111TH CONGRESS
1ST SESSION

S. 1538

To establish a black carbon and other aerosols research program in the National Oceanic and Atmospheric Administration that supports observations, monitoring, and modeling, and for other purposes.

IN THE SENATE OF THE UNITED STATES

JULY 29, 2009

Mr. ROCKEFELLER (for himself, Ms. CANTWELL, Mr. NELSON of Florida, and Mr. BEGICH) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science and Transportation

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A BILL

To establish a black carbon and other aerosols research program in the National Oceanic and Atmospheric Administration that supports observations, monitoring, and modeling, 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 ''Black Carbon and Other Aerosols Research Act of 2009''.

SEC. 2. PURPOSES.

The purposes of this Act are—

(1) to develop a monitoring and research plan—

(A) to identify natural and anthropogenic sources of black carbon and other aerosols and to monitor their atmospheric and deposited concentrations on both a temporal and a spatial scale;

(B) to measure, monitor, model, and assess black carbon and other aerosols in regard to their atmospheric concentrations and deposited forms—

(i) to establish how these substances impact regional- and global-scale climate change and air quality;

(ii) to determine their regional impacts, with a focus on the polar regions and other snow and ice covered areas; and

(iii) to estimate, in the United States and globally, spatial and temporal black carbon and other aerosol concentrations, and deposition trends in collaboration with the National Institute of Standards and Technology and other appropriate partners; and

(C) to develop models to assist policy makers and to increase understanding of—

(i) the transport and transformation of black carbon and other aerosols to improve knowledge of their distributions and climate-forcing properties; and

(ii) the individual and combined roles of black carbon and other aerosols on regional and global climate change on both a temporal and a spatial scale; and

(2) to establish a black carbon and other aerosols monitoring and research program within the National Oceanic and Atmospheric Administration.

SEC. 3. DEFINITIONS.

In this Act:

(1) ADMINISTRATOR.—The term ''Administrator'' means the Administrator of the National Oceanic and Atmospheric Administration.

(2) BLACK CARBON.—The term ''black carbon'' means the strongly light absorbing aerosol that—

(A) is composed of fine particles containing carbon produced by the incomplete combustion of fossil fuels, biofuel, and biomass and other activities;

(B) exists in both atmospheric and deposited forms; and

(C) is sometimes associated with impaired air quality and climate change.

(3) OTHER AEROSOLS.—The term ''other aerosols'' means the components of atmospheric aerosols, fine particles suspended in air, that contribute to climate-forcing and climate change, including inorganic, organic, dust, and carbonaceous substances, either separately or in combination.

SEC. 4. BLACK CARBON AND OTHER AEROSOLS MONITORING AND RESEARCH PLAN.

(a) IN GENERAL.—The Administrator shall develop an observation, monitoring, modeling, and research plan for black carbon and other aerosols that includes—

(1) analysis of gaps in scientific methods and research on—

(A) black carbon and other aerosols; and

(B) the effect of black carbon, both singly and in combination with other factors, on climate change and air quality on both a regional and a global scale;

(2) identification of priorities for Federal research on black carbon and other aerosols necessary to understand their role in climate change and air quality on both a regional and a global scale;

(3) a framework for modeling—

(A) the temporal and spatial effects of black carbon and other aerosols on climate, both singly and in combination, on regional and global scales and processes;

(B) the transportation and transformation of black carbon and other aerosols to gain insight into their distribution and climate-forcing properties; and

(C) the influence of black carbon on clouds and cloud particles to understand and quantify their role in large-scale circulation and the hydrologic cycle;

(4) appropriate methods that—

(A) identify sources of black carbon and other aerosols, both anthropogenic and naturally occurring, and

(B) measure, monitor, and increase understanding of the atmospheric concentrations and properties as well as the deposited forms,

on both a temporal and a spatial scale;

(5) a comparative evaluation of the global and regional climate-forcing properties of black carbon and other aerosols and their effect on regional and global climate change and the loss of Arctic sea ice; and

(6) observation systems, needs, and assets necessary to develop and implement a black carbon and other aerosols monitoring and research program within the National Oceanic and Atmospheric Administration.

(b) ADVISORY PANEL.—The Administrator shall establish a Black Carbon and Other Aerosols Advisory Panel to assist in the development and implementation of the plan.

(c) REPORT.—No later than 270 days after the date of enactment of this Act, the Administrator shall submit a report to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Science and Technology describing the plan required by subsection (a).

SEC. 5. BLACK CARBON AND OTHER AEROSOLS RESEARCH AND MONITORING PROGRAM.

(a) IN GENERAL.—The Administrator shall establish and maintain a black carbon and other aerosols monitoring and research program that combines observations, research, monitoring, modeling, and other activities within the National Oceanic and Atmospheric Administration, consistent with the plan required by section 4(a), that includes—

(1) coordinated monitoring and research activities to improve understanding of the sources, atmospheric concentrations, deposited forms, and interactions among black carbon and other aerosols that influence their contribution to climate change processes on both a regional and a global scale;

(2) strategic modeling activities that improve understanding of—

(A) the transportation and transformation of aerosols, to improve knowledge of their distributions and climate-forcing properties; and

(B) the separate and combined roles of black carbon and other aerosols in regional and global climate change and air quality, on regional, global and temporal scales, to improve understanding of these substances and their roles in climate change;

(3) educational opportunities that—

(A) encourage an interdisciplinary and international approach to exploring the associated sources and impacts of black carbon and other aerosols; and

(B) increase interactions between the measurement and modeling communities in order to optimize use of available data;

(4) public outreach activities that improve understanding of the current scientific knowledge of black carbon and other aerosols and their impact on climate change;

(5) coordination of black carbon and other aerosols monitoring research with the National Institute of Standards and Technology and other appropriate international and national government agencies, private entities, and others; and

(6) an assessment of the role black carbon and other aerosols have in regional and global climate change and air quality.

(b) GRANT PROGRAM.—

(1) IN GENERAL.—The Administrator shall establish a grant program to provide grants for critical research and projects that improve the ability to measure, monitor, model, and assess black carbon and other aerosols with respect to their atmospheric concentrations and deposited forms, including research that supports means of reducing the impacts of black carbon and other aerosols on climate.

(2) CONSULTATION WITH PANEL.—The Administrator shall consult with the Black Carbon and Other Aerosols Advisory Panel, and shall work cooperatively with the National Institute of Standards

and Technology and other Federal agencies, to establish criteria for such research and projects.

(3) PARTICIPATION BY FEDERAL AGENCIES.—Federal agencies may collaborate with, and participate in, such research and projects to the extent requested by the grant recipient.

(4) AWARD PROCESS.—Grants under this subsection shall be awarded extramurally through a competitive peer-reviewed, merit-based process that may be conducted jointly with other Federal agencies working on black carbon and aerosols and their role in and relationship to climate change.

(c) COORDINATION WITH OTHER AGENCIES.—The Administrator shall coordinate development of the plan under section 4 and the monitoring and research program under subsection (a) of this section with the National Institute of Standards and Technology and other relevant Federal agencies.

(d) ADDITIONAL AUTHORITY.—In conducting the program, the Administrator may execute and perform such contracts, leases, grants, or cooperative agreements as may be necessary to carry out the purposes of this Act on such terms as the Administrator considers appropriate.

SEC. 6. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the Administrator for each of fiscal years 2010 through 2015—

(1) $10,000,000 for grants under section 5(b); and

(2) $10,000,000 for the National Oceanic and Atmospheric Administration to carry out the other provisions of this Act.

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