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INTRODUCTION

We are pleased to present you with *Sustainability at the National Academies*, a monthly update highlighting activities related to sustainable development from throughout the National Academies. Please visit our website for additional information on these and other activities at <http://sustainability.nationalacademies.org>.

The [Roundtable on Science and Technology for Sustainability](#) provides a unique forum for sharing views, information, and analyses related to sustainability. The goal for the Roundtable is to mobilize, encourage, and use scientific knowledge and technology to help achieve sustainability goals and to support the implementation of sustainability practices. Through its activities, the Roundtable identifies new ways in which science and technology can contribute to sustainability. What follows is a brief summary of sustainability-related activities being conducted throughout The National Academies.

You are receiving this update based on your participation in ongoing or past activities of the Roundtable. If you would prefer not to receive future monthly updates or would like to be added to the recipient list, please contact Kathleen McAllister at 202-334-2047 or Sustainability@nas.edu or visit our website.

NEW REPORTS

Use of Biodiesel in a Transit Fleet

TRB's Transit Cooperative Research Program (TCRP) Synthesis 72: Use of Biodiesel in a Transit Fleet explores potential benefits offered by biodiesel in order to help transit agencies make informed decisions regarding its use.

http://trb.org/news/blurb_detail.asp?id=8697

Interim Report from the National Research Council Committee on Development and Implementation of a Cleanup Technology Roadmap

Over the last 60 years, the wide range of operations carried out by Department of Energy (DOE) (and its predecessor organizations) has resulted in accumulation of hazardous and radioactive waste in tanks, soil, groundwater, and buildings at various sites across the nation. DOE conducts ongoing cleanup efforts at those sites. To ensure that the best modern technologies are available for this work, which will continue for 30 years or more, Congress requested DOE to develop a cleanup technology roadmap. The DOE's Office of Environmental Management asked the National Research Council to assist DOE in preparing the roadmap, which must identify technology gaps in DOE's site cleanup program and to develop a strategy, with funding proposals, to address them. This interim report provides initial technical and strategic advice to assist DOE's fiscal year 2009 planning, development, and implementation of its cleanup technology roadmap. The final report, which will fully address the statement of task, will be completed in February, 2009.

http://www.nap.edu/catalog.php?record_id=12165

The Potential Impacts of Climate Change on U.S. Transportation

TRB and the Division on Earth and Life Studies (DELS) have released the pre-publication version of TRB Special Report 290, The Potential Impacts of Climate Change on U.S. Transportation, which explores the consequences of climate change for U.S. transportation infrastructure and operations. The report provides an overview of the scientific consensus on the current and future climate changes of particular relevance to U.S. transportation, including the limits of present scientific understanding as to their precise timing, magnitude, and geographic location; identifies potential impacts on U.S. transportation and adaptation options; and offers recommendations for both research and actions that can be taken to prepare for climate change. The report also summarizes previous work on strategies for reducing transportation-related emissions of carbon dioxide—the primary greenhouse gas—that contribute to climate change. DELS, like TRB, is a division of the National Academies, which include the National Academy of Sciences, National Academy of Engineering, Institute of Medicine, and National Research Council.

http://www.trb.org/news/blurb_detail.asp?id=5079

Assessment of Technologies for Improving Light Duty Vehicle Fuel Economy: Letter Report

The National Highway Traffic Safety Administration requested that the National Academies provide an objective and independent update of the 2001 National Research Council report Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards and add to its assessment other technologies that have emerged since that report was prepared. This letter is an interim report that discusses the technologies to be analyzed in the final report, the types of vehicles that may use them, the estimated improvements in fuel economy that

may result, and the computational models that will be used in analysis. The report represents the preliminary judgment of the committee and it will continue to revise the list of technologies and fuel-economy benefits as it completes its study. The final report is to be provided in late spring of 2008.

http://www.nap.edu/catalog.php?record_id=12163

NEW PROJECTS

Ecological Impacts of Climate Change

The Board on Life Sciences will convene a committee to prepare a short (20-page) consensus, high-level report that presents a balanced summary of key examples of observed impacts of climate change on a variety of ecosystems. The committee will base its report on the recent report "Climate Change 2007: Impacts, Adaptation and Vulnerabilities" by Working Group II of the Intergovernmental Panel on Climate Change, as well as other NRC reports and published literature. The short consensus report will be used to derive dissemination products in the form of a public brochure and a teaching guide. The brochure will include colorful and informative figures and illustrations. The teaching guide would consist of material that could be used as a basis of a class curriculum or public education and presentations. Because the public brochure and teaching guide are intended to be distributed through National Parks, schools and other venues in the United States, the committee should select mostly ecosystems in the United States as illustrations in its report. However, the impacts of climate change also will be discussed in a global context as appropriate.

