# China's Green Markets

*Energy & Environmental Export Opportunities*

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# The International Trade Administration

**The Department of Commerce's International Trade Administration (ITA) is the lead trade promotion agency of the United States government**

| | |
|---|---|
| Competitiveness | • Manufacturing and Services |
| Trade Promotion | • U.S. and Foreign Commercial Service |
| Market Access | • Market Access and Compliance |
| Countervailing Duties | • Import Administration |

# Office of Energy & Environmental Industries Manufacturing and Services

- Promote U.S. Industry Competitiveness
- Eliminate Trade Barriers
- Evaluate Regulation and Policy
- Support Trade Promotion
- Provide Market Research and Analysis
- Organize Trade Promotion Events
- Advocate for Policy in Foreign Markets
- Matchmaker for U.S. Government Programs

# Global Environmental Market Overview

Environmental Technologies (ET) industry = all revenue-generating **goods and services** for **environmental protection, assessment, environmental regulatory compliance, or pollution control and prevention.**

This includes **water treatment, waste management, air pollution control, renewable energy, remediation of contaminated property, design and operation of environmental infrastructure,** and the provision of **environmental resources.**

The **global market** for environmental technologies reached **$782 billion** in 2008.

# Where the United States Stands

The United States is the **world's largest producer and consumer** of ET goods and services, with approximately **119,000 firms** generating **$300 billion** in revenues and **$43.8 billion** in exports, supporting close to **1.7 million jobs.**

**99%** of U.S. ET private sector companies are **small and medium-sized enterprises (SMEs).** Large companies, however, account for 49% of total U.S. ET revenue.

**U.S.** environmental firms **export less than 15%** of their output as compared to **approximately 20% for** their major competitors in the **European Union and Japan.**

# Foundations of U.S. Competitiveness

New and/or more strict **environmental regulations** are the major drivers of environmental markets and technology development. Environmental regulatory compliance requires investments in environmental industry goods and services.

**Government incentives**, such as renewable energy tax credits, also contribute greatly to a strong, stable market. For instance, governments around the world have provided over **$180 billion** in economic stimulus funding for renewable energy and energy efficiency projects.

Regulatory initiatives such as the **Clean Air Interstate Rule, the Clean Air Mercury Rule, definition of "solid waste" changes**, and regional greenhouse gas emissions regulations like the **Regional Greenhouse Gas Initiative** and the **Western Climate Initiative** are incentivizing the next generation of environmental innovation.

# Global Environmental Industry Drivers

**Energy Costs & Security**

**Environmental Regulation**

**Water Scarcity**

**Climate Change**

# National Export Initiative (NEI)

President Obama announced the National Export Initiative in the 2010 State of the Union Address

