

Energy Policy Update

Energy and Environmental News

January 19, 2010



ARIZONA DEPARTMENT
OF COMMERCE

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This newsletter is published by the Arizona Department of Commerce Energy Office and is provided free of charge to the public. It contains verbatim excerpts from international and domestic energy and environment-related publications reviewed by the Education and Community Outreach personnel. For inquiries, call **(602) 771-1143** or toll free **(800) 352-5499**. Compiled and edited by Gloria Castro, Special Projects Coordinator. To register to receive this newsletter electronically, email [Gloria Castro](mailto:Gloria.Castro).

For additional program information, access: <http://www.azcommerce.com/Energy/Energy+Policy+Update+-%28Monthly+Publication%29.htm>.

Click [here](#) to view [Grant Opportunities](#) from the American Recovery and Reinvestment Act (ARRA).

FOR YOUR CONVENIENCE, ARIZONA-RELATED TITLES ARE HIGHLIGHTED IN BLUE

ARIZONA

Amid State's Push for Solar Power, Water-Supply Worries Arise

[Arizona Republic, Jan. 17] Arizona can offer solar-energy Developers legendary sun-drenched skies and thousands of empty square miles but not nearly so ample a supply of a third essential resource. Water. As the state vies for a place among the renewable-energy leaders, seeking the jobs and tax revenue a vibrant solar industry would create, officials face a fundamental and all-too-familiar obstacle that could slow the green power rush.

Amonix Announces Solar Facility, 167 Jobs for Arizona

[Phoenix Business Journal, Jan. 14] Amonix Inc. has announced it will build two solar manufacturing plants, one in Arizona and one in Nevada. The Arizona facility will bring 167 jobs to the state. Exact locations have not yet been chosen for the California-based company's projects, but they were part of the U.S. Department of Energy's tax credit program announced last Friday. Amonix is slated to receive \$9.5 million for the two projects through the federal tax credit, which pays up to 30 percent of a facility's construction. The DOE release shows Amonix's Phoenix facility listed to receive about \$3.6 million.

Amtech Stock Rises More Than 20%

[Arizona Republic, Jan. 13] Shares of Tempe-based Amtech Systems Inc. closed up more than 20 percent Wednesday after the maker of solar and semiconductor manufacturing equipment said orders booked for the quarter ended Dec. 31 reached \$59 million. The company has weathered the most recent semiconductor downturn thanks to the sale of new tools that help manufacturers produce solar cells. Many of the orders will ship in the current fiscal year.

Pendergast Elementary Receives Grant to Install Solar Power System

[Arizona Republic, Jan. 14] Pendergast Elementary will be among the first Arizona schools to use solar energy. The school, which opened in August, is a "green concept" building designed for energy efficiency, said architect Saravanan Balasubramanian of Orcutt Winslow, a Phoenix-based design firm. The school, at 91st and Clarendon avenues in west Phoenix, is among 14 statewide that received the Salt River Project Solar for Schools program grant. SRP is spending about \$2 million to install and maintain 10-kilowatt, roof-mounted, solar photovoltaic systems on each school.

Phoenix Adds Solar Energy to Low-Income Housing Complex

[Arizona Republic, Jan. 15] For the first time at a large, city-owned residential unit, Phoenix has retrofitted an apartment complex in northeast Phoenix with solar-energy equipment and weatherization materials.

The goal is to reduce energy use and utility bills for the low- to middle-income residents of the 62-unit Paradise Village apartments in the Palomino neighborhood. Energy-efficient additions to the complex include solar hot-water panels that will serve eight units, photovoltaic roof panels that will serve 14 units and solar exterior lighting. Other upgrades include weatherstripping of windows and doors, security screen doors, sunscreens and new energy-efficient water heaters. The city partnered with Arizona Public Service, which provided more than \$180,000 in renewable-energy-systems rebates, and Southwest Gas, which donated the water heaters.

