



10th Annual U.S. Department of Energy Small Business Conference

Energy Efficiency and Renewable
Energy's

Partnering with Small Businesses

Pete Devlin
Market Transformation Manager
August 12, 2009

Small Businesses Leading the Way to Recovery and Reinvestment

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Energy Efficiency & Renewable Energy



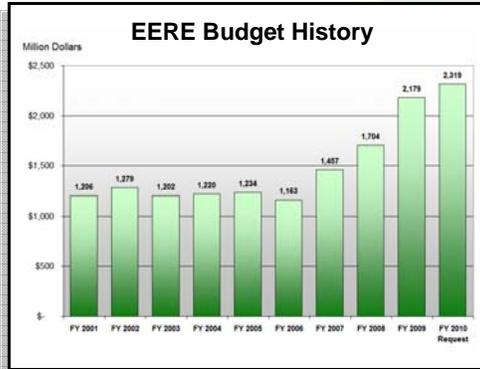
- ❖ **EERE Technology Focus Areas**
- ❖ **EERE Budgets and Organization**
- ❖ **Current EERE Opportunities (Recovery Act)**
- ❖ **Current and Upcoming Program Opportunities**
- ❖ **SBIR/STTR Opportunities**
 - Recovery Act Solicitation
 - Annual Solicitation

Small Businesses Leading the Way to Recovery and Reinvestment

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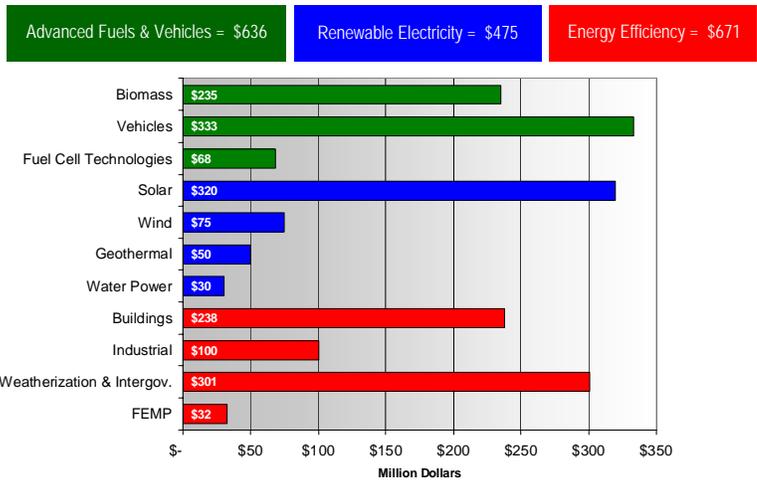
Technology Focus Areas



- ❖ **Biomass** - To make cellulosic ethanol cost competitive by 2012 through targeted research, development, demonstration, and deployment and to develop alternative advanced bio-fuels.
- ❖ **Buildings** - Develop and deploy technologies, tools, and standards for making residential and commercial buildings and appliances more energy-efficient, affordable, and better performing.
- ❖ **Geothermal** - Increase the domestic geothermal resource base and reduce the cost of heat and power through development of advanced geothermal technologies.
- ❖ **Solar** - Enable high penetration of solar energy technologies and achieve cost competitiveness by 2015.
- ❖ **Vehicles** - Enable reductions in petroleum use and carbon emissions through R&D to improve the energy efficiency and fuel-diversity of cars and trucks.



Fiscal Year 2010 Budget Request





Change the Way We Power Our Vehicles

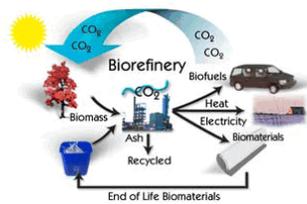
Advanced Vehicles (\$333.3M)

Advance vehicles R&D to stimulate domestic manufacturing of advanced batteries and electric drive-train components to accelerate the large-scale commercial use of plug-in vehicles in the U.S.



Fuel Cells (\$68.2M)

Advance fuel cell technologies to increase the commercial availability of fuel cells.