<http://www8.nationalacademies.org/cp/ProjectView.aspx?key=BLSX-K-07-03-A>

Strategic Directions for the Geographical Sciences in the Next Decade

An ad hoc committee will formulate a short list of high priority research questions in the geographical sciences that are relevant to societal needs. The questions will be written in a clear, compelling way and will be supported by text and figures that summarize research progress to date and outline future challenges.

<http://www8.nationalacademies.org/cp/ProjectView.aspx?key=BESR-U-06-02-A>

UPCOMING MEETINGS

March

The National Academies Summit on America's Energy Future, March 13-14, 2008
<http://www7.nationalacademies.org/energysummit/>

Review of Water and Environmental Research Systems (WATERS) Network, March 13-14, 2008

<http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingId=2523>

Challenges and Opportunities in Earth Surface Processes, March 16-18, 2008
<http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingId=2596>

Data for Goods Movement Impacts on Air Quality Workshop, March 17-18, 2008
http://www.trb.org/news/blurb_detail.asp?id=8355

Strategic Advice on the U.S. Climate Change Science Program, March 19-21, 2008
<http://www8.nationalacademies.org/cp/projectview.aspx?key=209>

21st Century Systems Agriculture, March 27-28, 2008
<http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingId=2613>

TRB Webinar: Climate Change, Impacts on U.S. Transportation, and Adaptation Strategies, March 28, 2008
<https://www1.gotomeeting.com/register/184042474>

April

Reducing Stormwater Discharge Contributions to Water Pollution, April 1, 2008
<http://www8.nationalacademies.org/cp/projectview.aspx?key=48711>

America's Energy Futures: Nuclear Power Subgroup Meeting, April 2-3, 2008
<http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingId=2623>

Disaster Risk Management in an Age of Climate Change, April 3, 2008
<http://dels.nas.edu/dr/f22.shtml>

Sackler Lecture: "Opportunities and Limits in the Creation of Useful Knowledge for Sustainable Development," April 3, 2008
http://www.nasonline.org/site/PageNavigator/SACKLER_sustainable_development

Sackler Colloquium: Linking Knowledge with Actions for Sustainable Development, April 3-4, 2008.
http://www.nasonline.org/site/PageNavigator/SACKLER_sustainable_development

Review of Louisiana Coastal Protection and Restoration (LACPR) Program, April 3-4, 2008
<http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingId=2625>

Committee on Earth Resources Meeting, April 8-9, 2008, Denver, CO
http://dels.nas.edu/besr/cer_events_April08.shtml

Toward Sustainable Critical Infrastructure Systems Workshop, April 9-11, 2008
www8.nationalacademies.org/cp/meetingview.aspx?MeetingID=2387&MeetingNo=1

America's Energy Futures: Electric Power Transmission and Distribution Subgroup Meeting, April 24-25, 2008
<http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingId=2622>

The Earth System Context for Hominin Evolution, April 30, 2008
<http://www8.nationalacademies.org/cp/projectview.aspx?key=48796>

May

Potential Energy Savings and Greenhouse Gas Reductions from Transportation, May 2, 2008
<http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingId=2583>

Deep-Time Geologic Records Workshop, May 5-7, 2008, Irvine, CA
<http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingId=2508>

Toward Sustainable Critical Infrastructure Systems -- Framing the Challenges: A Workshop, May 7-9, 2008
<http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingId=2513>

National Sustainable Design Expo featuring EPA's P3 Award, May 9-11, 2008
<http://www.nae.edu/nae/engenvcom.nsf/weblinks/MKEZ-6NQQFG?OpenDocument>

June

Partnerships for Sustainability, Examining the Evidence: A Symposium, June 18-19, 2008
<http://sustainability.nationalacademies.org/Partnerships.shtml>