Pinal to Share in \$1.5 Million for New Green Jobs

[Arizona Republic, Jan. 13] About 100 low-income residents in Pinal and Gila counties are expected to benefit from a \$1.5 million green jobs training grant from the U.S. Department of Labor. The Labor Department announced Wednesday that the National Association of Regional Councils was one of at least 38 recipients of "Pathways Out of Poverty" grants authorized by the American Recovery and Reinvestment Act. Of the \$8 million given to the national association, \$1.5 million will go to the Central Arizona Association of Governments (CAAG) for use in Pinal and Gila counties.

Pulte Homes Pushes Solar in Effort to Energize Valley Sales

[Arizona Republic, Jan. 12] Pulte Homes is hoping to invigorate home sales and reach a milestone in the mass production of solar homes at two of its age-restricted Del Webb communities in Arizona. As of Jan. 1, Pulte began offering homes with solar roofs inside two Arizona communities, Del Webb's Sun City Festival in Buckeye and Sun City Anthem at Merrill Ranch in Florence. With an additional 11,200 homes yet to be built in the two communities, Bloomfield Hills, Mich.-based Pulte said they have the potential to become Arizona's largest solar-powered residential developments.

Solar-Parts Plant to Open in Arizona

[Arizona Republic, Jan. 12] A producer of structural metal components for the automobile industry plans to invest \$50 million in a new Arizona plant that will manufacture mirror assemblies for solar-power systems. Tower Automotive of Livonia, Mich., declined to announce a location for the facility, pending final lease negotiations, but did confirm it will employ about 200 people.

ALTERNATIVE ENERGY AND EFFICIENCY

Biobutanol Firm Aims to Compete with Ethanol in 4 Years

[New York Times, Jan. 13] Having launched its first pilot facility yesterday with Gov. Arnold Schwarzenegger looking on, California startup Cobalt Technologies is the latest in a growing number of biofuel ventures banking on biobutanol as an attractive ethanol alternative. Like ethanol, biobutanol can be fermented from plant sugars, either food grains or cellulosic plant parts. But because its structure is heavier than ethanol and more similar to gasoline, the advanced biofuel has a wider range of end uses -- it can be burned as a stand-alone transportation fuel; blended with diesel, ethanol or gasoline; converted into jet fuel or plastics; or sold in existing industrial chemical markets. Though the production technology has existed since World War I, bio-based butanol has always been too expensive to produce. Today, butanol is made from petroleum.

Homeowners In Wyo. Snap Up Renewable Energy Grants

[The Gillette News Record, Jan. 18] Cheyenne, WY - Big developers aren't the only ones pursuing Wyoming's renewable energy resources. Wyoming homeowners quickly claimed \$2.25 million in federal stimulus funds as part of a recent state program for residential renewable energy projects. The State Energy Office is finalizing grant agreements so about 330 people can get started on projects to install solar, wind or ground-source heat energy systems at their homes, Program Manager Shannon Stanfill said. The office obligated the funding in less than 10 days in December, and another 265 people — with almost \$2 million in requests — are on a waiting list. However, there are currently no plans to add more funding to the program, according to the office.

Recovery Act Announcement: Secretary Chu Announces More than \$37 Million for Next Generation Lighting

[U.S. Dept. of Energy – EERE website, Jan. 15] Energy Secretary – Steven Chu today announced more than \$37 million in funding from the American Recovery and Reinvestment Act to support high-efficiency solid-state lighting projects. Solid-state lighting, which uses light-emitting diodes (LEDs) and organic light-emitting diodes (OLEDs)

instead of incandescent bulbs, has the potential to be ten times more energy-efficient than traditional incandescent lighting. Lighting accounts for approximately 24% of the total electricity generated in the United States today—by 2030, the development and widespread deployment of cost-effective solid-state lighting could reduce electricity use for lighting by one-third nationally. The 17 projects selected today include funding for solid-state lighting core research, product development, and domestic manufacturing.

