natural hydrology of Western landscapes by removing water-intensive invasive plant species;

(2) to reduce dangerous forest and rangeland fuel loads;

(3) to develop technologies to convert undesirable invasive plant species to useful materials;

(4) to develop markets for those materials; and

(5) to provide technologies to land managers to continue those processes into the future.

SEC. 3. DEFINITIONS.

In this Act:

(1) BIOCHAR.—The term ''biochar'' means charcoal or black carbon derived from organic matter through pyrolysis.

(2) BIOENERGY.—The term ''bioenergy'' means hydrocarbons derived from organic matter through pyrolysis, including bio-oil, syngas, or thermal energy.

(3) EXCESS BIOMASS.—

(A) IN GENERAL.—The term ''excess biomass'' means any plant matter targeted for removal from public land to promote ecosystem health.

(B) INCLUSIONS.—The term ''excess biomass'' includes—

(i) trees or tree waste on public land;

(ii) wood and wood wastes and residues; and

(iii) weedy plants and grasses (including aquatic, noxious, or invasive plants).

(4) FEEDSTOCK.—The term ''feedstock'' means excess biomass in the form of plant matter or mate-

rials that serves as the raw material for the production of biochar and bioenergy.

(5) INVASIVE PLANT SPECIES.—The term ''invasive plant species'' means a species—

(A) that is nonnative to a specified ecosystem; and

(B) the introduction to an ecosystem of which causes, or may cause, harm to—

(i) the economy;

(ii) the environment;

(iii) water resources; or

(iv) human, animal, or plant health.

(6) SECRETARY CONCERNED.—The term ''Secretary concerned'' means the Secretary of the Interior or the Secretary of Agriculture, as appropriate.

SEC. 4. RESOURCE ASSESSMENT.

(a) IN GENERAL.—The Director of the United States Geological Survey shall conduct resources assessments that collect and synthesize interagency and State data to quantify—

(1) invasive plant species and excess biomass in the form of dangerous fuel loads on public land that can be used for feedstock;

(2) estimated carbon content in that feedstock;

(3) estimated potential biochar and bioenergy producible from that feedstock; and

(4) potential water savings resulting from removal of invasive plant species and excess biomass on public land, by watershed.

(b) REPORT.—Not later than 1 year after the date of enactment of this Act and biennially thereafter, the Director of United States Geological Survey shall submit to Congress a report that describes the results of each resource assessment conducted under subsection (a).

SEC. 5. TECHNOLOGY RESEARCH.

(a) DEVELOPMENT OF MOBILE BIOCHAR PRODUCTION UNITS.—Not later than 1 year after the date of enactment of this Act and in accordance with subsection (c), the Secretary of the Interior shall establish a program to provide guarantees of loans by private institutions—

(1) to develop and optimize commercially and technologically viable biochar production units that—

(A) are designed to use woody invasive plant species and excess biomass feedstock such as tamarisk, pinyon pine, and juniper;

(B) produce net negative carbon emissions relative to natural decomposition;

(C) are self-contained on a portable platform suitable for deployment to remote locations and on unpaved roads; and

(D) can capture biochar and bioenergy produced for immediate energy needs or transport to market; and

(2) to produce, not later than 2 years after the date of securing a guaranteed loan under this section for the purposes described in section 7(a)(2), 4 biochar production units for deployment to remote landscapes, of which—

(A) 2 shall be dedicated primarily to contract work with the Bureau of Land Management; and

(B) 2 shall be dedicated primarily to contract work with the National Park Service.

(b) DEVELOPMENT OF FIXED BIOCHAR PRODUCTION UNITS.—Not later than 1 year after the date of enactment of this Act and in accordance with subsection (c), the Secretary of Agriculture shall establish a program to provide guarantees of loans by private institutions—

(1) to develop and optimize commercially and technologically viable biochar production units that—

(A) while not necessarily self contained, can be disassembled, moved, and reassembled to be operational on a new site within 30 days, so as to support fuels reduction work;

(B) are designed to use excess biomass feedstock, such as trees killed by bark beetle infestations;

(C) produce net negative carbon emissions relative to natural decomposition;

(D) can capture biochar and bioenergy produced for immediate energy needs or transport to market; and

(2) to produce, not later than 2 years after the date of securing a guaranteed loan under this section for the purposes described in section 7(a)(3), 2 biochar production units for deployment to remote landscapes.