The Roundtable on Science and Technology for Sustainability, June 19-20, 2008

<http://sustainability.nationalacademies.org/roundtable.shtml>

PROJECTS IN DEVELOPMENT

Pathways to Urban Sustainability Initiative

The National Academies are planning a multi-year, multi-country initiative to address one of the central challenges and opportunities of the 21st century—the use of science and technology to help transform rapidly urbanizing regions of the developing world into “sustainable cities.” Over the past year, the Academies launched this ambitious program through on-the-ground planning activities in China, South Africa, Tanzania and Mexico. We are currently raising funds for the next phase of the initiative, which will include an international symposium to examine the major trends, challenges, and potential paths forward to urban sustainability in developing world cities, and a set of on-the-ground projects in China to be carried out in partnership with the Chinese Academies of Science and Engineering and other leading Chinese science and technology institutions. For more information on past urban sustainability activities, visit:

http://sustainability.nationalacademies.org/proj_dev.shtml

ONGOING ACTIVITIES

Sustainability---The Issue

The Roundtable on Science and Technology for Sustainability

<http://sustainability.nationalacademies.org/index.shtml>

Partnerships for Sustainability

<http://sustainability.nationalacademies.org/current.shtml>

People and Their Communities

Public Health Decision-Making Under Uncertainty

<http://www8.nationalacademies.org/cp/projectview.aspx?key=48847>

Public Participation in Environmental Assessment and Decision Making

<http://www8.nationalacademies.org/cp/projectview.aspx?key=34>

The Committee on the Human Dimensions of Global Change

<http://www7.nationalacademies.org/hdgc/>

Toward Sustainable Critical Infrastructure Systems -- Framing the Challenges: A Workshop

<http://www8.nationalacademies.org/cp/projectview.aspx?key=48850>

Life Support Systems: Atmosphere, Water, and Food

Advancing Desalination Technology

<http://www8.nationalacademies.org/cp/CommitteeView.aspx?key=48674>

A Strategy to Mitigate the Impact of Sensor Desscopes and De-manifests on the NPOESS and GOES-R Spacecraft

<http://www8.nationalacademies.org/cp/projectview.aspx?key=48834>

Climate Change and U.S. Transportation

<http://www8.nationalacademies.org/cp/projectview.aspx?key=186>

Committee on Hydrology, Ecology, and Fishes of the Klamath River Basin

<http://www8.nationalacademies.org/cp/projectview.aspx?key=216>

Contaminated Drinking Water at Camp Lejeune

<http://www8.nationalacademies.org/cp/ProjectView.aspx?key=BEST-K-06-08-A>

Developing Mesoscale Meteorological Observational Capabilities
<http://www8.nationalacademies.org/cp/projectview.aspx?key=48732>

Emerging Technologies in Agriculture to Benefit Farmers in Africa and South Asia
<http://dels.nas.edu/banr/index.shtml>

International and National Measures to Reduce Marine Debris and Its Impacts
<http://www8.nationalacademies.org/cp/ProjectView.aspx?key=OSBX-U-07-02-A>

Mortality Risk Reduction Benefits from Decreasing Tropospheric Ozone Exposure
<http://www8.nationalacademies.org/cp/CommitteeView.aspx?key=BEST-K-06-10-A>

FEMA Flood Maps: Accuracy Assessment and Cost-Effective Improvements
<http://www8.nationalacademies.org/cp/ProjectView.aspx?key=BESR-U-06-06-A>

Reducing Stormwater Discharge Contributions to Water Pollution
<http://www8.nationalacademies.org/cp/committeerview.aspx?key=48711>

Review of CCSP Draft Synthesis and Assessment Products: 1.3 Re-analyses of historical climate data and implications for attribution
<http://www8.nationalacademies.org/cp/projectview.aspx?key=48840>

Based on Emissions Scenarios for Long-lived Radiatively Active Trace Gases
<http://www8.nationalacademies.org/cp/ProjectView.aspx?key=BASC-U-06-06-A>

Review of Water and Environmental Research Systems (WATERS) Network
<http://www8.nationalacademies.org/cp/projectview.aspx?key=48784>

Strategic Advice on the U.S. Climate Change Science Program
<http://www8.nationalacademies.org/cp/projectview.aspx?key=209>

Strategies and Methods for Climate-Related Decision Support
<http://www8.nationalacademies.org/cp/projectview.aspx?key=48846>

Water Resources Activities at the U.S. Geological Survey
<http://www8.nationalacademies.org/cp/projectview.aspx?key=48695>