LEGISLATION AND REGULATION

DOE Steps Lead to Significant Increase in Compliance with Energy Efficiency Reporting Requirements

[U.S. Dept. of Energy – EERE website, Jan. 12] DOE announced on January 12 that it has received certifications for more than 600,000 residential appliances in 15 different product categories in response to its enhanced energy efficiency enforcement efforts. DOE recently announced that manufacturers had until January 8 to submit correct energy-use data to DOE before aggressive enforcement actions would be taken. The certification data provided by 160 different manufacturers will allow DOE to review manufacturers' compliance with minimum energy efficiency standards and take action to ensure that products are delivering the energy and cost savings required by law. DOE will continue to accept certification reports that were sent by mail and postmarked by January 8.

U.S. Senate Not Seen Passing Climate Bill in 2010

[Reuters, Jan. 19] Washington - U.S. Senator Byron Dorgan said on Tuesday he did not think the Senate would pass climate change legislation this year, but instead would focus on a separate energy bill that would have more bipartisan support. Dorgan's comments were at odds with Senate Majority Leader [Harry Reid](#), who has said the Senate this spring would take up a climate change bill to cut U.S. greenhouse gas emissions that are blamed for global warming. Dorgan, who is in the Senate Democratic leadership, said it would be difficult for the Senate to turn to controversial climate change legislation after going through the contentious health care debate.

ENERGY-GENERAL

Fossil Fuel Use 2034? Not Much Different.

[New York Times, Jan. 15] Bloomberg News A mix of coal, natural gas and other fossil fuels will still supply 68 percent of the nation's energy needs in 2034, according to one projection. A quarter century from now the United States' reliance on fossil fuels will have declined only marginally, according to a projection from Black & Veatch, the engineering and energy consulting firm. In 2034, a mix of coal, natural gas and other fossil fuels will supply 68 percent of the nation's energy needs, compared to 76 percent today. The share of energy production from renewable sources, including solar and wind, in 2034 will rise to 13 percent from 5 percent. Nuclear power will supply only 2 percent more electricity than it does in 2010, the firm said. Those numbers were part of a presentation that Black & Veatch made to utility executives and other clients in Sacramento this week and which Mark Griffith, a managing director at the company, shared with The Times.

WESTERN POWER

California Adopts Green Building Codes

[New York Times, Jan. 15] Getty Images Among other regulations kicking in next January: Every new building in California will have to recycle 50 percent of its construction waste. California officials adopted the country's first mandatory statewide green building code on Tuesday. The regulations, called Calgreen, will help the state meet its goal of trimming greenhouse gas emissions by 33 percent by 2020. Beginning next January, every new building in the state will have to reduce water usage by 20 percent and recycle 50 percent of its construction waste instead of sending it to landfills. Commercial buildings will be required to have separate water meters for indoor and outdoor water use. Mandatory inspections of air conditioner, heat and mechanical equipment will be also be instituted for all commercial buildings over 10,000 square feet. Hospitals will not be required to meet the new regulation.

Colo. Dems Want to Raise Renewable Energy Standard

[Associated Press, Jan. 13] Denver, CO - Colorado Democratic state lawmakers want to increase the amount of electricity coming from renewable sources, saying the move will help the environment and create jobs. Under current law, investor-owned utilities like Xcel Energy must get 20 percent of their power from renewable sources like wind and solar energy by 2020. Gov. Bill Ritter announced Tuesday that he is backing planned legislation

requiring them to hit 30 percent over the next 10 years instead. Democratic state Sens. Gail Schwartz and Bruce Whitehead plan to introduce the bill in the new legislative session, which starts Wednesday.

Colo. Federal Lab Gets Funds for Biofuels Work

[Associated Press, Jan. 13] Denver, CO - A consortium led by the National Renewable Energy Laboratory will receive up to nearly \$34 million in federal stimulus funds to work on ways to make fuel from plant materials that can be used in existing pipelines and refineries. The National Advanced Biofuels Consortium is led by NREL in Golden, Colo., and its primary research partner, the Pacific Northwest National Laboratory. The group will spend about a year investigating six process options.

