

FEDERAL GRANT OPPORTUNITIES

updated 06/19/09

new opportunities or changes highlighted

Open grants & deadlines:

- **Industrial Energy Efficiency Grand Challenge** *(June 15, July 14)*
- **Wind Energy Consortia between Institutions of Higher Learning & Industry (Wind & Hydropower Technologies Program)** *(June 29, July 29)*
- **Novel Non-Precious Metal Hydrogen Separation and Production R&D** *(July 1)*
- **Minority University Research Associate Program** *(July 13)*
- **Deployment of Combined Heat & Power (CHP) Systems, District Energy Systems, Waste Energy Recovery Systems, & Efficient Industrial Equipment** *(July 14)*
- **Geothermal Technologies Program: Ground Source Heat Pumps** *(July 16 & August 6)*
- **Enhanced Geothermal Systems (EGS) Component Research & Development Analysis** *(July 17)*
- **Energy Efficient Information & Communication Technology** *(July 21)*
- **Climate Showcase Communities** *(July 22)*
- **Clean Coal Power Initiative – Round 3** *(July 24, August 24)*
- **Solar Market Transformation – Solar Workforce Development** *(July 30)*
- **High Penetration Solar Deployment** *(July 30)*
- **Enhanced Geothermal Systems (EGS) Demonstration** *(July 30)*
- **Rural Energy for America Program/Renewable Energy Systems/Energy Efficiency Improvement Program** *(July 31)*
- **Carbon Capture & Sequestration from Industrial Sources & Innovative Concepts for Beneficial CO₂** *(August 7)*
- **Resource Assessment & Interconnection Level Transmission Analysis & Planning** *(August 14)*

- **Systems Level Technology Development, Integration, & Demonstration for Efficient Class 8 Trucks (SuperTruck) and Advanced Technology Powertrains for Light-Duty Vehicles (ATP-LD) *(September 9)***

Industrial Energy Efficiency Grand Challenge

FOA # DE-FOA-0000113

- Letter of intent due June 15, 2009
- Application due date: July 14, 2009
- \$5 million available in FY 2009; \$10 million available in FY 2010
- \$100,000 floor; \$300,000 ceiling
- Cost share no less than 20% of total Concept Definition study cost
- 50 expected awards
- Duration: 1 year
- See <http://www.fedconnect.net/> for additional information
- Eligible applicants (*note: teaming strongly encouraged*): large and small companies, academia, trade organizations, research organizations
- Purpose: to fund cost-shared development of transformational industrial processes and technologies that reduce the energy intensity (million Btus per unit system output) or greenhouse gas emissions (carbon equivalent) of the system by 25% while providing a return on investment of 10% or more
- Goal: to cost-effectively improve energy efficiency of U.S. economy
- FOA seeks Concept Definition (Stage 2) projects. Per DOE, concept definition involves early stage research needed to explore and define technical concepts and may include laboratory scale experiments, exploration of fundamental science concepts associated with technology, data generation, and analysis
- Project should indicate how technology will eventually fit into commercial markets

- *Topic Area 1: Next Generation Manufacturing Concepts*
 - Entirely new manufacturing concepts to potentially replace conventional manufacturing processes
 - Study will focus on specific, promising technologies that offer the potential for major energy, carbon, and economic benefits

- *Topic Area 2: Energy Intensive Processes*
 - Must address specific technology areas that are expected to generate large energy-saving benefits
 - 4 technology areas expected to generate large energy-saving benefits
 1. Reactions and separations
 2. High temperature processing
 3. Waste heat minimization and recovery
 4. Sustainable manufacturing

- *Topic Area 3: Advanced Materials*
 - Study to focus on specific, promising industrial materials technologies that offer potential for major energy, carbon, and economic benefits in two areas
 1. Thermal and degradation resistant materials
 2. Materials for energy systems

- *Topic Area 4: Industrial Greenhouse Gas Emissions Reduction*
 - Transformational technologies that address carbon intensity reductions and absolute carbon reductions

ARRA – Wind Energy Consortia between Institutions of Higher Learning & Industry (Wind and Hydropower Technologies Program)

