

# Energy Efficiency – The New Fuel

## Report Edition 1, 2012

### Market Intelligence

With electric generation capacity expected to be constrained in many countries worldwide in the foreseeable future, efforts have been focused on increasing electricity supply and reducing demand. One of the lowest hanging fruits in reducing electricity demand, i.e. the lowest cost, highest benefit ratio, is energy efficiency. Often energy efficient measures and devices will be more cost-effective than the construction of new generation capacity in order to meet demand for electricity. The same principle applies to fuels for energy generation. Where projected rising prices, especially for oil, make energy efficient cars with a low fuel consumption compared to conventional vehicles considerably more attractive for consumers.

### Carbon Dioxide Emissions

Energy efficiency is also expected to be the main mechanism for reducing carbon dioxide emissions worldwide, especially emissions per capita. On a larger scale, energy efficiency will help countries achieve their emission reduction targets under agreements such as the Kyoto Protocol. Companies can also use energy efficiency to meet their targets under schemes such as the UK's Carbon Reduction Commitment (CRC).

### Definition for Energy Efficiency

Unfortunately, no one definitive definition for energy efficiency exists. A reduction in consumption by behavioural change is considered as categorised as energy efficient by some and not by others. Although, energy efficiency experts refer to improving energy efficiency as the result of an action that 'aims at reducing the amount of energy used for a given service e.g. lighting, heating, by the purchase of efficient equipment, retrofitting investment to reduce the consumption of existing buildings and facilities, or avoiding unnecessary consumption of energy'.

### Waste Heat Recovery

One area that has attracted a lot of attention is the use of waste heat recovery in the power generation sector, and also the industrial sector. Companies involved in waste heat recovery have attracted significant investor capital. Other areas covered in this report include micro-hybrids in the transportation sector; and automated controls and energy efficient devices such as lighting in the residential and commercial sectors. Our report covers the following areas of energy efficiency and companies involved in these areas, along with other areas of energy efficiency relevant to the sectors: waste heat recovery, micro-hybrids, Automated Monitoring and Targeting (AM&T), boiler controls, Building Management Systems (BMS), Data Centres, Demand Response Management (Demand Management), Heating & Cooling, HVAC (Heating, Ventilation and Air Conditioning) Controls, Insulation, Lighting, Lighting Daylight Phasing Control & Occupancy Control, Variable Speed Devices (VSD), Voltage Power Optimisation and Windows & Glass.

### The Players in the Global Market

Along with small start-ups, the energy efficiency sector is also covered by major players such as Siemens, Panasonic and Honeywell. Many of the big players develop technology in-house; others acquire the technology from start-up companies. Our report covers both key start-ups and key players in the sector.

### **How can NRG Expert Help?**

NRG Expert's Energy Efficiency-The New Fuel Report, Edition 1, 2012 is a study of:

- The policies and incentives for energy efficiency for the power generation, the industrial sector, transportation and the residential or commercial sectors for countries worldwide.
- The report enables the reader to identify the major consumers of energy.
- They include in descending order, energy for power generation, the industrial sector, transportation and the residential or commercial sector.
- Therefore, efforts at reducing energy consumption have focused heavily on these sectors, and high energy consuming processes, products and so on.
- Uptake of the implementation of some energy efficiency devices has been rather slow where significant barriers exist, such as high upfront costs etc.
- In many countries, the uptake of energy efficiency is incentivised. For example, in Canada homeowners are offered grants for energy efficiency improvements under the ecoENERGY Retrofit scheme.

**Report Price - £950**

**Code – NRGEE1**

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