

## **Better Buildings Initiative**

In his State of the Union speech, President Obama articulated his vision for winning the future by investing in innovative clean energy technologies. However, the current federal budget debate threatens to strip away funding of the Department of Energy (DOE), necessary to meet this administrations objectives.

Formalized as the Better Building Initiative, the following five federal programs seek to achieve energy efficiency, create new jobs and stimulate the economy:

**I. BUILDING EFFICIENCY TAX INCENTIVES**: A tax credit for building owners and real estate investment trusts for energy efficiency retrofits. Changes could produce an estimated tenfold increase in commercial energy efficiency retrofits and an increase in job-creating investments.

**II. MORE FINANCING OPPORTUNITIES FOR COMMERCIAL RETROFITS**: Removing barriers to building retrofits by:

- Small Business Administration Removing barriers and encouraging lenders to take advantage of recently increased loan limits.
- A new DOE pilot program to guarantee loans for energy efficiency upgrades at hospitals, schools, and other commercial buildings.

**III. "RACE TO GREEN" FOR STATE & MUNICIPAL GOVERNMENTS:** New competitive grants to states and local governments to streamline building standards, encouraging upgrades and attract private sector investment.

**IV. THE BETTER BUILDINGS CHALLENGE**: Save energy, save money and improve productivity. Private businesses & universities would be challenged to commit to make their facilities more efficient. Public recognition, technical assistance, and best-practices sharing through peer network are the proposed rewards.

# V. TRAINING THE NEXT GENERATION OF COMMERCIAL BUILDING TECHNOLOGY WORKERS:

Reforms that improve transparency of energy efficiency performance, a new Building Construction Technology Extension Partnership, and providing more training on energy auditing & building operations.

# Zero Net Energy Goal

The President is calling on Congress to fund the Better Buildings Initiative in part by redirecting subsidies paid to the oil and gas industry. At a February 28th, 2011 House Democratic Steering and Policy Committee the issue of subsidies to the oil industry was addressed. A report by the Government Accountability Office (GAO) was cited by Elijah Cummings (D-Md.). That report examined the lack of payments by oil and gas companies extracting from federal lands concluding that "including direct subsidies, the country essentially gives as much as \$50 billion to oil companies."



While it is currently uncertain how changes in oil subsidies will impact the funding of the Buildings Initiative, many building owners are moving forward with innovative ways of reducing their operating costs. And they are finding several existing programs that can already assist them from energy efficient retrofits to renewable energy development.

Several programs have already begun to blaze the trail of energy efficiency, establishing Net Zero Energy (NZE) as the ultimate goal for commercial buildings. Recognized as consuming 40 percent of our nations energy, commercial buildings have huge appetites for gas, electricity and water. Buildings are energy intensive for heating, cooling and lighting. Additionally, the plugloads of the building occupants brings additional energy demands that warrant close attention.

While NZE may be an elusive goal, it is a compelling one. A building operating in net zero mode would create as much energy as it consumes, and by definition, is energy self-sufficient. From an energy perspective, the building becomes an island through the use of onsite sources of renewable energy.

# Putting Your Buildings On An Energy & Water Diet

The opportunities for the installation of renewable energy systems have received much attention and generated understandable headlines in recent years. New developments have made solar, wind and geothermal energy cheaper and installation cost effective for municipalities and commercial buildings. Federal and state tax incentives, credits and rebates have given rise to new markets for manufacturers, suppliers and installers and expanded their consideration by the average homeowner.

Less attention has been given to energy efficient operational changes and equipment retrofits that can be deployed to lower a buildings energy demand in the near-term. Here the goal is to first put a building on an energy diet, with a focus on reducing peak demands for energy and water. Shedding a buildings peak loads cuts away at the most expensive of its costs for resources and reduces the size and capital cost of its infrastructure support systems.

Conversion to more efficient operations can reliably produce savings with very fast return on investment. Behavioral changes by building occupants combined with targeted technology retrofits can permanently reduce a buildings energy and water footprints.

To identify retrofits that will work in your buildings requires an assessment of its current energy and water use footprints. Analysis of utility billing records identifies the long-term, seasonal and peak demands. Installation of sub-meters informs building operators of the current patterns of use. Comparison of average and peak consumption against representative benchmarks evolves savings potentials and helps target capital investments for new, more energy efficient retrofits.

Once a building is retrofitted for lower consumption, the selection and sizing of renewable energy facilities can be "right-sized". This process of conservation coupled with renewable energy produces the greatest savings.



#### **Our Results**

Brezack & Associates' approach allows our clients to identify site-specific improvements that can be justified even without subsidies. Our approach is to integrate analysis of energy/water efficiency and renewable energy into long term facilities planning.

Some recent examples of the type of results that we have achieved for our clients:

- Planned electricity and gas savings with a present value of \$750,000 for a northern California Country Club. With "right-sized" solar energy, this project will also reduce greenhouse gas emissions by an estimated 60 percent.
- Produce an estimated savings of over 200 million gallons of potable water per year for a Southern California transportation agency. Additionally, our recommendations will substantially reduce greenhouse gas emission, and lower operating costs for wastewater and storm water discharges.
- Over 1 million gallons of water per year conserved for each of two new Southern California restaurants.

## **Energy Efficiency Funding Resources**

Other sources of information and funding can be found at:

- The American Recovery and Reinvestment Act of 2009 awarded the Office of Energy Efficiency (EERE) \$16.8 billion for its programs and initiatives
- The American Recovery and Reinvestment Act (ARRA) provided \$20 billion of investments in the Weatherization Assistance Program, Better Buildings, and the Energy Efficiency and Conservation Block Grant.
- The HOMESTAR program, would provide \$6 billion of incentives for taxpayers to construct energy-saving home-improvement projects.

## **Recent Zero Net Energy Reports**

- California Energy Strategic Plan, Net Zero Energy Action Plan: Commercial Building Sector 2010-2012. <u>http://www.cpuc.ca.gov/NR/rdonlyres/6C2310FE-AFE0-48E4-AF03-530A99D28FCE/0/ ZNEActionPlanFINAL83110.pdf</u>
- Next Generation Technologies Barriers and Industry Recommendations for Commercial Buildings: Commercial Building Consortium. <u>http://zeroenergycbc.org/pdf/CBC%20Technologies%20Report%202011.pdf</u>
- Analysis of Cost & Non-Cost Barriers and Policy Solutions for Commercial Buildings: Commercial Building Consortium. <u>http://zeroenergycbc.org/pdf/CBC%20Market-Policy%20Report%202011.pdf</u>



## **Associations & Professional Organizations**

Building Owners and Managers Association (BOMA),

American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE),

American Institute of Architects (AIA),

The U.S. Green Building Council (USGBC),

The Illuminating Engineering Society (IES),

The Association of State Energy Research and Technology Transfer Institutions (ASERTTI),

The National Electrical Manufacturers Association (NEMA)