FOA # DE-FOA-0000090

- Letter of intent due June 29, 2009
- Application due July 29, 2009
- Mission: “Responsible stewardship of national resources to increase the development and deployment of reliable, affordable, and environmentally sustainable wind and water power and realize the benefits of domestic renewable energy production”
- \$24 million available; \$12 million available for 1st year of funding
- \$8 million floor; \$12 million ceiling
- 10% cost share required
- 2 year period of performance
- Eligible applicants: Consortia led by institution of higher learning
 - Must include at least one four-year institution that has at least one engineering program accredited by ABET
 - Turbine location must have Power Class 3 at 50 meters and above wind resources and be within 50 miles of university
- Additional information at <http://www.fedconnect.net/>
- *2 areas, but not separate topics*
 1. Partnerships for Wind Research and Turbine Reliability
 - Universities in Power Class 3 at 50 meters or greater wind region with consistent wind resources throughout year are encouraged to team with industry partners to establish facilities/equipment and research agenda necessary to study major challenges facing the wind industry
 - Address 1 or more challenges in 20% Wind Energy by 2030 report and describe how wind hardware and software will be acquired
 - Research in turbine reliability is encouraged
 2. Wind Energy Research & Development
 - University research & development to advance material design, performance measurements, analytical models, and leveraging partnership with industry to improve power systems operations, maintenance or repair operations, wind turbine and/or component manufacturing, and interdisciplinary system integration
 - Universities encouraged to partner with wind industry in defining R&D agenda, curriculum, and intern partnership

Novel Non-Precious Metal Hydrogen Separation and Production R&D

FOA # DE-FOA-0000103

- Letter of intent due July 1, 2009
- \$5 million available
- 3 year period of performance
- View <http://www.fedconnect.net/> for additional information

- *Topic Area 1 – Novel Non-Precious Metal Hydrogen Separation and Production R&D*
 - Research at laboratory level for innovative membrane materials, concepts, and strategies which separate hydrogen from a coal-based system sufficiently enough to meet DOE 2015 targets of flux, selectivity, cost, and chemical and mechanical robustness without use of platinum group metals (PGMs)

- *Topic Area 2 – Hydrogen Production R&D*
 - Research at laboratory level exploring novel methods for central hydrogen production implementing various methods via coal-based facilities
 - Must meet DOE 2015 targets of purity, hydrogen production rate, and costs
 - Processes based on natural gas only and electrolysis of water are not sought

Minority University Research Associate (MURA) Program

Funding Opportunity Announcement # DE-FOA-0000089

- Application due date: July 13, 2009
- \$600,000 available for grants in FY 2009, and \$1.2 million in FY 2010 – FY 2011
- \$20,000 floor, \$300,000 ceiling
- 3 year period of performance
- Cost share: 20% of total allowable costs for research & development projects
- Eligible applicants: restricted to accredited, domestic colleges and universities defined as Minority Serving Institutions
 - Per US Department of Education, Accredited Post Secondary Minority Institutions (from IPEDS Spring 2007 Survey from Fall Enrollment 2006), in Indiana, this includes Martin University and Calumet College of Saint Joseph, Whiting
- MURA program is a research program that encourages minority students to pursue careers in science and technology
- All areas of solar energy technology-related research are of interest, including, but not limited to:
 - Studies of photovoltaic materials and devices
 - Concentrating solar power technologies
 - Manufacturing issues of solar components and systems
 - Measurements and testing
 - Studies of applications, markets, market development, and impacts of solar systems
- May include experimental work, including:
 - Lab studies
 - Designing, building, and testing of systems
 - Market, policy, and economic studies
 - Curriculum development for middle school, high school, or college level renewable energy education
- Applicants must address the advancement of the student's knowledge of renewable energy technology, specifically solar technology, and encourage students to pursue advanced degrees and/or a career in renewable energy

ARRA – Deployment of Combined Heat & Power (CHP) Systems, District Energy Systems, Waste Energy Recovery Systems, & Efficient Industrial Equipment

Funding Opportunity Announcement # DE-FOA-0000044

- Application due date: July 14, 2009
- \$156 million available
- 5-30 awards
- Performance period of 1-3 years
- See <http://www.fedconnect.net/> for additional information
- Eligible applicants: All except federal agencies, federally-funded Research & Development Center contractors, and non-profit organizations as described in 501(c)(4) in Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995