**Four Areas of Focus:**

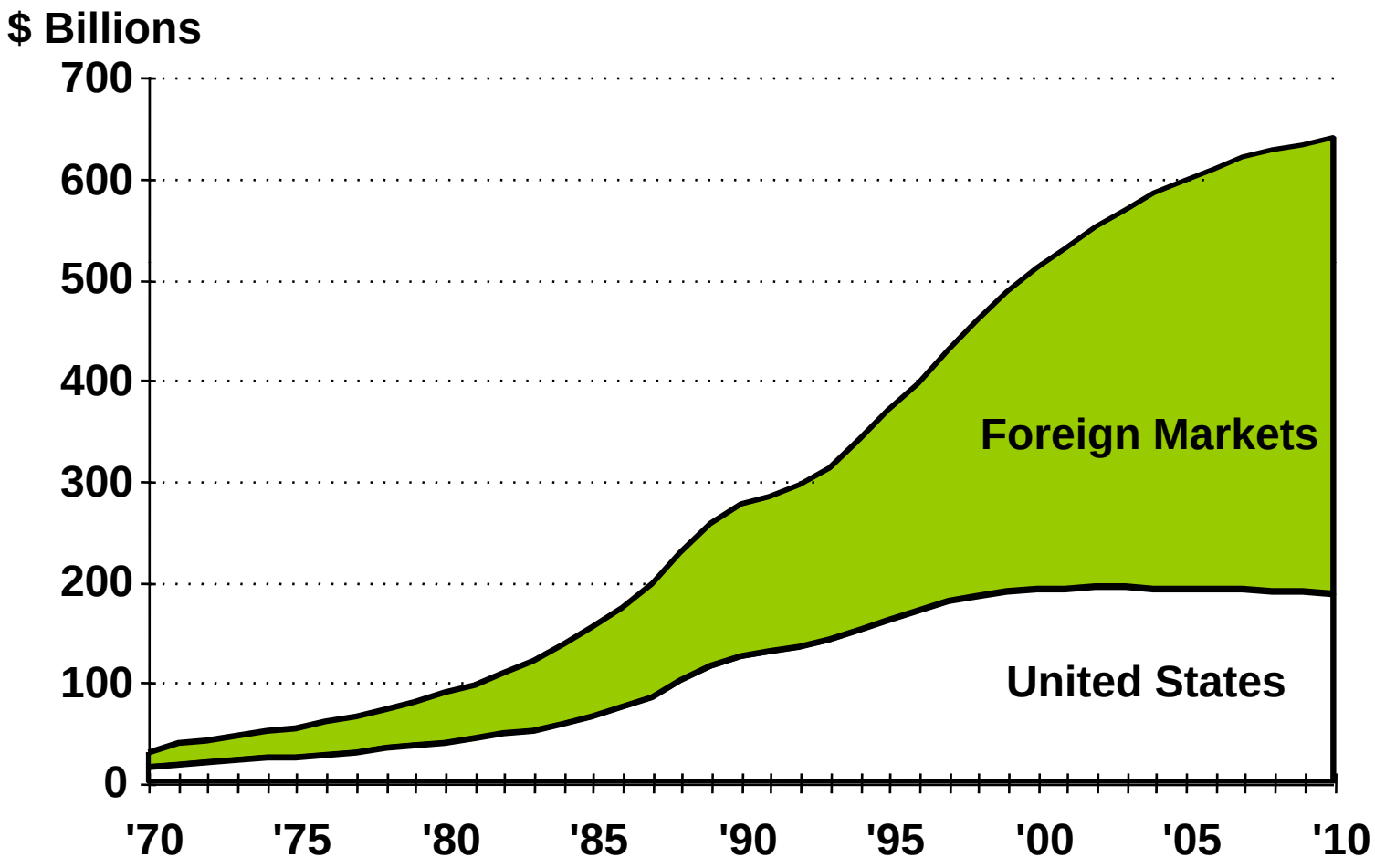
- Small and medium-sized enterprises
- Expanded trade advocacy
- Improved access to credit
- Elimination of foreign trade and investment barriers

**NEI and the International Trade Administration:**

- Increase by 50% the number of SMEs exporting to more than one market , in five years
- Increase ITA's presence in emerging markets (China, India and Brazil)
- Develop a comprehensive strategy in fast-growing sectors, like clean energy

**Goal: Double Exports in Five Years to Create 2 Million New Jobs**

# Envirotech: Domestic vs International Market Growth



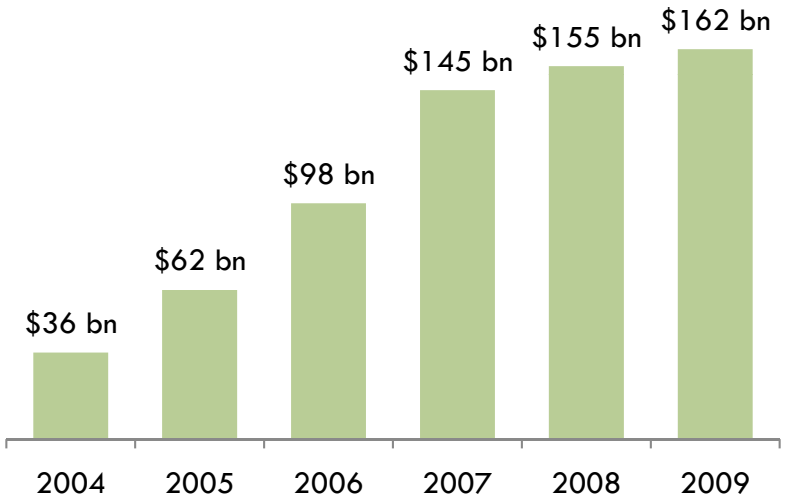
# The Clean Energy Opportunity

A **$40 billion per year** investment in clean technologies by 2020 would generate **750,000 new jobs**