Next Generation Biofuels (\$235.0M)

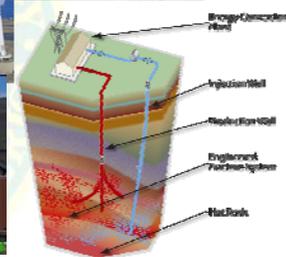
Advance the research and accelerate the demonstration and deployment of cellulosic biofuels technologies to provide a home grown alternative to imported oil.



Develop Cost-Competitive, Reliable Renewable Generation

Renewable Electricity (\$ 475.0M)

Accelerate the research, development, demonstration, and deployment of solar, geothermal, wind, and water electricity generation technologies.





Transform the Way We Use Energy

Energy Efficiency (\$671.0M)

Provide technology and assistance to help homeowners, businesses, and industry, as well as state and local governments, take immediate steps toward energy efficiency.



INDUSTRIAL ASSESSMENT CENTER

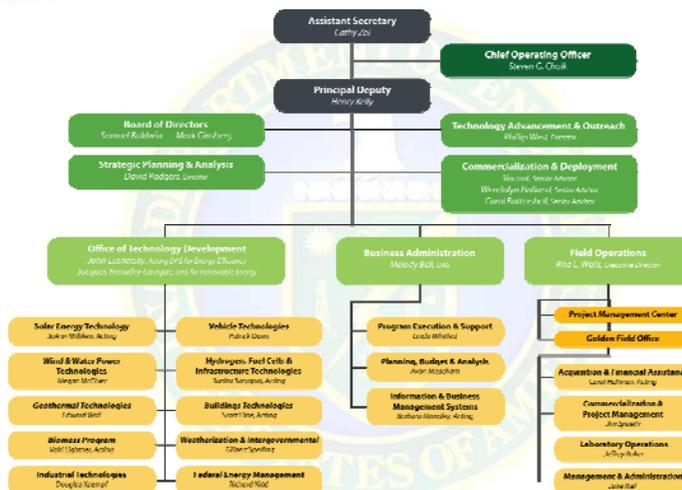


Greening Federal Buildings

Improve the efficiency of Federal Government offices and buildings, reducing energy bills and creating jobs.



EERE Organization

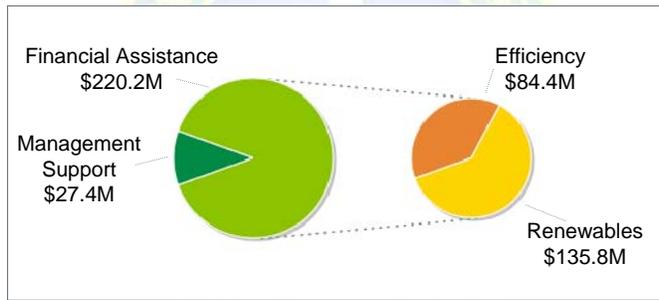


http://www1.eere.energy.gov/office_eere/pdfs/eere_orgchart.pdf



Current Small Business Participation with EERE

❖ Amount of Current Total Funding: \$247.6 M



Current EERE Opportunities (Recovery Act)

| Solicitation | | Total Amount | Deadline | Expected # of Awards |
|--------------------------------|--|----------------|----------|----------------------|
| RENEWABLE ENERGY GRANTS | | | | |
| Biomass | Expansion of Infrastructure for Ethanol Blends | \$8 M | TBA | |
| | Development of Algal / Advanced Biofuels Consortia | \$85 M | 9/15/09 | 3 |
| State/Local | Community Renewable Energy Deployment | \$21 M | 9/13/09 | 4 |
| Solar | Baseload Concentrating Solar Power Generation | Up to \$52.5 M | 10/15/09 | 13 |
| | Solar America Cities-Technical Outreach | Up to \$10.5 M | 10/15/09 | 1 |
| | Solar America Showcase General Projects | Up to \$0.5 M | 12/31/09 | 6 |