- *Area 1: Combined Heat & Power*
 - \$1 million floor
 - Cost share of 50%, but as low as 25% could be considered
 - Generation of electric energy and heat in a single, integrated system, with thermal efficiency of 60% or more on higher-heating value basis
 - Grant for deployment of commercially-available CHP technologies
 - May include single or multiple installations at multiple sites
 - Should replace an inefficient existing system, with at least 25% efficiency increase when compared to the system being replaced, or system should not have existed previously

- *Area 2: District Energy Systems*
 - \$10 million floor
 - 1-4 expected awards
 - Cost share of 50%, but as low as 25% could be considered
 - District Energy Systems: systems providing thermal energy from renewable energy sources, thermal energy source, or highly efficient technology to more than 1 building or fixed energy consuming use from 1 or more thermal energy production facilities through pipes or other means to provide space heating or conditioning, hot water, steam, compression process energy
 - Grant for deployment of commercially available district energy system technologies
 - May include single or multiple installations at multiple sites
 - For new district energy systems where technology previously didn't exist or for the replacement of an inefficient system
 - Minimum 60% efficiency for system
 - If a replacement, should have at least 60% efficiency and represent a 25% efficiency increase compared to the replaced systems

- *Area 3: Waste Energy Recovery*
 - \$500,000 floor
 - 5-30 expected awards
 - Cost share of 50%, but as low as 25% could be considered
 - Waste Energy Recovery: Collection and reuse of energy from sources such as exhaust heat or flared gas from any industrial process: waste gas or industrial tail gas that would otherwise be flared, incinerated, or vented; a pressure drop in any gas, excluding any pressure drop to a condenser that subsequently vents the resulting heat
 - For commercially available waste energy recovery technologies
 - May include single or multiple installations at multiple sites
 - Limited to new integrated waste energy systems where similar systems didn't exist or for the replacement of an inefficient existing system
 - New systems must have a minimum efficiency of 30%
 - Replacement systems must have a minimum of 30% efficiency, with a 25% increase over the replaced system

- *Area 4: Efficient Industrial Technology*
 - \$10 million floor
 - Expected 1-8 awards
 - Cost share: 50%
 - Any proven, commercially-available technology
 - Grant for the deployment of technologies and systems with a minimum efficiency improvement of 25% into industrial sector
 - Required bundling of multiple projects
 - Project sized to exceed \$10 million total project value

ARRA – Geothermal Technologies Program: Ground Source Heat Pumps (GHP)

Funding Opportunity Announcement # DE-FOA-0000116

- Notice of Intent due by July 16, 2009
- Application due date: August 6, 2009
- \$50 million available
- See <http://www.fedconnect.net/> for additional information
- Greater consideration will be given to applicants with more aggressive completion schedules, that create more jobs, that have a greater cost share, and show cooperation between industry, education, and/or Indian tribes
- Eligible applicants: State and local governments, higher education, non-profits, for-profit private entities, Indian Tribes, and Tribal Energy Resource Development organizations or groups

- *Area 1: Technology Demonstration Projects*
 - Ceiling of \$5 million
 - Minimum cost share of 50%
 - Up to 10 awards
 - Performance period of 5 years
 - For mid- to large-scale (50-100 tons heating and/or cooling) cost-shared technology demonstration projects that incorporate innovative business and financing strategies and/or technical approaches designed to overcome commercialization barriers that exist for GHPs
 - Includes data gathering and analysis

- *Area 2: Data Gathering & Analysis*
 - Ceiling of \$250,000
 - Minimum cost share of 20%
 - Up to 8 awards
 - Performance period of 1 year
 - For research papers related to system costs, performance, and installation techniques which will provide insights into lowest life-cycle cost applications for GHPs and assist customers in determining project feasibility
 - Should collaborate with industry, academia, and National Laboratory partners
 - Should model system performance and cost benefits for system design and applications for small residential to large heating systems

- *Area 3: National Certification Standard*
 - Ceiling of \$3 million
 - No cost share
 - Up to 3 awards
 - Performance period of 5 years
 - To create a national certification standard for GHP industry
 - Should increase consumer confidence, reduce potential for improperly-installed systems, and assure quality
 - Should solicit information from industry stakeholders, manufacturers, and trade organizations

