

Market Opportunity Analysis

Overview

With only about 4.5% of the world population, the U.S. consumes over 20% of energy worldwide while only producing about 15% of total global supply. In addition, the Energy Information Administration ("EIA") reported demand for electricity in the U.S. grew from 3,492 billion kilowatt hours in 1997 to 4,157 billion kilowatt hours in 2007, a 19% increase in 10 years.

While energy prices in the U.S. today range from 6 cents/KWh in Washington State to 21 cents on the islands of Hawaii, overall prices are expected to significantly rise over the next few years. According to the most recent U.S. Dept of Energy (DOE) Annual Energy Outlook Projections to 2030, price increases will average 3.0 percent per year from 2007 to 2030. "Despite the recent economic downturn, growing demand for energy—particularly in China, India, and other developing countries — and efforts by many countries to limit access to oil resources in their territories that are relatively easy to develop are expected to lead to rising real oil prices over the long term." Within the United States, a January 2009 DOE report predicted double-digit electricity price increases across the majority of the United States.

Concerns by utilities about the cost of creating new power plants, along with an antiquated electrical distribution grid, rising demand for electricity and increasing energy prices, have created a market opportunity for energy efficiency, particularly in existing buildings.

Internal Forecast

Energy Focus, Inc. (EFOI), a leader in providing energy efficient lighting solutions, is in the process of acquiring Stones River Companies (SRC), a leading lighting energy services company. Several factors, including rising energy prices; increased local, state and federal legislation and regulations; increased understanding of the role energy efficiency plays in the expanding demand for "green" buildings; and most importantly, the advent of a robust pipeline of incentives and funding for energy efficiency through the federal stimulus package – indicate the existence of a growing and sustainable market for EFOI's products and services for years to come.

Market Size

In a recent report, McKinsey & Company indicated that the U.S. economy has the potential to reduce annual non-transportation energy consumption by roughly 23 percent by 2020, eliminating more than \$1.2 trillion in waste, well beyond the \$520 billion upfront investment that would be required. The reduction in energy use would also result in the abatement of 1.1 giga-tons of greenhouse gas emissions annually – the equivalent of taking the entire U.S. fleet of passenger vehicles and light trucks off the roads.ⁱ Finally, the Political Economy Research Institute has reported that seven U.S. direct jobs are created per million dollar investment in building retrofits and a smart grid.

A May 2008 study by the American Council for an Energy-Efficient Economy ("ACEEE"), a nonprofit organization dedicated to advancing energy efficiency as a means of promoting both economic prosperity and environmental protection, indicated that in an environment of accelerated market transformation and rapid growth in efficiency investments, total investments in more energy efficient technologies could increase the annual energy efficiency market by nearly \$400 billion by 2030, resulting in an annual efficiency market of more than \$700 billion in 2030.ⁱⁱ

Energy Efficiency Impacts

Better technology and global communications, a growing realization of the potential savings and an understanding of the environmental impact of energy efficiency, are creating immediate economic and social reasons for building owners to invest in greening their facilities. The ACEEE, suggests that:

“Shifting away from the production and consumption of conventional energy resources in favor of more productive investments in energy-efficient technologies, can lead to a more robust economy and to a greater level of overall employment opportunities. Energy efficiency investments can provide up to one-half of the needed greenhouse gas emissions reductions most scientists say are needed between now and the year 2050. Investments in more energy-productive technologies can also lead to a substantial net energy bill savings for the consumer and for the nation’s businesses. In the diagnostic assessment summarized in this report, savings are on the order of two trillion dollars by 2050 (measured in constant 2007 dollars). Non-energy expenditures within the U.S. tend to be more labor-intensive and provide a greater rate of contribution to the nation’s Gross Domestic Product compared to expenditures on energy. Instead of taking jobs away from the economy, the diagnostic assessment here suggests a small but net positive gain in the economy.”ⁱⁱⁱ

Legislation and Increased Regulation

Whether it is for financial, environmental or social reasons, local, state, federal and global entities are increasingly relying on legislation and regulation to encourage energy efficiency. Political changes in the White House, Congress and in state houses around the country are ushering in a new era and either demanding or providing incentives for energy efficiency. In particular:

