



DEFINING

CHINA'S GREENTECH MARKETS

This report refines the term 'greentech,' provides a map of China's greentech markets, and defines a set of greentech market sectors and segments

AS GREENTECH MARKETS ARE BOTH EMBRYONIC AND RAPIDLY CHANGING, there are few standardized terms in use today. For example, the term greentech is commonly described with alternatives such as cleantech, alternative energy and sustainable practices.

In order to ensure a common language throughout this report, the Initiative reviewed existing definitions of greentech-related concepts, gathered the views of industry experts and solicited feedback from its partners and advisors. The resulting definitions presented in this chapter are those used by the China Greentech Initiative. Additional definitions can be found in the Glossary.

DEFINITION OF GREENTECH

Greentech refers to technologies, products and services that deliver benefits to users of equal or greater value than those of conventional alternatives, while limiting the impact on the natural environment and maximizing the efficient and sustainable use of energy, water and other resources

China Greentech Market Map

A CRITICAL ELEMENT OF DEFINING CHINA'S GREENTECH MARKETS for the purposes of the Initiative was the development of The China Greentech Market Map, presented in Figure 1. The map is comprised of nine broadly-defined market sectors and 40 focused segments across three broad categories – energy supply, resource use and other markets. This map provides a common language to describe greentech markets in China, and a structure that has guided the research process and the organization of this report.

Fig. 1: THE CHINA GREENTECH MARKET MAP

		ENERGY SUPPLY			RESOURCE USE			OTHER MARKETS		
SECTORS		Cleaner Conventional Energy	Renewable Energy	Electric Power Infrastructure	Green Building	Cleaner Transportation	Cleaner Industry	Clean Water	Waste Management	Sustainable Forestry and Agriculture
	SEGMENTS	Cleaner Coal	Solar Energy	Transmission	Optimized Design	Cleaner Road	Optimized Design	Water Extraction	Waste Collection	Sustainable Forest Management
Cleaner Oil		Wind Power	Distribution	Sustainable Materials	Cleaner Rail	Sustainable Materials	Water Treatment	Waste Recycling	Sustainable Land Management	
Cleaner Gas		Bioenergy	Energy Storage	Energy Efficiency	Cleaner Air	Efficient Processing	Water Distribution	Energy from Waste Recovery	Sustainable Farming Communities	
Nuclear Power		Hydropower	Demand Management	Water Efficiency	Cleaner Waterway		Water Use	Waste Treatment	Optimized Crops	
		Wave Power	Supply Flexibility				Wastewater Treatment	Sustainable Waste Disposal		
		Geothermal Energy								

LEGEND

- Sectors covered in the report
- Segments covered in the report
- Sectors and segments not covered in the report

THIS REPORT FOCUSES ON SEVEN CHINA GREENTECH MARKET SECTORS:

- **Cleaner Conventional Energy**
- **Renewable Energy**
- **Electric Power Infrastructure**
- **Green Building**
- **Cleaner Transportation**
- **Cleaner Industry**
- **Clean Water**

Within the Renewable Energy and Cleaner Industry sectors a representative range of segments are covered. This choice of focus was made based on input from partners and advisors, an understanding of the market opportunities, and consideration of the Initiative's available time and resources. Sectors and segments not covered in this report should by no means imply a judgment on their environmental or commercial potential.

Greentech Sectors and Segments

DEFINITIONS FOR EACH SECTOR COVERED IN THE CHINA GREENTECH REPORT are presented below. Due to the particularly broad scope of the Cleaner Conventional Energy, Renewable Energy and Cleaner Transportation sectors, definitions for segments within these three sectors are also included. The report has subsequently been organized along these specific segment lines.

CLEANER CONVENTIONAL ENERGY

Cleaner Conventional Energy is defined as energy derived from non-renewable fossil fuel sources (e.g. coal, oil and natural gas) in ways which minimize the negative impact on the natural environment. This sector also includes nuclear power.

- Cleaner coal includes solutions such as Coal Screening and Scrubbing, Integrated Gasification Combined Cycle (IGCC) and Carbon Capture and Sequestration (CCS)
- Cleaner gas consists of solutions such as Capture and Use of Coal Mine Ventilation Air Methane and Natural Gas Combined Cycle (NGCC)
- Cleaner oil is made up of solutions such as Efficient Oil Extraction, Water Reinjection and Optimized Reservoir Management that allows oil to be extracted in ways which minimize negative impact on the natural environment
- Nuclear power is energy derived via controlled nuclear fission of radioactive materials at nuclear power plants

RENEWABLE ENERGY

Renewable Energy is produced from sources that are naturally replenishing, such as Solar Light, Wind, Waves, Underground Heat, Surface Water Flows and Biomass.

- Wind power is defined as electric energy generated from wind using Power Generation Turbines
- Solar energy consists of thermal or electric energy derived from solar light using Photovoltaic Cells, Concentrating Solar Installations or Solar Water Heaters
- Bioenergy is thermal or electric energy produced from biomass, and includes solutions such as Bioethanol, Biodiesel, Biogas and Biomass Combustion

ELECTRIC POWER INFRASTRUCTURE

Electric Power Infrastructure refers to “smart” electric grids and networks, supported by IT applications, which deliver power to users on demand in an efficient and reliable way, from a broad range of generating sources.

GREEN BUILDING

Green Building covers planning, building and operating solutions that are more sustainable, efficient and healthy than conventional solutions for an equivalent level of comfort and service. Solutions include Integrated Design, Sustainable Materials, Energy Efficient Appliances and Building Automation.

CLEANER TRANSPORTATION

Cleaner Transportation is defined as solutions that increase energy efficiency, reduce emissions and improve resource utilization to minimize the negative impact of transportation on the environment.

- Cleaner road transportation includes More Efficient Engines, Cleaner Fuels, Alternative Vehicle Energy Systems, as well as comprehensive road network planning and development
 - Cleaner rail transportation refers to Energy Efficient Trains, Electrification of Railways and Optimized Railway Operations Management
 - Cleaner air transportation includes Fuel Efficient Aircraft, well planned and constructed airport infrastructure and Optimized Air Traffic Management
 - Cleaner waterway transportation covers Fuel Efficient Ships, well planned and constructed waterway infrastructure and Optimized Water Traffic Management
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CLEANER INDUSTRY

Cleaner Industry encompasses practices that increase energy efficiency, reduce air and water pollution and decrease the amount of solid waste produced by industrial activities. Solutions include on-site Combined Heat and Power (CHP), Energy Efficient Motors, Flue Gas Desulfurization (FGD) systems and Process Redesign.

CLEAN WATER

Clean Water is defined as the collective sum of activities within the economic water cycle – water extraction, water treatment, water distribution, water use and wastewater treatment. Solutions include Water Treatment Technologies, Water Quality Measurement and Monitoring.