ARRA – Enhanced Geothermal Systems Component Research & Development Analysis

FOA # DE-FOA-0000075

- Application due by July 17, 2009
- \$56 million available
- 20-30 expected awards
- Ceiling based on topic areas
- 1-3 year performance period
- Funds to find cost-effective creation, management, and utilization of EGS in reservoir environments
- Programs to establish critical energy, environmental, and economic baseline information needed in 23 target areas
- See <http://www.fedconnect.net/> for additional information

ARRA – Energy Efficient Information & Communication Technology

FOA # DE-FOA-0000107

- Application due: July 21, 2009
- Ceiling: \$10 million
- \$50 million available for new awards
- 5-15 expected awards
- 1-2 year performance period, depending on topic area
- Goal: To develop new technologies to dramatically improve energy efficiency in information, communications technology (ICT) with emphasis on new technologies that can be commercialized within next 3-5 years, and to demonstrate through field testing highly energy efficient, emerging technologies that are ready for or are in the initial state of commercial introduction
- See <http://www.fedconnect.net/> for additional information

- *Area 1: Concept Definition Studies for Energy Efficient Information and Communications Technology*
 - Technologies considered for Concept Definition Studies must be at Stage 2 as defined by *ITP Stage-Gate Innovation Management Guidelines*
 - Focus on specific, ICT technology that offers potential for major energy, carbon, and economic benefits
 - Must identify how technology will eventually fit into commercial markets
 - Will identify technical barriers and critical R&D paths for developing a commercial application or product that addresses a significant market opportunity
 - Study should address technology applicable to one of three categories
 1. Equipment and software
 2. Power supply chain
 3. Cooling

- *Area 2: Information & Communications Technologies R&D for Energy Efficiency*
 - Proposals in three areas:
 1. Equipment and software
 - Develop all-optical systems to increase energy efficiency
 - Advance ultra-low power circuits
 - Utilize ultra-efficient nano-electronic circuitry
 - Create hardened electronic equipment which can withstand temperature, humidity, and particulate conditions outside boundary of current generation electronics

2. Power Supply Chain (R&D proposals may address the following)
 - Research and develop high-efficiency power conversion circuits which optimize server-based data center and telecommunication equipment
 - Develop special purpose chips, multiphase clocking, lower-power chips
 - Research use of optical switching
 - R&D of superconducting components
 - Efficiency optimized control systems for power conversions
 3. Cooling – cooling of server-based telephone central offices and data centers can be made more energy efficient through:
 - Creating advanced component level cooling technologies
 - Develop mitigation techniques to reduce probability of failures associated with “free” cooling
 - Identify and create effective uses of low-quality waste heat generated
- R&D applicants must be organizational participants capable of and experienced in:
 4. Research
 5. Manufacturing the technology proposed
 6. Bringing technology to end user through sales and marketing
 7. Serving as an end user of technology proposed
 - R&D project to be funded for two years
- *Area 3 – Demonstration & Field Testing of Highly Energy Efficient & Emerging Technologies for Data Center or Telecommunications Use*
 - For field testing and independently validating the energy performance of emerging technologies that show potential to improve energy efficiency while not compromising data center or telecommunications reliability
 - Applicant must show plan for technologies to be demonstrated and the adoption of other best energy management practices to improve a data or telecommunication center’s energy intensity performance by more than 25% and have a data center infrastructure efficiency of 0.80 or greater
 - New and innovative technologies that are not widely commercial and improve parts of a data center or telecommunications facility to be considered:
 - IT optimization
 - Energy efficient electrical power distribution and supply
 - Energy efficient cooling schemes
 - Distributed generation or alternative power technologies

