LONDON, Jan. 13, 2014 /PRNewswire/ -- Reportbuyer.com just published a new market research report:

Technologies for Sustainability (Technical Insights)

Technology Enabled Sustainable Future

This report uncovers the sustainable future that could be realized by leveraging technologies. Technology benefits and their alignment to the sustainable objective helps realize various dimensions of sustainable future. By identifying technologies, their relevance to the strategic objective, citing case studies this report gives a picture of the growth path towards a sustainable environment.

Research Scope

Innovations geared towards bringing in changes without compromising on the environment, has been the focus recently. Technology developments have aligned towards this broader goal in various capacities by reducing the carbon foot print , maximizing efficiency, reducing cost, preventing waste, digitization. This has manifested initiatives towards building sustainable cities, sustainable power grids, sustainable manufacturing and sustainable agriculture.

This report delves into the technologies that enable sustainability and the sustainability concepts that are evolving. It also brings in dimensions that have caught academia / corporates interest by way of initiatives in the form of research / funding / technology/ product development.

Enabling technologies that facilitate sustainability are covered from the following perspectives• Automation and Electronics• Information and Communication• Healthcare• Chemical, Materials & Foods• Energy

Key Findings

Sustainability can be achieved by focusing on the following concepts:• Sustainable Cities• Sustainable Power Grid• Sustainable Manufacturing• Sustainability in Agriculture

The majority of sustainable technologies are aimed at realizing maximum efficiency, reducing wastage, and ensuring healthy living.Government Support, favorable policies with emphasis on sustainable practices are key to wide scale adoption of technologies for sustainability.Renewable energy may be considered as a major drivetrain in energy industry for future due to ever-increasing fossil fuel prices and depleting fossil fuel reserves.Precise Monitoring using ICT and A&E technologies allows minimization of wastage and efficient use of resources.Innovation to Zero emerges as a key focus area. Efforts should be made to realize zero wastage of resource, Zero breaches in security, Zero network failure, Zero emissions, Zero defect supply chains, Zero defects in manufacturing, Zero usage of conventional paper records, Zero contribution to pollution and Zero Net Carbon Emissions.Regulations and standards play an important role in achieving sustainability by promoting favorable practices or disallowing the use of toxic substances.

Automation and Electronics Technologies

Automation and Electronics technologies enabling sustainability include sensors, microelectronics and advanced manufacturing.Sensors enable informed decision making for managing resources while facilitating reduction in carbon footprint. Microelectronics provides a platform for development of miniaturized devices that employ minimal resources, thus contributing towards sustainability. Sustainable manufacturing leads to reduction in production cost and improved efficiency leading to optimum usage of resources.

Energy Storage Technologies Energy storage for power grids include metal air batteries, Lead acid batteries, flow batteries, nickel cadmium batteries, lithium-ion batteries, pumped hydro and compressed air energy storage

Dynamic Line Rating It involves factoring in real time conditions of electric power transmission lines and their environment to determine the current carrying capacity

Condition Monitoring of Power Assets It includes fault detection and monitoring of parameters that indicate deterioration of electric power grid assets

Smart Meters A smart meter is an electrical meter that measures electricity consumption and transmits the data to the utility at regular intervals or on a continuous basis

Energy Harvesting Energy harvesting refers to harvesting ambient energy for generating electrical power to energize low-power electronic devices.

Wireless Sensor Networks Multiple sensors that communicate data wirelessly to form a self-healing network

Air Quality Sensors It includes gas and Volatile Organic Compound (VOC) sensors that enable monitoring of parameters that affect human health and living conditions

MEMS MEMS or micro-electro-mechanical devices are miniaturized systems or devices that are built using micro-scale components and usually measuring between X microns to X mm

Image Sensors Image sensors convert light into electrical signals to generate images. It could be CMOS or CCD.

GPS Sensors Sensor systems that communicate with satellites to receive location information on Earth

Collaborative Robotics A cobot or "collaborative robot" is a robot designed to assist humans

for executing a specific task

Additive Manufacturing Additive manufacturing uses 3D model data and computer-aided additive production technologies to develop a product. A digital model is used to create a 3D solid object using raw materials such as powders, liquids or molten solids

Nanotechnology Nanotechnology in general pertains to the understanding and control of matter at dimensions approximately between 1 and 100 nanometers

Biosensors Biosensors are sensors that combine biological components as well as physiochemical detectors

Low Power Displays Display technologies that efficiently use less amount of power. This include LCDs, electrowetting-based displays **Table of Contents**

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