Economy and Industry

Competitiveness and Workforce Needs of U.S. Industry
<http://www8.nationalacademies.org/cp/projectview.aspx?key=41210>

National Academies Materials Forum on Corrosion Education for the 21st Century
http://www7.nationalacademies.org/nmab/current_activities.html

21st Century Systems Agriculture
<http://dels.nas.edu/banr/>

Natural Systems

Hydrologic Impacts of Forest Management
<http://www8.nationalacademies.org/cp/projectview.aspx?key=1935>

Review of Louisiana Coastal Protection and Restoration (LACPR) Program
<http://www8.nationalacademies.org/cp/CommitteeView.aspx?key=WSTB-U-06-04-A>

Risk of Oil Spills in the Aleutian Islands: Comprehensive Risk Assessment
<http://www8.nationalacademies.org/cp/projectview.aspx?key=48853>

The Importance of Deep-Time Geologic Records for Understanding Climate Change Impacts
<http://www8.nationalacademies.org/cp/projectview.aspx?key=48865>

Institutions and Indicators

Key National Indicators Initiative (KNII)

Currently, this project is not available on the web. As soon as a web link becomes available, it will be included in this update.

Sustainability Research and Development

Challenges and Opportunities in Earth Surface Processes

<http://www8.nationalacademies.org/cp/committeeview.aspx?key=48867>

Design Issues for the NOAA Sector Applications Research Program

<http://webapp.nationalacademies.org/cp/projectview.aspx?key=48688>

Evaluation of the Research Plan of the Dept of Housing and Urban Development

<http://www8.nationalacademies.org/cp/projectview.aspx?key=48755>

Grand Challenges for Engineering

<http://www.engineeringchallenges.org/>

Grainger Challenge Prize for Sustainability

<http://www.nae.edu/nae/granger.nsf?OpenDatabase>

Strategic Directions for the Geographical Sciences in the Next Decade

<http://dels.nas.edu/dels/sot.php?pin=BESR-U-06-02-A>

The Earth System Context for Hominin Evolution

<http://www8.nationalacademies.org/cp/ProjectView.aspx?key=BESR-U-06-01-A>

Sustainable Energy

America's Energy Future: Technology Opportunities, Risks, and Tradeoffs

<http://www8.nationalacademies.org/cp/projectview.aspx?key=48817>

Assessment of Resource Needs for Development of Fuel Cell Hydrogen Technology

<http://www8.nationalacademies.org/cp/projectview.aspx?key=48717>

Assessment of Technologies for Improving Light-Duty Vehicle Fuel Economy

<http://www8.nationalacademies.org/cp/projectview.aspx?key=48843>

Cleanup Technology Roadmap for DOE's Office of Environmental Management

<http://www8.nationalacademies.org/cp/ProjectView.aspx?key=NRSB-O-06-03-A>

Energy Efficiency Standards: Alternative Approaches to Measurement

<http://www8.nationalacademies.org/cp/projectview.aspx?key=48884>

Potential Energy Savings and Greenhouse Gas Reductions from Transportation

<http://www8.nationalacademies.org/cp/projectview.aspx?key=48864>

Relationship of Development Patterns, Vehicle Miles Traveled, Energy Consumed

<http://www8.nationalacademies.org/cp/projectview.aspx?key=48808>

Review of the DOE-BES Catalysis Research Activities and their Impact

<http://www8.nationalacademies.org/cp/ProjectView.aspx?key=BCST-L-07-02-A>

Review of the 21st Century Truck Partnership

<http://www8.nationalacademies.org/cp/projectview.aspx?key=48722>

Review of the FreedomCAR and Fuel Research and Development Program, Phase 2

<http://www8.nationalacademies.org/cp/projectview.aspx?key=48724>

Transitions to Sustainable Energy

<http://www.interacademy.org/?id=9481>

Other Activities

Christine Mirzayan Science and Technology Policy Fellowship Program

<http://national-academies.org/policyfellows>

PNAS Sustainability Science, Special Features

PNAS offers a series of special feature issues that highlight emerging fields in the physical, social, and biological sciences and are edited by leaders in the field. Special Features include a cluster of Perspectives and peer-reviewed research articles. As a service to readers, Special Features are freely available online from the date of publication.

<http://www.pnas.org/misc/sustainability.shtml>

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