Climate Showcase Communities

RFA # EPA-OAR-CPPD-09-08

- Informal letter of intent due by July 1, 2009 (optional)
- Application due July 22, 2009
- Total funding: \$10 million
- 20-30 cooperative agreements
- Project period to begin January 1, 2010, for period up to three years
- Eligible entities:
 - Local governments: county, municipality, city, town, township, local public authority, school district, intrastate district, council of governments, any other regional or interstate government entity, or any agency or instrumentality of a local government
 - Federally-recognized Indian tribal governments and intertribal consortiums
- 50% match required, in form of cash or as in-kind contributions for local governments only
- Funding for planning, demonstration, and/or implementation projects designed to address climate change by reducing greenhouse gas emissions
- Must address one or more priority areas:
 - Energy performance in municipal operations
 - Energy performance in residential, commercial, agricultural, aqua-cultural, and/or industrial buildings
 - Land use, transportation, or community master planning
 - Reduction of vehicle miles traveled
 - Solid waste management
 - Agricultural, aqua-cultural, and natural resource management
 - Use or supply of green power products, on-site renewable, and other clean energy supply options
 - Heat island management
 - Removal of barriers for greenhouse gas management, through development of effective programs, policies, or outreach
- Applications should:
 - Achieve ongoing greenhouse gas reductions
 - Build capacity within local and tribal agencies to address greenhouse gas emissions
 - Build and leverage partnerships across multiple stakeholder groups
 - Link climate change initiatives with broader environmental, economic, health, and social co-benefits
 - Link funded activities to broader climate management
 - Create models of success that are broadly replicable
- Visit <http://www.epa.gov/air/grants/09-08.pdf> for additional information

Clean Coal Power Initiative – Round 3

FOA # DE-FOA-0000042 (Amendment #005)

- Letter of intent due by July 24, 2009
- Application due August 24, 2009
- Applicants who accept selections from previous closing date of January 20, 2009, will not be considered under this re-opened FOA
- \$1.4 billion available
- Eligible applicants: All, except for other federal agencies, federally funded Research and Development Center contractors, and non-profits as described in Section 501(c)(4) of Internal Revenue Code of 1986, lobbying after December 31, 1995
- See <http://www.fedconnect.net/> for additional information.
- Objective: To demonstrate advanced coal-based technologies that capture or sequester, or put to beneficial use, CO₂ emissions
- Demonstrate at a commercial scale in a commercial setting technologies that:
 - Can achieve minimum of 50% CO₂ capture efficiency and make progress toward a target CO₂ efficiency of 90% in a gas steam containing at least 10% CO₂ by volume
 - Make progress toward capture and sequestration goal of less than 10% increase in cost of electricity for gasification systems and less than 35% for combustion and oxycombustion systems all as compared to 2008 practice
 - Capture and sequester or put to beneficial use a minimum of 300,000 tons per year of CO₂ emissions using a 30-day running average to determine if project successfully meets the CO₂ capture efficiency and the capture and sequestration or beneficial use rate requirements of FOA

ARRA – Solar Market Transformation – Solar Workforce Development

FOA # DE-FOA-0000078

- Application due by July 30, 2009
- See <http://www.fedconnect.net/> for additional information

- *Topic 2 – Solar Installer Instructor Training*
 - Goal: to promote increase in the quality and availability of instruction relating to installation of PV and SHC systems
 - 2 categories of funding
 - Regional Resource & Training Providers
 - Provide training and professional development to instructors who are creating or improving existing PV or SHC installation training courses
 - Awardees will be entities that currently offer high quality training in solar installation process and possess excellent instructors and training facilities
 - Categories:
 - 1A – PV only
 - 1B – SHC only
 - 1C – PV & SHC
 - Administration of the National Consortium for Solar Installer Instructor Training
 - Primary task: to create and manage operations of National Consortium for solar installer instructor training and to coordinate activities between itself, the National Consortium, and the Regional Resource and Training Providers

ARRA – High Penetration Solar Deployment

FOA # DE-FOA-0000085

- Application due by July 30, 2009
- See <http://www.fedconnect.net/> for additional information
- Must have a team approach: members of PV suppliers, integrators, and research institutions is preferred; one electric utility participation is required in all topic areas
- Cost share required, depending on topic area

- *Topic Area 1: Improved Modeling Tools Development*
 - 12 month phases, project period over 3 years
 - Development of PV performance models and their integration into existing distribution system planning and engineering analysis
 - Improved ability to model effects of high penetration solar electricity generation on electric distribution system
 - Approaches for enhanced PV performance models and should encompass new inverter models to better understand the performance of inverter designs for load flow analysis under normal and fault conditions as well as for short circuit current calculations

- *Topic Area 2: Field Verification of High-Penetration Levels of PV into the Distribution Grid*
 - 3-5 12 month phases
 - Must address modeling and approaches for field testing and validation of high-penetration levels of PV on prototypical distribution circuits and on new circuit configurations for optimized technical and economic performance

- *Topic Area 3: Modular Power Architecture*
 - One phase, 1 year performance period
 - Demonstrate that low-cost, easy-to-install modular and scalable power architecture can be deployed throughout the U.S.

