EarthRenew®
Power to Renew the Earth

April 2009

Energy Independence Through Energy Efficiency

Energy efficiency is our number one energy resource.
It's clean, reliable, affordable and domestic.

A Nation of Imports

Today, we import nearly 70% of our oil and it's still growing. America is dependent on foreign oil sources from nations that are often unstable and unfriendly. It is a matter of economic sustainability and national security that we address these issues. Last year, we spent $475 billion on imported oil, which otherwise could have been used to invest in America's future. In essence, this amounts to an ongoing tax on America by foreign nations. The solution available today, is to implement energy efficient technologies. By making better use of our domestic resources, we can supply our own energy needs and free ourselves from foreign dependence.

Energy Efficiency

Energy efficiency must be the cornerstone in any energy policy that considers strategic incentives for energy efficient technologies, energy conservation and the use of domestic energy resources. Recently, considerable capital has been focused on renewable energy technologies in the areas of wind and solar power. Currently, these technologies remain immature, are inherently unreliable and expensive. Wind and solar technologies generate inconsistent power which require major capital investments and retrofits of the existing electrical grid. This is an inefficient use of taxpayer funds when there is an untapped resource of energy right in front of us. That resource is energy efficiency.

The Fifth Fuel

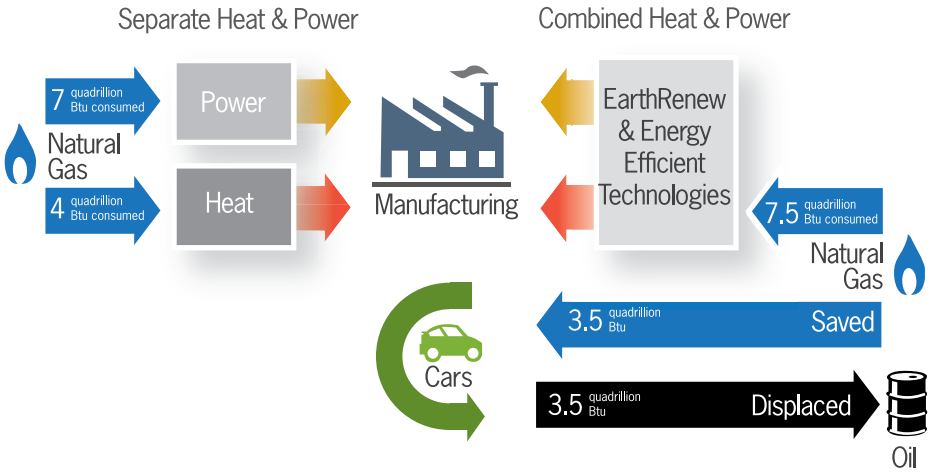
America needs to take advantage of the "fifth fuel"; a vast pool of readily available and useful energy obtainable through energy efficiency. Each year, nearly 60% of all energy in America is lost, leaving tremendous room for energy efficiency improvements. If we focus on efficiently and effectively utilizing our own domestic energy sources, we can consume less energy, reduce stress on our existing electrical infrastructure, and America would take a leap towards energy independence.

America is blessed with a plentiful supply of clean burning natural gas. It's clean, cheap and domestic; but wasted. As a nation, we can make huge strides in energy efficiency to reduce the waste of natural gas with technologies available today. The fuel that we save is the ideal candidate for use as an alternative to oil for use in cars, trucks and other vehicles.

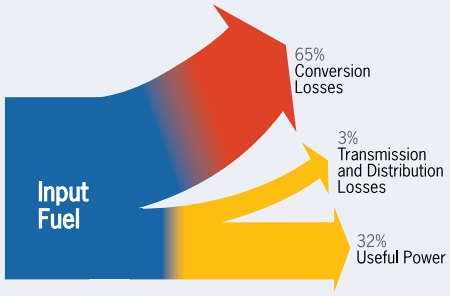
Bringing Heat and Power Together

Each year, America consumes nearly 8 quadrillion Btu of natural gas for the purpose of electricity generation. Through this process, 68% of the consumed energy is lost, primarily through dissipated heat. At the same time, approximately 4 quadrillion Btu of natural gas are used by our manufacturing industries, specifically to produce heat for making everyday products. America can be far more energy efficient

Potential Savings from Energy Efficient Technologies



Example of the potential energy savings from utilizing 80% of the energy from natural gas through energy efficient technologies applied to manufacturing and power generation compared to separate heat and power systems for the same manufacturing capacity.