(c) GUARANTEED LOAN PROGRAM.—

(1) IN GENERAL.—The Secretary concerned may provide loan guarantees under this section to an applicant if the biochar production units produced by the applicant will be dedicated primarily to contract restoration work with the Bureau of Land Management, National Park Service, or Forest Service, using—

(A) pinyon pine and juniper feedstock in the Great Basin;

(B) tamarisk feedstock in the Mojave Desert; or

(C) excess biomass feedstock, such as trees killed by bark beetle infestations in the Inter-mountain West.

(2) CRITERIA.—In selecting recipients of loan guarantees from among applicants, the Secretary concerned shall give preference to proposals that, as determined by the Secretary concerned—

(A) meet all applicable Federal and State permitting requirements;

(B) are most likely to be successful; and

(C) are located in local markets that have the greatest need for the biochar production units due to—

(i) identified high-priority landscape restoration needs;

(ii) availability of sufficient quantities of feedstocks described in subsection (b); or

(iii) a high level of demand for biochar or other commercial byproducts of the biochar production units.

(3) MATURITY.—A loan guaranteed under this section shall have a maturity of not more than 20 years.

(4) TERMS AND CONDITIONS.—The loan agreement for a loan guaranteed under this section shall provide that no provision of the loan agreement may be amended or waived without the consent of the Secretary.

(5) GUARANTEE FEE.—The recipient of a loan guarantee under this section shall pay to the Secretary concerned a guarantee fee in an amount determined by the Secretary concerned to be sufficient to cover the administrative costs of the Secretary concerned relating to the loan guarantee.

(6) FULL FAITH AND CREDIT.—

(A) IN GENERAL.—The full faith and credit of the United States is pledged to the payment of all guarantees made by the Secretary concerned under this section.

(B) EVIDENCE.—Any guarantee made by the Secretary concerned under this section shall be conclusive evidence of the eligibility of the loan for the guarantee with respect to principal and interest.

(C) VALIDITY.—The validity of any guarantee made by the Secretary concerned under this section shall be incontestable in the hands of a holder of the guaranteed loan.

(7) ANNUAL REPORTS.—Until the date on which each guaranteed loan under this section has been repaid in full, each year the Secretary concerned shall submit to Congress a report on the activities of the Secretary concerned under this section during the preceding year.

SEC. 6. EXISTING TECHNOLOGY.

(a) IN GENERAL.—The Secretary of the Interior and the Secretary of Agriculture shall each establish a program to provide guarantees of loans by private institutions for the construction or acquisition of facilities for the production of biochar.

(b) REQUIREMENT.—The Secretary concerned may provide a loan guarantee under this section to an applicant if facilities constructed or acquired by the applicant will be dedicated primarily to contract restoration work with the Bureau of Land Management, National Park Service, or Forest Service, using—

(1) pinyon pine and juniper feedstock in the Great Basin;

(2) tamarisk feedstock in the Mojave Desert; or

(3) excess biomass feedstock, such as trees killed by bark beetle infestations in the Intermountain West.

(c) CRITERIA.—In selecting recipients of loan guarantees from among applicants, the Secretary concerned shall give preference to proposals that, as determined by the Secretary concerned—

(1) meet all applicable Federal and State permitting requirements;

(2) are most likely to be successful; and

(3) are located in local markets that have the greatest need for the facility due to—

(A) identified high-priority landscape restoration needs;

(B) availability of sufficient quantities of feedstocks described in subsection (b); or

(C) a high level of demand for biochar or other commercial byproducts of the facility.

(d) MATURITY.—A loan guaranteed under this section shall have a maturity of not more than 20 years.

(e) TERMS AND CONDITIONS.—The loan agreement for a loan guaranteed under this section shall provide that no provision of the loan agreement may be amended or waived without the consent of the Secretary concerned.

(f) GUARANTEE FEE.—The recipient of a loan guarantee under this section shall pay the Secretary concerned a guarantee fee in an amount determined by the Secretary concerned to be sufficient to cover the administrative costs of the Secretary concerned relating to the loan guarantee.

(g) FULL FAITH AND CREDIT.—

(1) IN GENERAL.—The full faith and credit of the United States is pledged to the payment of all guarantees made by the Secretary concerned under this section.

(2) EVIDENCE.—Any guarantee made by the Secretary concerned under this section shall be conclusive evidence of the eligibility of the loan for the guarantee with respect to principal and interest.

(3) VALIDITY.—The validity of any guarantee made by the Secretary concerned under this section shall be incontestable in the hands of a holder of the guaranteed loan.

(h) ANNUAL REPORTS.—Until the date on which each guaranteed loan under this section has been repaid in full, each year the Secretary concerned shall submit to Congress a report on the activities of the Secretary concerned under this section during the preceding year.

