

Smart Grid Stimulus: Business Opportunities Will Depend on Agency Rules, Energy Policy

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Strong support from the Obama Administration, and billions in financial incentives from Congress, point to rapid growth opportunities for businesses in the smart grid space. Passage of the [American Recovery and Reinvestment Act](#) [.pdf] (“ARRA”) on February 17, 2009 injects billions of dollars into the development and deployment of smart grid technologies. However, businesses need to know more than just how much money Congress appropriated: knowing how these appropriations will reach the market, and how ARRA’s programs will interact with other energy policy issues, is essential to take advantage of this unprecedented level of federal energy investment.

What is Smart Grid?

The term “smart grid” describes a range of technological and infrastructure solutions related to the dynamic transfer of electricity from the electric grid to retail customers, and vice versa. Reference to Title XIII of the [Energy Independence and Security Act of 2007](#) [.pdf] (“EISA”) reveals just how broad this category is. EISA, which established the architecture for the smart grid program being funded by the ARRA, includes, among others:

- increased use of information and control technology for management and dynamic optimization of the transmission and distribution infrastructure;
- deployment and integration of distributed generation, including renewable energy;
- development and incorporation of demand response, demand-side resources and energy-efficiency resources;
- deployment and integration of smart technologies for metering and monitoring energy use, and of smart appliances;
- deployment of advanced electricity storage and peak-shaving technologies, including plug-in electric vehicles and thermal-storage air conditioning; and
- development of standards for grid communication and interoperability.

In short, a smarter electric power grid will better incorporate renewable energy resources, allow grid operators to better coordinate the flow of power within and between control areas, and provide real-time pricing of energy consumption information to customers and utilities. Because of the breadth of this area, federal investment in smart grid creates opportunities for an array of project developers and technology companies.

How Much Money is Available?

The ARRA provides targeted support for smart grid development, as well as incentives of broader application that will likely be valuable for businesses working in, or entering, the energy space. Congress appropriated \$4.5 billion to the [Office of Electricity Delivery and Energy Reliability](#) in the [Department of Energy](#) (“DOE”) for spending on grid modernization, demand responsive equipment, energy storage research, development, demonstration and deployment and, most significantly for smart grid businesses, implementation of smart grid programs created under EISA. Of the \$4.5 billion in funding, \$100 million will go towards workforce training activities, \$80 million will be used to perform a resource assessment and determine future demand and transmission needs, and \$10 million is appropriated for the Smart Grid Interoperability Framework. The balance of the funds are unrestricted by the bill and will be spent at the discretion of the DOE.

Smart grid technologies focused on modernization of the transmission infrastructure may also be able to take advantage of another \$6 billion that Congress appropriated for the DOE’s [Innovative Loan Guarantee Program](#). Such projects may be ideally positioned to receive loan guarantees because of the program’s preference for transmission projects that promote system reliability and provide environmental benefits.

In addition to appropriations targeted at developing a smarter electric grid, the ARRA includes other energy incentives that may create new business opportunities in smart grid technology. For example, they may be eligible to apply for a new tax benefit called the Qualifying Advanced Energy Project Credit, which provides a 30% tax credit for the costs of establishing, expanding, or re-equipping certain eligible manufacturing facilities. Eligible manufacturing facilities include those that produce electric grids to support the transmission and storage of energy from intermittent renewable resources.

Beyond Appropriations: How Will Money be Distributed?

Turning ARRA incentives into meaningful business opportunities requires knowing how, and to whom, the dollars will flow. Some of ARRA’s incentives, such as the tax credits, can be directly accessed by businesses. But in the case of certain credits, such as the Qualifying Advanced Energy Project Credit, businesses will need to be sure that the regulations written by the Treasury Department in consultation with the DOE include the relevant types of projects or technologies for eligibility.

Whether and how a company can take advantage of funds appropriated to DOE will be largely determined by what rules the agency adopts for the many programs it must administer. The importance of implementing rules may be obvious for new programs created by ARRA, but businesses should also expect to see new or revised procedures for existing programs. For example, DOE has discretion to use some of the \$4.5 billion appropriated for the Office of Electricity Delivery and Energy Reliability to fund programs such as the Smart Grid Regional Demonstration Initiative, the Program on Power Grid Digital Information Technology, and the Smart Grid Investment Matching Grant Program. These programs were created by EISA to promote smart grid technology research, development, and demonstration, but none have been implemented. Similarly,

DOE's Innovative Loan Guarantee Program was created by the [Energy Policy Act of 2005](#) [.pdf] but has never issued any guarantees.