Current EERE Opportunities (Recovery Act)

| Solicitation | | Total Amount | Deadline | Expected # of Awards |
|--|---|--------------|----------|----------------------|
| TRANSPORTATION GRANTS | | | | |
| Trucks | Systems Level Technology Development, Integration, and Demonstration for Efficient Class 8 Trucks (SuperTruck) and Advanced Technology Powertrains For Light-Duty Vehicles (ATP-LD) | \$115-240 M | 9/9/09 | 11 |
| BUILDING & MATERIALS GRANTS | | | | |
| Commercial | Training Program Development for Commercial Building Equipment Technicians, Building Operators, and Energy Commissioning Agents/Auditors | \$7.5 M | 9/1/09 | |
| Residential | Building America Energy Efficient Housing Partnerships | \$25 M | 8/24/09 | |
| Materials | Advanced Energy Efficient Building Technologies | \$25-75 M | 8/18/09 | |
| Lighting | Solid-State Lighting Product Development – Round VI | \$11.5 M | 8/17/09 | |
| | Solid-State Lighting U.S. Manufacturing – Round 1 | \$22 M | 8/24/09 | |
| LOAN GUARANTEES | | | | |
| ATVM | Advanced Technology Vehicles Manufacturing Incentive Program | \$25,000 M | Rolling | |

- ❖ For more information, please visit: <http://www.energy.gov/recovery/funding.htm> and http://www1.eere.energy.gov/solar/financial_opportunities.html



Current and Upcoming Program Specific Opportunities

- ❖ **Biomass**
 - ❖ Fundamental Research in Key Program Areas, \$110 M, 9/4/09 deadline
 - ❖ Investigation of intermediate ethanol blends, optimization of E-85 engines, and development of transportation infrastructure, \$20 M, 9/30/09 deadline
- ❖ **Buildings**
 - ❖ National Accounts Acceleration in Support of the Commercial Buildings Initiative, \$60 M, TBD
 - ❖ Buildings and Appliance Market Transformation, \$66 M, 8/10/09 deadline
 - ❖ Solid State Lighting (U.S. Manufacturing), \$50 M, 8/10/09
- ❖ **Geothermal**
 - ❖ Low-Temperature/Oil and Gas/Geopressed Demonstrations, \$50 M, 9/15/09 deadline
 - ❖ National Geothermal Data System Population, \$20 M, 10/15/09 deadline
 - ❖ Ground Source Heat Pumps, \$50 M, 10/31/09 deadline
- ❖ **Manufacturing**
 - ❖ Manufacturing Tax Credit, \$2.3 B, opens 8/15/09



Auto Loan Program

EISA 2007 §136: Advanced Technology Vehicle Manufacturing Loan Program

| | | |
|--|---|--|
| Program Goal | \$25B in loans available to manufacturers and their suppliers for the cost of re-equipping, expanding, or establishing manufacturing facilities in the U.S. to produce qualified advanced technology vehicles or components. | |
| EERE Role | Provides guidance to loan program on technical completeness, eligibility and merit of applicant project proposals. | |
| Qualifying Advanced Technology Vehicles (ATV) | <ul style="list-style-type: none"> • Must meet criteria for light duty vehicles • Must meet 125% of mpg in 2005 for "substantially similar vehicles" • Must meet Bin 5 Tier II emissions standards and any new emission standard in effect for fine particulates | |
| Qualifying Components | <ul style="list-style-type: none"> • Must be specifically designed for installation in qualifying ATVs • Must contribute to the qualifying ATV's performance requirements | |
| Status | Timeline EISA 2007, §136 signed \$25B appropriated Interim Final Rule published in Federal Register \$8B awarded to first 3 applicants Open for applicants | 12/19/07 9/30/08 11/05/08 6/23/09 |



Existing SBIR/STTR Projects

| 2008 EERE Phase I Awards | |
|--------------------------|-----|
| Number of Topics | 9 |
| Applications Submitted | 362 |
| Awards (SBIR and STTR) | 35 |

See http://www.science.doe.gov/sbir/awards_abstracts/sbirsttr/cycle27/phase1/p1_award.htm for more information.