- *Topic Area 4: Demonstration of PV and Energy Storage for Smart Grids*
 - One phase, 12 month completion
 - Integrate PV and energy storage into Advanced Metering Infrastructure (AMI) pilot programs

Enhanced Geothermal Systems (EGS) Demonstration

FOA # DE-FOA-0000092

- Application due by July 30, 2009
- \$90 million available
- \$25 million ceiling
- 10 expected awards
- 50% cost share, but cost share as low as 25% could be considered
- Eligible applicants: Institutions of higher educations, non-profits, for-profit entities, state and local governments, Indian Tribes
- Geothermal Technologies Program (GTP) will facilitate research, development, and demonstration to establish geothermal energy as a major contributor for electricity generation
- Seeking projects in a variety of geologic formations to quantitatively demonstrate and validate stimulation techniques that successfully sustain sufficient fluid flow and heat extraction for 5-7 years that produce up to 50 MWe per year per project site/geothermal reservoir
- Applicant must provide sufficient legal documentation to demonstrate legal surface and subsurface rights necessary for stimulation and heat mining; applicant must also include NEPA EF1
- See <http://www.fedconnect.net/> for additional information

Rural Energy for America Program/Renewable Energy Systems/Energy Efficiency Improvement Program

- Application due by July 31, 2009
- Grant for up to 25% of total eligible costs; ceiling of \$500,000 for renewable energy systems and \$250,000 for energy efficient improvements
- Eligible applicants: All agricultural producers who gain 50% or more of gross income from any agricultural operations; rural small businesses and rural electric co-ops may also be eligible
- Eligible projects: Lighting retrofits, insulation, renewable energy projects from wind, solar, biomass, geothermal, hydro-power, and hydrogen based sources
- For more information, visit <http://www.rurdev.usda.gov/rbs/busp/9006grant.htm> or contact your local USDA Rural Development office.

ARRA – Carbon Capture & Sequestration from Industrial Sources and Innovative Concepts for Beneficial CO₂

FOA # DE-FOA-0000015

- Application due by August 7, 2009
- Eligible applicants: all, except other federal agencies, federally-funded Research & Development Center Contractors, and nonprofits, as described in 501(c)(4) of Internal Revenue Code of 1986 that engaged in lobbying activities after 12/31/95
- View <http://www.fedconnect.net/> for additional information.

- *Area 1: Large-Scale Industrial CCS Projects from Industrial Sources*
 - Demonstrate advanced technologies that capture and sequester carbon dioxide emissions from industrial sources into underground formations
 - Plants with electric power output greater than 50% of total energy output that operate on more than 55% coal as feedstock are ineligible

- *Area 2: Innovative Concepts for Beneficial CO₂ Use*
 - Demonstrate innovative concepts for beneficial CO₂ use, including CO₂ mineralization to carbonates directly through conversion of CO₂ in flue gas; use of CO₂ from power plants or industrial applications to grow algae/biomass; conversion of CO₂ to fuels and chemicals

ARRA – Resource Assessment & Interconnection Level Transmission Analysis & Planning

FOA # DE-FOA-0000068

- Application due by August 14, 2009
- Estimated funding up to \$60 million; approximately 6 awards
- Period of performance for 3-5 years
- Eligibility: All domestic entities except DOE/NNSA National Laboratory contractors, other federal agencies, non-DOE Federally Funded Research and Development Center contractors, and non-profits as described in 501(c)(4) of Internal Revenue Code of 1986 that engaged in lobbying after December 31, 1995.
- Visit <http://www.fedconnect.net/> for additional information
- Objective: to facilitate development or strengthening of capabilities in each of 3 interconnections serving lower 48 states, to prepare analyses of transmission requirements under a broad range of alternative futures and develop long term interconnection-wide transmission expansion plans