Indian Tribe Hopes to Profit from Solar Energy

[Associated Press, Jan. 12] Jemez Pueblo, N.M. - A poverty-stricken Indian tribe that holds the sun and nature's other gifts sacred sees a brighter future for itself in solar power. The 3,000 members of the Jemez Pueblo are on the verge of building the nation's first utility-scale solar plant on tribal land, a project that could bring in millions of dollars. Experts say tapping into the sun, wind and geothermal energy on Indian land could generate the kind of wealth many tribes have seen from slot machines and blackjack tables.

NV Energy and Great Basin Transmission to Pursue Jointly-Owned Transmission Line

[ElectricNet.com website, Jan. 11] Las Vegas, NV - NV Energy and Great Basin Transmission, LLC, an affiliate of LS Power, have signed a Memorandum of Understanding to jointly own a 500 kilovolt transmission line in Nevada. NV Energy would purchase Great Basin's share of capacity on the jointly owned line under a long term agreement. The transmission line would provide access to isolated renewable energy resources in parts of northern and eastern Nevada. Additionally, it would connect NV Energy's northern service area with its service area in southern Nevada, which will enhance overall energy-sharing efficiencies and renewable energy utilization

INDUSTRIES AND TECHNOLOGIES

Geothermal Industry Struts Its Stuff for Wall Street, Capitol Hill

[New York Times, Jan. 15] New York - The geothermal power industry is maneuvering to escape the shadows of the wind, solar and biofuels sectors and get financiers and lawmakers to take notice. But high up-front project costs and the impatience of investors keeps getting in the way, leaving industry with its hopes pinned on government grants and tax incentives. Hoping to change its luck, the Geothermal Energy Association (GEA) held its largest gathering ever yesterday, drawing financiers, politicians and project developers to a posh hotel in Lower Manhattan. The gathering featured a lunchtime keynote speech by Senate Majority Leader Harry Reid (D-Nev.). GEA representatives capped the day by ringing the closing bell at NASDAQ.

UAE's Masdar Inks Carbon Trading, Cleantech Deals

[New York Times, Jan. 19] The United Arab Emirates' ambitious Masdar "eco-city" is positioning itself to profit from a carbon-constrained global economy. The desert city, slated for completion over the next decade, would generate electricity on site from the wind and sun and produce zero net greenhouse gas emissions. And in a new twist, Masdar also would generate cash by buying and selling carbon dioxide emissions globally.

Toyota to Double Hybrid Output in 2011: Report

[Reuters, Jan. 18] Tokyo – Toyota Motor Corp aims to double its global output of gas-electric hybrid cars to 1 million units in 2011, as it fights to stay in the lead in the growing market for low-emission cars, the Nikkei business reported on Monday. Toyota, the world's largest automaker, had said it aimed to sell 1 million models annually worldwide soon after 2010 and has been ramping up its push on hybrids, introducing the Say sedan in Japan recently, the brand's second hybrid-only model. Low emission hybrids have enjoyed strong sales thanks to generous subsidies and tax breaks. The Pries, Toyota's flagship hybrid, became Japan's best-selling car in 2009.

GASOLINE AND DIESEL FUEL

To view Arizona and U.S. Gasoline and Diesel fuel data plus other pertinent oil information click [here](http://www.azcommerce.com/Energy/MotorFuel/).

GRANTS

The RFPs created or supplemented as a result of the American Recovery and Reinvestment Act (Recovery Act) are identified in the RFP titles.

WAP Training Centers & Programs (Recovery Act)

The objective of this FOA is to develop new or expand existing weatherization training centers and training programs. DOE will work with the selected entities to develop low-income weatherization training centers or programs that provide accelerated, standardized, and multi-tiered weatherization training. Reference Number: DE-FOA-0000220. Response Due Date: 1/21/2010 3:00:00 PM ES. Use the following link to view this opportunity: <https://www.fedconnect.net/fedconnect?doc=DE-FOA-0000220&agency=DOE>

