Using Energy Efficiency delivered through Energy Savings Performance Contracting as a Direct and Immediate Stimulus to Economic Recovery

Energy efficiency investments should be included in the stimulus bill.

Large-scale investments in energy efficiency can produce more jobs and more short and long-term economic benefits than virtually any other kind of stimulus investment. The Obama administration and the Congress should include energy efficiency investments such as those outlined in the attached draft legislation, in their economic stimulus initiatives.

Since 1990, energy service companies (ESCOs) have delivered $35-39[i] billion of energy efficiency projects in the US.

These energy efficiency retrofit projects have resulted in:

- More than $50 billion in total savings – guaranteed and verified
- More than 330,000 person-years of direct employment and about 1 million person-years of indirect employment
- $25 billion of infrastructure improvements in federal, state and local government facilities[ii]
- More than 420 million tons of CO_2 savings at no additional cost[iii]

These energy efficiency retrofit projects are self-financing; they repay their capital cost from energy and maintenance savings in an average of less than seven years. Project financing is provided by competitively bid bonds or by competitively placed third-party leases or loans.

Investment in energy efficiency creates a significant number of jobs across regions, wage, and skill levels.

- One study[iv] looked at the federal Energy Savings Performance Contract (ESPC) market and estimated that a $10 Million Investment in Energy Efficiency Delivered through Energy Savings Performance Contracts creates 95 direct jobs as follows:

				Total
Number of Jobs	**20**	**40**	**35**	**95 Jobs**
Investment in EE	**$2 million**	**$3 million**	**$5 million**	**$10 million investment**
Type of Personnel	**Direct ESCO employees**	**Local Subcontractors**	**Manufacturers of Equipment Used in Retrofit(e.g., lighting, motors, chillers, boilers)**	
Cost Per Employee	**$100,000 per employee for technical, engineering and management personnel**	**$75,000 per employee for installation of equipment and other services**		

The impact of job creation increases over time.

- Three recent studies demonstrate that the job creation effect of energy efficiency projects delivered through performance contracts is superior to other potential economic stimulus investments and actually increases over time, because the dollars that had been spent for energy stays local rather than being shipped out to other regions or foreign countries. A proposed natural gas efficiency program in eight Midwestern states will produce about 30,000 jobs in five years and 66,000 jobs in 15 years.[v]

- A study of the employment potential concludes that a $100 billion economic stimulus invested in energy efficiency and renewable energy will produce about 2 million new jobs, about four times the jobs that would be created by a $100 billion investment in new oil and gas production and about 15% more jobs than a $100 billion boost in household consumption through another round of tax rebates.[vi]

- A study of the employment effects of energy efficiency and renewable energy programs in California over the past 30 years concludes that, "Energy efficiency measures have enabled California households to redirect their expenditures toward other goods and services, creating about 1.5 million FTE jobs with a total payroll of $45 billion, driven by well-documented household energy savings of $56 billion from 1972-2006." The study further concludes that for every job lost in the energy supply chain, 50 new jobs were created.[vii]

There is immediate job creation potential through full implementation of Energy Savings Performance Contracts that capture all remaining energy and cost savings currently embedded in government buildings.

According to a recent estimate by the Lawrence Berkeley National Laboratory (LBNL), the remaining potential market for ESCO projects in federal, state and local government buildings is perhaps $100 billion, given current technology. New technology increases the potential market to harvest energy efficiency. A five-year program to implement projects in this total potential market would yield the following benefits[viii]:

- Approximately $143 billion in total energy savings – guaranteed and verified
- Approximately 190,000 new jobs in direct project employment plus another 570,000 new jobs in indirect employment
- $70 billion of improvements in federal, state and local government facilities
- 1.2 billion tons of CO_2 savings at no additional cost

These projects are self-financing; they repay their capital cost from energy and maintenance savings in an average of less than seven years.

With 300 billion square feet of US building stock, there are considerable energy and dollar savings embedded in commercial buildings.

Government facilities represent only about 20% of the total commercial building stock. Thus, the potential economic stimulus from the full implementation of energy efficiency in all commercial buildings is approximately 5 times the numbers given above.

Residential buildings offer another opportunity for significant new employment to implement energy efficiency improvements.

Program experience in the Northeast, Texas, California and the Northwest indicates that large-scale programs to improve the energy efficiency of single and multi-family homes, including mobile homes can produce about 1,000 direct jobs for each $100 million of program expenditure. These investments are typically repaid in less than five years from energy savings, and yield huge long-term economic benefits. Note that the employment benefits from the California study cited above result entirely from residential energy savings.

The delivery infrastructure is already in place to facilitate new investments in energy efficiency and to create new jobs immediately.

Because the ESCO industry has been delivering projects for 25 years, it has a delivery infrastructure in place in every state that can begin to deliver large volumes of projects immediately. There are billions of dollars of federal, state and local government projects in the development pipeline that could be quickly implemented with a combination of administrative mandates and relatively modest federal funding.

Third party financing is still available to fund ESCO-delivered energy efficiency that leverages the amount of federal funding needed to support the rapid expansion of energy efficiency investment nationwide and to generate the significant multiplier effects on the economy.

Energy Savings Performance Contracts, which are financed through a competitive third-party market, have suffered only mild effects from the current credit crunch, because the projects are undertaken by government agencies, the savings produced by the projects are dedicated to repaying the financing, the savings are monitored and verified using an international protocol, and the savings are guaranteed by major corporations. The federal government could dramatically accelerate the normal pace of project implementation by offering modest co-funding to government agencies that implement projects in the next twelve to eighteen months. Any federal government investment would be leveraged four or five to one by private investment.

Funding for accelerated energy efficiency investments should be included in the stimulus bill because large-scale investments in energy efficiency provide a greater level of economic benefits in both the short and long term than virtually any other kind of stimulus investment and substantial environmental benefits at no additional cost.

Sources

[i] "A Survey of the U.S. ESCO Industry: Market Growth and Development from 2000 to 2006," Lawrence Berkeley National Laboratory (LBNL-62679), available at http://eetd.lbl.gov/ea/EMS/ee-pubs.html

[ii] *ibid*, page 13, based on percentage of ESPC projects in MUSH, federal and public housing facilities

[iii] NAESCO calculation derived by converting total project savings into kWh at $.10/kWh and converting the total kWh savings into CO_2 savings using the US EPA Greenhouse Gas Equivalencies Calculator found at: http://www.epa.gov/cleanenergy/energy-resources/calculator.html

[iv] Calculations by Jennifer Schaffer-Soderman, Cascade Associates

[v] "Examining the Potential for Energy Efficiency to Help Address the Natural Gas Crisis in the Midwest," Kushler, York and White, American Council for an Efficient Economy, January 2005, available at: http://www.aceee.org/store/proddetail.cfm?CFID=987754&CFTOKEN=91189203&ItemID=386&CategoryID=7,

[vi] "Green Recovery: A Program to Create Good Jobs and Start Building a Low-Carbon Economy," Center for American Progress and the Political and Economics Research Institute at the University of Massachusetts, September 2008. Full report and individual state fact sheets available at: http://www.americanprogress.org/issues/2008/09/green_recovery.html

[vii] "Energy Efficiency, Innovation, and Job Creation in California," David Roland-Holst, October 2008, CENTER FOR ENERGY, RESOURCES, AND ECONOMIC SUSTAINABILITY (CERES), University of California at Berkeley, available at: http://are.berkeley.edu/~dwrh/CERES_Web/index.html

[viii] NAESCO extrapolations of historical data derived from the sources cited above.

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