- *Topic A: Interconnection-Level Analysis & Planning*
 - Work to be performed must cover entire interconnection
 - Analyses and planning must be done in transparent manner, open to participation by state and federal officials, representatives from ISOs, RTOs, utilities, and relevant stakeholder bodies or NGOs
 - Must establish a multi-constituency steering group; 1/3 of members shall be state officials
 - Modeling tools and databases used and developed will be public, as will all events and meetings of study groups
 - Work performed shall give appropriate attention to merits of alternative configurations of the interconnection's Extra High Voltage (EHV) AC & DC network
 - Work shall give special attention to technological uncertainties that could have major effects on transmission requirements, such as the prospects for offshore wind generation, ocean energy, batteries for plug-in electric vehicles, on-site photovoltaic, carbon capture and sequestration, and advanced nuclear technologies
 - May include supporting analyses or topics such as variable generation integration studies, training of utility system planners and operators on variable generation and interconnection planning, reliability analyses of alternate large transmission configurations

- Long term transmission plans shall satisfy all reliability standards that have been approved by the Federal Energy Regulatory Commission. Must achieve the following objectives:
 - Consider all available technologies for electricity generation, energy storage, transmission, end-use energy efficiency, demand resources, and management of transmission and distribution-level facilities
 - Satisfy all state and federal requirements for renewable energy goals, energy efficiency goals, and goals for reducing greenhouse gases
 - Minimize overall long-term impacts of electricity supply activities on environment
 - Provide a path for efficient grid development
- First version of interconnection-level plan(s) to be delivered to DOE by June 30, 2011; updated plan to be delivered by June 30, 2013

- *Topic B: Cooperation Among States on Electric Resource Planning and Priorities*
 - Purpose: to facilitate dialogue and collaboration among states in respective interconnections and enable them to develop more consistent and coordinated input and guidance for regional and interconnection-level analyses and planning to be done under Topic A
 - 3 interconnections – Western, Eastern, & Texan; see FOA for Western & Texan information
 - *Cooperation Among States in Eastern Interconnection on Electric Resource Planning and Priorities*
 - Identify Eastern energy zones of interest for low or no carbon electricity generation
 - Propose studies on key issues related to reliable integration of variable renewable into Eastern interconnection, studies on availability of baseload renewable, and other low carbon resources
 - Develop other inputs as needed to go into the interconnection-level analyses prepared under Topic A
 - Provide insight into economic and environmental implications of the alternative electricity futures and their associated transmission requirements developed for the Eastern Interconnection under Topic A
 - Demonstrate (and develop if necessary) a process for reaching decisions and consensus appropriate for an interconnection-wide entity representing all states and provinces in Eastern Interconnection to participate in development and updating of long-term interconnection-level plan under Topic A

ARRA – Systems Level Technology Development, Integration, and Demonstration for Efficient Class 8 Trucks (SuperTruck) and Advanced Technology Powertrains for Light-Duty Vehicles

FOA # DE-FOA-0000079

- Application due by September 9, 2009
- Eligible applicants: All, except federal agencies, FFRDC contractors, non-profits as described in 501(c)(4) of Internal Revenue Code of 1986 that engaged in lobbying after December 31, 1995
- See <http://www.fedconnect.net/> for additional information

- *Area 1: Systems Level Technology Development, Integration, and Demonstration for Efficient Class 8 Trucks*
 - Develop and demonstrate a 50% total increase in vehicle freight efficiency measured in ton-miles per gallon
 - At least 20% of improvement through the development of heavy duty diesel-engine capable of achieving 50% Brake Thermal Efficiency (BTE) on a dynamometer under a load representative of a level road at 65 mph
 - Identify key pathways to achieving long-term goal of developing a 55% efficient (BTE) heavy duty diesel engine; must meet 2010 emission standards and be commercially viable
 - \$90 million - \$160 million available; 3-5 expected awards
 - Ceiling: \$80 million (DOE share \$40 million)
 - Floor: \$40 million (DOE share \$20 million)

- *Area 2: Advanced Technology Powertrains for Light Duty Vehicles*
 - Goal: To accelerate development of a cost-competitive engine and powertrain systems for light-duty vehicles capable of attaining at least 25% fuel economy improvement for gasoline fueled vehicles and at least 40% fuel economy for diesel fueled vehicles while meeting future emissions standards
 - \$25 million - \$80 million available; 3-6 expected awards
 - Ceiling: \$30 million (DOE share \$15 million)
 - Floor: \$4 million (DOE share \$2 million)