Plant Feedstock Genomics for Bioenergy

The U.S. Department of Energy's Office of Science, Office of Biological and Environmental Research (OBER), and the U.S. Department of Agriculture (USDA), National Institute of Food and Agriculture (NIFA), hereby announce their interest in receiving applications for genomics-based research that will lead to the improved use of biomass and plant feedstocks for the production of fuels such as ethanol or renewable chemical feedstocks. Specifically, applications are sought for fundamental research on plants that will improve biomass characteristics, biomass yield, or sustainability. Systems biology approaches to identify genetic indicators enabling plants to be efficiently bred or manipulated, or research that yields fundamental knowledge of the structure, function and organization of plant genomes leading to improved feedstock characterization and sustainability are also encouraged. Reference Number: DE-FOA-0000223 Response Due Date: 2/18/2010 8:00:00 PM ES. Use the following link to view this opportunity: <https://www.fedconnect.net/fedconnect?doc=DE-FOA-0000223&agency=DOE>

Reducing Methane from Landfills

The U.S. Environmental Protection Agency announces its intent to request proposals for Technical and Outreach Support Services for Reducing Emissions from Landfills. The contractor will support the mission of the Landfill Methane Outreach Program, a voluntary assistance program that helps to reduce methane from landfills by encouraging the recovery and use of landfill gas as a renewable, green energy source. The RFP will be issued on or about 2/2/10. For more info, contact Faye Sas at sas.faye@epa.gov or go to: https://www.fbo.gov/?s=opportunity&mode=form&id=0e90c51835d6b1b73e011dbba75df433&tab=core&_cview=0
Refer to Sol# PR-HQ-10-10262. (FBO 11/7/09)

Environmental Management Fellowship Program

The U.S. Environmental Protection Agency requests proposals for the National Network for Environmental Management Studies Fellowship Program. This program provides students an opportunity to participate in a fellowship project that is directly related to their field of study. Fellowship categories include: Environmental Policy, Regulation, and Law; Environmental Management and Administration; Environmental Science; and Public Relations and Communications. \$400K expected to be available, up to 40 awards anticipated. Responses due 2/5/10. For more info, go to: <http://www.epa.gov/education/students.html>.
Refer to Sol# EPA-EED-10-01. (Grants.gov 11/5/09)

Power, Controls and Adaptive Networks

The National Science Foundation requests proposals for Power, Controls and Adaptive Networks. This program supports distributed control of multi-agent systems with embedded computation for sensor and adaptive networks. This program emphasizes electric power networks and grids, including generation, transmission and integration of renewable, sustainable and distributed energy systems, such as fuel cells and micro-turbines in large power networks; high power electronics and drives; and understanding of associated regulatory and economic structures. The program also emphasizes energy scavenging and alternative energy technologies, including solar cells, ocean waves, wind, geothermal, low-head hydro, and the hydrogen economy. In addition, the program supports generation and integration in the National Grid (InterGrid), and interdependencies of critical infrastructure in power and communications. Responses due 2/7/10. For more info, contact Radhakishan Baheti at rbaheti@nsf.gov or go to: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13380.
Refer to Sol# PD-10-1518. (Grants.gov 11/16/09)

1890 Land Grant Capacity Building

The U.S. Department of Agriculture requests proposals from 1890 Land-Grant Institutions (http://www.csrees.usda.gov/qlinks/partners/state_partners.html), including Tuskegee University and West Virginia State University, for 1890 Institution Education, Research and Extension Capacity Building Grants. This program seeks to build institutional capacity through stimulating the development of high quality education,

research and extension programs that will produce a professional work force in the food and agricultural sciences. High priority areas include, but are not limited to: Bio-energy/Biofuel; Sustainable Agriculture; and Global Climate Change. \$35 million expected to be available. Responses due 2/8/10. For more info, contact Ali Mohamed at amohamed@nifa.usda.gov or go to: http://www.nifa.usda.gov/funding/rfas/pdfs/10_1890_capacity.pdf. Refer to Sol# USDA-NIFA-CBGP-002695. (Grants.gov 11/16/09)