Current Power Generation is Inefficient

Approximately 68% of the energy consumed for electrical generation is lost due to conversion, transmission and distribution[1]. Energy efficient technologies can reduce these energy losses down to 15-20%.

	Capacity Factor	Effective Cost Per MW Installed Capacity[2]
Solar	25%	$7.0 M
Wind	30%	$3.3 M
Energy Efficiency	90%	$1.1 M

More Reliable & Less Expensive

Energy efficiency technologies are the most cost effective solutions to achieve energy independence. They are less expensive and more rapidly deployable than wind or solar technology, and reduce stress on our transmission and distribution system.

[1] Based on Energy Information Administration, AER 2007
[2] Solar- Based on $0.20/kwh and 25% capacity factor; Wind - Based on $1M per MW capacity and 30% capacity factor; Energy Efficiency - Based on $1M per MW capacity and 90% capacity factor

by bringing these two industries together. Integrating decentralized electrical generation together with heat processing can reduce our total consumption of natural gas by approximately 3 quadrillion Btu. This saves enough natural gas to be used as an alternative fuel for vehicles and slash our foreign oil imports by 10%.

Decentralized Energy

A decentralized energy grid that brings power generation and manufacturing together has the added advantage of reducing stress on our transmission and distribution systems. Electrical load and generation will be much more balanced, thus increasing system reliability and reducing systemic risks. This makes better use of our existing electrical infrastructure and will reduce future costs.

Energy efficiency ultimately lowers energy costs for all Americans and our industries will be more competitive in the global landscape. Furthermore, less energy consumption through energy efficiency creates long term environmental and public health benefits from cleaner air and water.

An Effective Energy Policy

To achieve energy independence, we need balanced policies and incentives to make the best long term use of taxpayer money and domestic energy resources. This policy must encourage technological innovation, energy conservation and the implementation of energy efficient technologies.

Vast amounts of money are spent each year on renewable energy resources. However, implementing energy efficient technologies are the least expensive and most rapidly deployable solutions available today.

Achieving Energy Independence Through Energy Efficiency

It's uncertain exactly how America's future energy economy will develop over the next century; whether based on solar, wind, hydrogen or other technologies. What is certain, is that energy efficiency is the cornerstone to any solution. This is something America can and must do today while alternative technologies mature.

The Truth

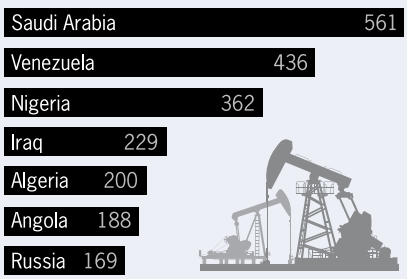
The truth is that America already produces enough energy to be independent.

We just are not utilizing our resources efficiently or effectively. Energy efficient technologies should be on the forefront to be deployed on a nationwide scale for its environmental stewardship, national security and as an investment in America. Energy independence is possible; the technologies are available, and energy efficiency is the first step towards a viable and sustainable future.

Jeff Fong, Corporate Strategist, EarthRenew
j.fong@earthrenew.com

www.earthrenew.com

Foreign Oil Imports[3] (million barrels per annum)



An Alternative to Oil

By saving 3 quadrillion Btu of natural gas to be used as an alternative to oil, we could cut oil imports by 10%. That's equivalent to nearly all the oil imported from Saudi Arabia each year.

[3] Energy Information Administration, 2008, oil imports excluding Canada and Mexico

Potential Energy Savings

The Department of Energy estimated that adopting a high-deployment policy to achieve 20% generation from combined heat and power technologies by 2030, could save an estimated 5.3 quadrillion Btu of energy and reduce CO_2 emissions by 848 million metric tonnes; equivalent to 154 million cars or over half the US vehicle fleet[4]. Approximately 50% of these savings can be achieved today by implementing commercially available technologies that bring electricity generation and manufacturing together. This can generate $111 billion in capital investments and create approximately 450,000 highly skilled technical jobs[5].

[4] Combined Heat and Power: Effective Energy Solutions for a Sustainable Future, Oak Ridge National Laboratory and U.S. Department of Energy, 2008 Based on displacement of natural gas used in electrical generation and 85% energy efficiency technologies
[5] Based on four jobs created for every $1 million capital investment

EarthRenew is a leading provider of fertilizer products, waste solutions, water recovery & treatment technologies, and energy efficient heat processing technologies.

If you would like to know more about us, please visit our website at www.earthrenew.com or give us a call at 1-877-457-7667.

EarthRenew®
Power to Renew the Earth