- **Public Sector Energy Efficiency Enabling Legislation** - More than ever, owners and operators of buildings are looking for ways to lower the energy and operating costs of their facilities, while improving their indoor environment. To that end, a growing number of organizations are entering into Performance Contracts with Energy Services Companies (ESCO’s) to engineer, procure, install, service and guarantee the performance of energy-efficient building improvements installed into their facilities. A unique aspect of a Performance Contract is that it typically utilizes third party financing for the building improvements. Utilizing this method, building owners and operators make no up-front investments; instead finance projects through annual energy savings which are guaranteed by the ESCO. Performance Contracts have become very popular in the public sector, as the federal government and 39 states have enacted specific legislation to encourage the use of Energy Savings Performance Contracts as a means for schools, universities and governmental facilities to lower their energy costs while modernizing their buildings’ infrastructure.
- **Federal Legislation** – Both the House of Representatives’ American Clean Energy and Security Act (ACES) and the Senate’s American Clean Energy Leadership Act (ACELA) are anticipated to reduce energy consumption, avoid carbon emissions, and save about \$30 billion dollars through energy efficiency. Each bill has its own strategies, such as:
 - Lighting Efficiency Standards, requiring production of energy-efficient lamps and luminaires;
 - The Federal Energy Efficiency Resource Standard (EERS), which requires all electricity and natural gas utilities to help their customers reduce energy use by a specified and increasing amount each year, based on a percentage of total energy sales;

- State Energy and Environment Development Funds, which will help states manage and account for money provided to clean energy, energy efficiency and climate change programs;
 - Greater energy efficiency in building codes, setting targets for the national model building energy codes and standards to achieve overall energy savings of at least 30 percent, starting with the next edition of the model codes and 50 percent with the editions of each code after January 1, 2016;
 - Building Retrofit Program, directing EPA and DOE to establish standards for a national energy and environmental building retrofit policy for the commercial and residential sectors and promoting cost-effective energy efficiency and other environmental improvements in existing buildings;
 - Building Energy Performance Labeling Program, with EPA and DOE working with state energy offices on implementation.^{iv}
- **Federal Mandates** – The Energy Policy Act of 2005 ("EPAct05") includes a significant tax incentive to improve the energy efficiency of commercial facilities. Further, EPAct05 and Executive Order 13423 (January 2007) set new federal energy goals, including cutting energy use in federal facilities so that "the energy consumption per gross square foot of the Federal buildings of the agency in fiscal years 2006 through 2015 is reduced, as compared with the energy consumption per gross square foot of the Federal buildings of the agency in fiscal year 2003". The required energy consumption is reduced by 2% annually, starting with a mandated reduction of 2% in 2006 and leading to a 20% reduction by 2015.^v The Act further mandates that the federal government is to increase the use of renewable energy to not less than 3% of total electricity use in 2007-2009, not less than 5% in 2010-2012, and not less than 7.5% in 2013 and thereafter. In early October 2009, President Obama issued Executive Order 13514, which requires federal agencies to meet a number of energy, water and waste reduction goals. It also requires maintaining a greenhouse gas inventory, which will involve precise measurement and reporting.
 - **Local Government** - More than 1,000 mayors have signed the Washington-based U.S. Conference of Mayors' (USCM) Climate Protection Agreement, which calls for a reduction in carbon emissions by 7 percent below 1990 levels, as called for by the Kyoto Protocol.^{vi}
 - **State Government** - According to the Federal Energy Regulatory Commission, 21 states now employ EERS, a flexible mechanism to ensure that utilities adopt energy efficiency as a clean, cost-effective energy resource. Governors are very supportive, and likely will continue to be engaged through additional American Recovery and Reinvestment Act of 2009 ("ARRA") A funding. In an analysis of 2009 State of the Union addresses, more than 80 percent mentioned their energy efficiency and renewable energy efforts.^{vii}
 - **Global** – The December 2009 United Nations Climate Conference in Copenhagen will bring world leaders together to discuss ways to prevent global warming and climate change. Though unclear if a new protocol will be developed, the heightened attention to these issues likely will bring a renewed interest in energy efficiency, as many countries already have enacted their own energy-saving policies.

American Recovery and Reinvestment Act of 2009

The ARRA or Stimulus Plan was signed into law by President Obama in February 2009. According to the Department of Energy, “This unprecedented effort to jumpstart our economy, create or save millions of jobs, and put a down payment on addressing long-neglected challenges so our country can thrive in the 21st century.”^{viii}

The \$16.8 billion designated for the U.S. Office of Energy Efficiency and Renewable Energy is divided across several energy efficiency programs that will increase demand for energy-efficient products and services, including:

- \$3.1 billion for State Energy Programs;
- \$3.2 billion for Energy Efficiency and Conservation Block Grants, including \$454 million recently announced for retrofit ramp-ups in energy efficiency;
- \$2.5 billion for applied research, development, demonstration, and deployment, including \$346 million for energy efficient building technologies

Today, in late 2009, the Stimulus Plan is barely underway, with only a portion of the allocated money being spent. Future spending will only improve the market for energy-efficient goods and services.