SEC. 7. DEPLOYMENT.

(a) NEW TECHNOLOGY.—

(1) IN GENERAL.—Not later than 2 years after the date of enactment of this Act, the Secretary of the Interior and the Secretary of Agriculture shall initiate 3-year programs to employ the biochar production units provided under section 5 in pilot applications in various climates and ecosystems of the United States.

(2) MOBILE UNITS.—In the case of biochar production units developed or optimized under section 5(a)—

(A) the Director of the National Park Service shall carry out initial programs using invasive tamarisk in the Mojave Desert as feedstock; and

(B) the Director of the Bureau of Land Management shall carry out initial programs using excess pinyon pine and juniper biomass in the Great Basin as feedstock.

(3) FIXED UNITS.—In the case of biochar production units developed or optimized under section 5(b), the Chief of the Forest Service shall carry out the initial program using bark beetle-killed trees in the Intermountain West.

(b) EXISTING TECHNOLOGY.—

(1) IN GENERAL.—Not later than 180 days after enactment of this Act, the Secretary of the Interior and the Secretary of Agriculture shall prepare plans for carrying out 3-year landscape restoration programs in various climates and ecosystems of the United States to employ facilities constructed or acquired under section 6.

(2) REQUIREMENTS.—In carrying out the landscape restoration programs described in paragraph (1), the Secretary of the Interior and the Secretary of Agriculture shall carry out programs using invasive tamarisk in the Mojave Desert, excess pinyon pine and juniper biomass in the Great Basin, and bark beetle-killed trees in the Intermountain West.

SEC. 8. APPLICATION AND MARKET RESEARCH.

(a) ATTRIBUTES.—Not later than 1 year after the date of enactment of this Act, the Secretary of Agriculture shall provide competitive grants to conduct research and analysis that identifies—

(1) attributes and composition profiles of biochar produced from different feedstocks for use as soil amendments; and

(2) attributes and composition profiles of bioenergy produced from different feedstocks for use as

fuel for transportation, heating, or other uses identified in subsection (b)(1).

(b) MARKET DEVELOPMENT.—Not later than 1 year after the date of enactment of this Act, the Secretary of Agriculture, acting through the Director of the National Institute of Food and Agriculture, the Administrator of the Agricultural Research Service, and the Administrator of the Agricultural Marketing Service shall provide competitive grants to conduct research and analysis that—

(1) identifies potential uses and markets for biochar and bioenergy; and

(2) in the case of economic and life-cycle issues, analyzes—

(A) the full production costs versus the economic benefits of biochar production systems;

(B) the impact of the production and use of biochar, including the performance of biochar in carbon sequestration programs; and

(C) the availability of feedstocks and the efficiency of using those feedstock for biochar production as compared to other biofuel-production systems.

(c) ENVIRONMENTAL REVIEW.—Not later than 1 year after the date of enactment of this Act, the Secretary

of Agriculture shall provide competitive grants to conduct research and analysis relating to—

(1) the environmental benefits of biochar production and use, including—

(A) the water savings resulting from reducing populations of invasive or noxious plant species;

(B) the potential of biochar production systems—

(i) to reduce fertilizer use, nutrient leaching, and run-off; and

(ii) to reduce water pollution from feedlot runoff by capturing ammonia; and

(C) the reduction in greenhouse gas emissions resulting from the production and use of related bioenergy;

(2) the potential environmental impacts of biochar and bioenergy use, including—

(A) the potential toxicity and other adverse ecosystem effects resulting from biochar production or use of different biochars, as identified under subsection (a)(1);

(B) the characterization of combustion products of bioenergy, as identified under sub-

section (a)(2), and the effects of those combustion products on air and water quality; and

(C) impacts on human health and safety.

(d) DEVELOPMENT OF BIOCHAR IN LANDSCAPE RESTORATION.—Not later than 1 year after the date of enactment of this Act, the Secretary of Agriculture, acting through the Director of the National Institute of Food and Agriculture and the Administrator of the Agricultural Research Service, shall provide competitive grants to research and analyze—

(1) the potential uses of biochar in landscape restoration in different ecosystems and soil types;

(2) the relative benefits and potential adverse effects of use of different biochars, as identified under subsection (a)(1) in different western ecosystems and soil types; and

(3) the safety and efficacy of different methods of application.

SEC. 9. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to carry out sections 4 through 8, including for the cost of grants and loan guarantees under those sections, such sums as are necessary for each of fiscal years 2010 through 2016.

○