Organic Agriculture Initiative

The U.S. Department of Agriculture requests proposals for the Organic Agriculture Research and Extension Initiative. This program will support projects that enhance the ability of producers and processors who have already adopted organic standards to grow and market high quality organic agricultural products. Projects that emphasize research and outreach that assist farmers and ranchers with whole farm planning and ecosystem integration are of particular interest. \$19 million expected to be available, individual awards NTE \$3 million. Responses due 2/9/10. For more info, contact Mary Peet at mpeet@nifa.usda.gov or go to: <http://www.nifa.usda.gov/funding/rfas/OREI.html>. Refer to Sol# USDA-NIFA-ICGP-002696. (Grants.gov 11/18/09)

Engineering Design and Innovation

The National Science Foundation requests proposals for Engineering Design and Innovation. The program focus is on gaining an understanding of the basic processes and phenomena underlying a holistic, life-cycle view of design where the total system life-cycle context recognizes the need for advanced understanding of the identification and definition of preferences, analysis of alternatives, effective accommodation of uncertainty in decision-making, and the relationship between data and knowledge in a digitally-supported process. Responses due 2/15/10. For more info, contact Christina Bloebaum at cbloebau@nsf.gov or go to: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13340. Refer to Sol# PD 08-1464. (Grants.gov 11/16/09)

Sensors and Sensing Systems

The National Science Foundation requests proposals for Sensors and Sensing Systems. This program supports fundamental research on advanced actuators, sensors, wireless sensor networks, new materials and concepts for sensing applications, power generation and energy supply for sensors and sensing systems. Responses due 2/15/10. For more info, contact Shih Liu at sliu@nsf.gov or go to: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13349. Refer to Sol# PD-08-1639. (Grants.gov 11/16/09)

Structural Materials and Mechanics

The National Science Foundation requests proposals for Structural Materials and Mechanics. This program supports fundamental research on the behavior of civil infrastructure materials and the mechanics of structural components in the built environment. Of particular interest is research on structural components consisting of natural and synthetic materials, their response to mechanical, hydrothermal and time-dependent loads, and their impact on life-cycle performance and sustainable development of the civil infrastructure. Responses due 2/15/10. For more info, contact Lawrence Bank at lbank@nsf.gov or go to: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13357. Refer to Sol# PD-08-1635. (Grants.gov 11/16/09)

Materials and Surface Engineering

The National Science Foundation requests proposals for Materials and Surface Engineering. This program supports fundamental research leading to a better understanding of the effect of microstructure, surfaces and coatings on the properties and performance of engineering materials, and the ultimate control of these properties through material design. Responses due 2/15/10. For more info, contact Clark Cooper at ccooper@nsf.gov or go to: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13356. Refer to Sol# PD-08-1633. (Grants.gov 11/16/09)

Materials Processing and Manufacturing

The National Science Foundation requests proposals for Materials Processing and Manufacturing. This program supports fundamental research on the interrelationship of materials processing, structure, performance and process control. Responses due 2/15/10. For more info, contact Mary Toney at mtoney@nsf.gov or go to: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13344. Refer to Sol# PD-08-1467. (Grants.gov 11/16/09)

Mechanics of Materials

The National Science Foundation requests proposals for Mechanics of Materials. This program supports fundamental research on solid mechanics including theoretical, analytical, and computational approaches, model-

based simulation, and the development of constitutive models. Responses due 2/15/10. For more info, contact Glaucio Paulino at gpaulino@nsf.gov or go to: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13355. Refer to Sol# PD-08-1630. (Grants.gov 11/16/09)

Manufacturing and Construction Machines and Equipment

The National Science Foundation requests proposals for Manufacturing and Construction Machines and Equipment. This program supports fundamental research leading to improved machines and applications for both manufacturing and construction. Key goals are to advance the transition of these industries from skill-based to knowledge-based activities and to develop them as activities with minimal environmental and societal impact. Responses due 2/15/10. For more info, contact George Hazelrigg at ghazelri@nsf.gov or go to: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13346. Refer to Sol# PD-08-1468. (Grants.gov 11/16/09)

Energy for Sustainability

The National Science Foundation requests proposals for Energy for Sustainability. This program supports fundamental research and education in energy production, conversion, and storage and is focused on energy sources that are environmentally friendly and renewable. Sources of sustainable energy include: Sunlight, Wind/Wave, Biomass, and Geothermal. Responses due 3/3/10. For more info, contact Gregory Rorrer at grorrer@nsf.gov or go to: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501026. Refer to Sol# PD-10-7644. (Grants.gov 11/16/09)