Demand for Green Buildings

According to the United States Green Building Council (USGBC), buildings are one of the heaviest consumers of natural resources and account for a significant portion of the greenhouse gas emissions that affect climate change. They represent nearly 39% of U.S. primary energy use,^{ix} 72% of U.S. electricity consumption,^x and 38% of all CO² emissions.^{xi} That means there is a tremendous opportunity to save energy through lighting and tremendous opportunities for growth. For example:

- The overall green building market (both non-residential and residential) is likely to more than double from today’s \$36-49 billion to \$96-140 billion by 2013^{xii};
- The value of green building construction is projected to increase to \$60 billion by 2010.^{xiii} The construction market accounts for 13.4% of the \$13.2 trillion U.S. GDP^{xiv};
- An upfront investment of 2% in green building design, on average, results in life cycle savings of 20% of the total construction costs – more than ten times the initial investment^{xv}; and
- Building sale prices for energy-efficient buildings are as much as 10% higher per square foot than conventional buildings.^{xvi}

The case for energy-efficient retrofits is especially evident in existing buildings. One McGraw-Hill report indicates ^{xvii} “Public-private partnerships, such as the Clinton Climate Initiative are advancing green building techniques in the public sector. Additionally, facility owners who want to green their buildings often implement performance contracting projects because the savings produced from energy efficiency measures helps to finance renewable energy measures.”

A Union of Lighting Intelligence

Energy Focus, Inc. is a leading supplier of energy-efficient lighting solutions. Our solutions provide energy savings, aesthetics, safety and maintenance cost benefits over conventional lighting. Our long-standing relationship with the U.S. Government includes numerous research and development projects for the DOE and DARPA to create energy efficient LED lighting systems for the U.S. Navy fleet and the

next generation Very High Efficiency Solar Cell. Company headquarters are located in Solon, OH, with additional offices in Pleasanton, CA, the United Kingdom, and Germany.

Stones River Companies (SRC) is a leading lighting energy services company located in Nashville, TN. SRC's business is based primarily on retrofitting existing public sector buildings with energy-efficient lighting, which is a significant benefactor of stimulus funding. SRC's public sector pipeline has already grown dramatically with the stimulus as well as with the government's renewed emphasis on saving both energy and improving the environment.

The combined power of EFOI and SRC will result in a cohesive business that has the geographical, technical and financial strength to address the burgeoning energy efficiency marketplace. By incorporating EFOI's advanced lighting technologies into SRC's comprehensive sales and delivery vehicle, EFOI can expand into and capitalize on the exploding demand for energy-efficient lighting technologies and services within the \$100+ billion existing public sector building market.

ⁱ Unlocking Energy Efficiency in the U.S. Economy -

http://www.mckinsey.com/client-service/electric-power/natural-gas/US_energy_efficiency/

ⁱⁱ The Size of the U.S. Energy Efficiency Market: Generating a More Complete Picture -

<http://www.aceee.org/pubs/e083.htm>

ⁱⁱⁱ The Positive Economics of Climate Change Policies: What the Historical Evidence Can Tell Us -

<http://www.aceee.org/store/proddetail.cfm?CFID=4195860&CFTOKEN=30402541&ItemID=465&CategoryID=7>

^{iv} Alliance to Save Energy - http://ase.org/uploaded_files/5748/aces_acela_side-by-side.pdf

^v Energy Policy Act of 2005, Public Law 109-58-Aug. 8, 2005 - http://www.epa.gov/oust/fedlaws/publ_109-058.pdf

^{vi} The United States Conference of Mayors - <http://www.usmayors.org/>

^{vii} National Governors Association - <http://www.nga.org/Files/pdf/GOVSPEAK0904.PDF>

^{viii} Department of Energy - <http://www1.eere.energy.gov/recovery/>

^{ix} Environmental Information Administration (2009/2008). EIA Annual Energy Outlook.

<http://www.eia.doe.gov/oiaf/aeo/electricity.html>

^x Environmental Information Administration (2009/2008). EIA Annual Energy Outlook.

<http://www.eia.doe.gov/oiaf/aeo/electricity.html>

^{xi} Energy Information Administration (2009/2008). Assumptions to the Annual Energy Outlook.

<http://www.eia.doe.gov/oiaf/aeo/assumption/electricity.html>

^{xii} McGraw Hill Construction (2009). Green Outlook 2009: Trends Driving Change.

http://construction.ecnext.com/coms2/summary_0249-294642_ITM_analytics

^{xiii} McGraw-Hill Construction (2008). Key Trends in the European and U.S. Construction Marketplace: SmartMarket

Report. http://construction.ecnext.com/coms2/summary_0249-266922_ITM_analytics

^{xiv} Department of Commerce (2008). Annual Value of Construction Put in Place.

<http://www.census.gov/const/C30/total.pdf>

^{xv} Kats, G. (2003). The Costs and Financial Benefits of Green Buildings: A Report to California's Sustainable Building Task Force. <http://www.cap-e.com/ewebeditpro/items/O59F3259.pdf>

^{xvi} Miller, N., Spivey, J. & Florance, A. (2007). Does Green Pay Off? <http://www.costar.com/josre/pdfs/CoStar-JOSRE-Green-Study.pdf>

^{xvii} McGraw Hill Construction (2009). Green Building Retrofit & Renovation: Rapidly Expanding Market Opportunities through Existing Buildings -