| 2009 EERE Phase I Awards | |
|--|--------------|
| Topic | Total Awards |
| Solid State Lighting | 6 |
| Advanced Materials and Technologies for Cooling and Waste Heat Recovery | 9 |
| Energy Efficient Membranes | 8 |
| Catalysis | 5 |
| Nanotechnology | 6 |
| Technologies Related to Energy Storage for Hybrid and Plug-in hybrid electric vehicles | 7 |
| Energy Savings Technologies for Commodity Manufacturing Industries | 5 |
| Increasing Efficiency in Traditional Lighting Technologies | 4 |
| Production of Biofuels from Biomass | 4 |
| Advanced Water Power Technology Development | 5 |
| Wind Energy Technology Development | 3 |
| Geothermal Technologies | 1 |
| Hydrogen, Fuel Cells, and Infrastructure Technologies | 6 |
| Solar Energy | 6 |
| Improved Motor Designs and Power Electronics Advancements for Hybrid and Plug-in Electric Vehicles | 5 |
| Total EERE | 80 |



Recovery Act Solicitation for Small Businesses

Small Business Innovation Research (SBIR) and
Small Business Technology Transfer (STTR) Program

| Topic | Description |
|----------|---|
| Topic 1 | Advanced Building Air Conditioning and Refrigeration, Thermal Load Shifting, and Cool Roofs |
| Topic 2 | Water Usage in Electric Power Production |
| Topic 3 | Power Plant Cooling |
| Topic 4 | Advanced Gas Turbines and Materials |
| Topic 5 | Sensors, Controls, and Wireless Networks |
| Topic 6 | Advanced Water Power Technology Development |
| Topic 7 | Smart Controllers for Smart Grid Applications |
| Topic 8 | Advanced Solar Technologies |
| Topic 9 | Advanced Industrial Technologies Development |
| Topic 10 | Advanced Manufacturing Processes |

- Total of \$37M available
- FOA released August 5, 2009
- Phase I grant application due September 4, 2009

Go to:
www.grants.gov
DE-PS02-09ER09-27



Annual SBIR Solicitation

FY 2010

- ❖ To be issued September 13, 2009.
- ❖ Topics for renewables and energy efficiency will be biomass, geothermal, wind, vehicles, and hydrogen and fuel cells.
- ❖ Specific topics will include catalysis and alternative feedstocks.
- ❖ Estimated \$35M will be available.



For More Information On SBIR/STTR

- ❖ **Sam Baldwin**, *Chief Technology Officer and Member*
Board of Directors
Office of Energy Efficiency and Renewable Energy
Phone: 202-586-0927
Email: sam.baldwin@ee.doe.gov
- ❖ **Charlie Russomanno**, *DOE SBIR/STTR Portfolio Manager*
Office of Energy Efficiency and Renewable Energy
U.S. Department of Energy
Phone: 202-586-7543
Email: charles.russomanno@ee.doe.gov
- ❖ http://www.management.energy.gov/business_doe/small_business.htm



Small Business Success Story

A123Systems

A123Systems is an energy company founded in 2001 focused on delivering superior high power lithium ion solutions.



2002

- ❖ 5 employees
- ❖ \$100,000 DOE Phase I SBIR

Today

- ❖ 2000 employees
- ❖ Awarded \$249M DOE grant to build advanced battery manufacturing facilities in the U.S.
- ❖ \$320M of private capital invested
- ❖ World's largest maker of phosphate lithium ion

<http://www.a123systems.com>



Back-up Slides



Recovery Act Funding

| Recovery Act Funding | Recovery Act (\$ Millions) |
|---|----------------------------|
| EERE Discretionary RD&D | \$2,500 |
| Technology RD&D (Solar, ITP, Buildings, Wind, etc.) | \$1,250 |
| Biomass | \$800 |
| Geothermal Technologies | \$400 |
| Information and Communications Technology | \$50 |
| EERE Directed Funding | \$14,300 |
| Energy Efficiency & Conservation Block Grants | \$3,200 |
| State Energy Program | \$3,100 |
| Weatherization Assistance Program | \$5,000 |
| Energy Star Rebates | \$300 |
| Transportation Electrification | \$400 |
| Clean Cities Alternative Fuels Pilot Program | \$300 |
| Advanced Battery & Hybrid Components Manufacturing | \$2,000 |
| EERE Total | \$16,800 |

<http://www.energy.gov/recovery/>