Despite letting these programs lag in recent years, DOE now appears to be pursuing a much more aggressive implementation schedule. ARRA requires that, by mid-April, DOE must issue procedures for the Smart Grid Investment Matching Grant Program, which will allow businesses to receive grants for up to one half of their qualified smart grid investments. The first Innovative Loan Guarantees are also set on a fast track. Secretary Chu has publicly committed to reworking the process by which guarantees are awarded with a goal of "cutting checks" by early May 2009. Given the pace of activity in Washington, businesses will want to ensure the regulations allow their technologies and applications to benefit from ARRA stimulus and should be positioned to quickly understand the procedures that emerge. The urgency of doing so is especially great for projects receiving loan guarantees, which must be under construction by the September 30, 2011 statutory deadline.

In addition to DOE regulations, receiving money for smart grid demonstration projects will require coordination with utility companies. ARRA amends the Smart Grid Regional Demonstration Initiative to allow "other parties" to receive grants for up to half of the cost of "qualifying advanced grid technology investments made ... to carry out a demonstration project." Previously, only utility companies had been eligible for such grants. Although section 1304(b)(3)(B) of the ARRA still requires cooperation with the utility company that owns the grid facilities where the demonstration project is located, ARRA may change the nature of that cooperative relationship by allowing other parties to directly receive grant money.

The ARRA's strict transparency provisions may have some important impacts on how funds are allocated. Section 1512(c) of the ARRA requires all recipients of ARRA money to file detailed quarterly reports with the funding agency. For competitive grant awards, the [Office of Management and Budget](#) [.pdf] ("OMB") is encouraging agencies to favor applicants with a "demonstrated ability to deliver programmatic result and accountability objectives included in [the ARRA]". For grant and loan guarantee programs, agencies will be redrafting their agreements to clarify that receiving ARRA-appropriated funds is contingent on meeting section 1512 reporting requirements. In the interim, OMB is developing a standard term and condition for this purpose. Businesses that wish to compete for these funding sources should be thinking now about how they will meet this obligation.

More information about competitive grant funding opportunities should become available by mid-March. At that time, the agencies will begin posting announcements on their web sites and on [Grants.gov](#) that detail the specific requirements applicable to each grant. For companies already receiving grants through programs that will now be receiving ARRA dollars, supplemental grant awards may be available. Although OMB discourages such supplements because of the requirement that agencies separately track ARRA and non-ARRA apportioned amounts, agencies remain free to use the influx of money to renew or continue existing grant awards.

Putting ARRA in Context: State and Federal Energy Policies Drive Opportunities

Injecting billions into the smart grid space will surely produce some gains for businesses positioned to take advantage of this opportunity. However, the pace and magnitude of that growth will also be heavily affected by how state and federal energy policies evolve and interact. Making smart grid technologies commonplace among retail customers may be largely driven by the growth of distributed generation and energy efficient building codes. In Massachusetts, for example, the [Green Communities Act](#) requires the adoption of the International Energy Conservation Code as part of the state building code and allows customers to net meter excess electricity generated on site by qualified sources. Understanding the rapidly changing state policy landscape will be essential for leveraging ARRA dollars to greatest effect.

For project developers investing in transmission infrastructure upgrades, navigating the mix of overlapping state and federal policies may be even more important. The Federal Energy Regulatory Commission and state public utility commissions have repeatedly challenged each others' jurisdictional authority, and these challenges are likely to become more acute. ARRA includes strong incentives for building out the nation's transmission infrastructure, including expanding the Western Area Power Administration's and the Bonneville Power Administration's borrowing authority by \$3.25 billion each. The Obama Administration has also signaled an increased role for the federal government in coordinating transmission siting. Converting ARRA funds into real grid projects may thus require close interaction with potentially competing regulatory bodies as well as a solid understanding of how federal and state policies interact.