Environmental Engineering

The National Science Foundation requests proposals for Environmental Engineering. The goal of this program is to encourage transformative research which applies scientific principles to minimize solid, liquid, and gaseous discharges into land, inland and coastal waters, and air that result from human activity, and to evaluate adverse impacts of these discharges on human health and environmental quality. Responses due 3/3/10. For more info, contact Paul Bishop at pbishop@nsf.gov or go to: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501029. Refer to Sol# PD-10-1440. (Grants.gov 11/16/09)

Environmental Sustainability

The National Science Foundation requests proposals for Environmental Sustainability. This program supports engineering research with the goal of promoting sustainable engineered systems that support human well-being and that are also compatible with sustaining natural systems. Research in Environmental Sustainability typically considers long time horizons and may incorporate contributions from the social sciences and ethics. Responses due 3/3/10. For more info, contact Bruce Hamilton at bhamilto@nsf.gov or go to: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501027. Refer to Sol# PD 10-7643. (Grants.gov 11/16/09)

Environmental Implications of Emerging Technologies

The National Science Foundation requests proposals for Environmental Implications of Emerging Technologies. This program provides support to develop and test the environmental effects of new technologies. The program also supports research on the development and refinement of sensors and sensor network technologies. Responses due 3/3/10. For more info, contact Cynthia Ekstein at acekstein@nsf.gov or go to: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501030. Refer to Sol# PD-10-1179. (Grants.gov 11/16/09)

Biotechnology, Biochemical, and Biomass Engineering

The National Science Foundation requests proposals for Biotechnology, Biochemical, and Biomass Engineering. This program addresses fundamental problems involved in the processing and manufacturing of products of economic importance by effectively utilizing renewable resources of biological origin and bioinformatics originating from genomic and proteomic information. Responses due 3/3/10. For more info, contact Leon Esterowitz at lesterow@nsf.gov or go to: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501024. Refer to Sol# PD-10-1491. (Grants.gov 11/16/09)

Biosensing

The National Science Foundation requests proposals for Biosensing. This program supports innovative, transformative, and insightful investigations of fundamental problems with broad long term impact and applications that require novel use of bio-inspired engineering principles and sophisticated devices to meet the engineering and technology needs of the nation. Responses due 3/3/10. For more info, contact Alex Simonian at asimonia@nsf.gov or go to: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503353. Refer to Sol# PD-10-7909. (Grants.gov 11/12/09)

Thermal Transport

The National Science Foundation requests proposals for Thermal Transport Processes. This program supports engineering research aimed at gaining a basic understanding of the microscopic and macroscopic levels of thermal transport phenomena (heat and mass transfer) in energy conversion and conservation, the synthesis and processing of materials, cooling and heating of infrastructure and equipment, the interaction of industrial processes with the environment, the propulsion of air and land-based vehicles, and thermal phenomena in biological and environmental systems. Responses due 3/3/10. For more info, contact Theodore Bergman at tbergman@nsf.gov or go to: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13367. Refer to Sol# PD-10-1406. (Grants.gov 11/16/09)

Solid State and Materials Chemistry

The National Science Foundation requests proposals for Solid State and Materials Chemistry. This program supports basic research in solid state and materials chemistry comprising the elucidation of the atomic and molecular basis for material development and properties in the solid state from the nanoscale to the bulk. Areas of interest include, but are not limited to: Innovative approaches to design, synthesis, bulk crystal and/or film growth, and characterization of novel organic, inorganic, and hybrid materials, as well as liquid crystal materials and multi-component material systems exhibiting new phenomena and/or providing new scientific insights into structure/composition/property relationships in the solid state. Responses due 10/31/10. For more info, contact Linda Sapochak at lsapocha@nsf.gov or go to: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5356. Refer to Sol# PD-09-1762. (Grants.gov 11/18/09)

Special thanks to the Washington State University Extension Energy Program for collecting this information.