Global investment in clean energy and energy efficiency reached **$162 billion** in 2009 despite the global recession

Governments around the world have provided over **$80 billion** more in stimulus funding for renewable energy projects

**Global New Investment in Clean Energy ($bn)**




Sources: *Bloomberg New Energy Finance*
National Renewable Energy Lab, U.S. Department of Energy

# Key ITA Environmental and Clean Energy Activities

- **Secretarial Clean Energy Trade Missions**
  - China and Indonesia (May 2010)
  - India (February 2010)
- **Global Trade Events**
  - Bright Green (U.S. Industry Promotion at Copenhagen Climate Conference)
  - American Water and Wastewater Association conference
  - U.S.-China Environmental Industries Forum
- **Publications**
  - Energy Project Finance Guide
  - Exporters' Guide to China and Indonesia Energy Markets
  - Electronics Recycling International Market Opportunities Report
- **Market Development Cooperator Program (MDCP)**
  - 3 MDCP awards worth nearly $1M for environmental and clean energy initiatives

# National Renewable Energy and Energy Efficiency Export Strategy

- Interagency effort to create a roadmap to double renewable energy and energy efficiency exports by 2015
- Federal Register Notice on May 28, 2010 (Vol. 75, No. 103)
- Report to be released September 10th and included in first National Export Initiative report to the President
- Three sections will be included in the report
  - Assessment of Current and Future Market Conditions
  - Review of Existing U.S. Government Programs
  - Interagency Roadmap Going Forward

# Top Envirotech International Growth Markets

**Wind Power**
1. China
2. Germany
3. Spain

**Air Pollution**
1. China
2. Saudi Arabia
3. Brazil

**Monitoring**
1. E.U.
2. Japan
3. China

**Biomass Power**
1. Eastern Europe
2. U.K.
3. China

**Solar PV**
1. Germany
2. Italy
3. Japan

**Consulting/Eng**
1. E.U.
2. Japan
3. China

**Water**
1. China
2. India
3. Mexico

**Geothermal**
1. Indonesia
2. Philippines
3. Turkey

**Welding**
1. China
2. E.U.
3. Japan

**Solid Waste**
1. China
2. India
3. Indonesia

*U.S. Department of Commerce*

# China: Best Prospects in Air Pollution Control

- Clean coal and scrubber technologies
- Cleaner burning technology
- Auto emissions control technology
- Air monitoring instruments
- Desulfurization and Dust removal technology and equipment
- Advanced, portable remote auto emission detection instruments

# China: Best Prospects in Solid Waste Management

- Waste and Recycling Handling and Separation Technologies
- Sanitary landfill technology
- Municipal Waste Collection Technology
- Integrated Recycling Systems
- Landfill Monitoring Technology

# Hydropower Energy in China

- China is the largest market in the world for hydropower
- China is both building large hydropower facilities and smaller or micro hydro power plants in rural communities
- Large hydropower turbines are generally sourced from Europe (Alstom, Siemens, etc)
- U.S. companies are global leaders in the services associated with hydropower development (financing, design, engineering)
- As China becomes increasingly dependent on renewable energy sources of energy, hydropower may play an important storage role, as well as provide baseload electricity

**The Guangzhou Pumped Storage – China now has 15 GW of pump storage capability and is planning to add more**

# Wind Energy Market in China

- Market Size
  - 81% of $34 B invested in clean energy (2009)
  - 3rd largest market (installed capacity)
- Key Regions
  - North and West (Gansu, Inner Mongolia, Hubei, Zheijang, Jilin, and Jiangsu Provinces)
- Best Prospects
  - Electrical control devices, turbine bearings, gearboxes, technology licensing
- Barriers
  - Transmission constraints
  - Investment Restrictions (offshore)

# China's Solar Market

Market Size

- Small market < 1% of total world solar PV installation capacity
- But high growth potential

  (2/3 land enjoys over 2,200 radiation hours per year)

Best Prospects

- Polysilicon, PV manufacturing equipment, next generation solar PV

Barriers

- Highly Competitive
- Domestic Company Bias
- Nascent Regulatory Environment

# U.S. Envirotech Exports to China – Challenges

- National Treatment
- Foreign Investment Catalog
- Indigenous Innovation Initiative
- Technology Transfer Requirements
- Enforcement
- Standards Development
- International Competition

# Stay in Touch with OEEI!

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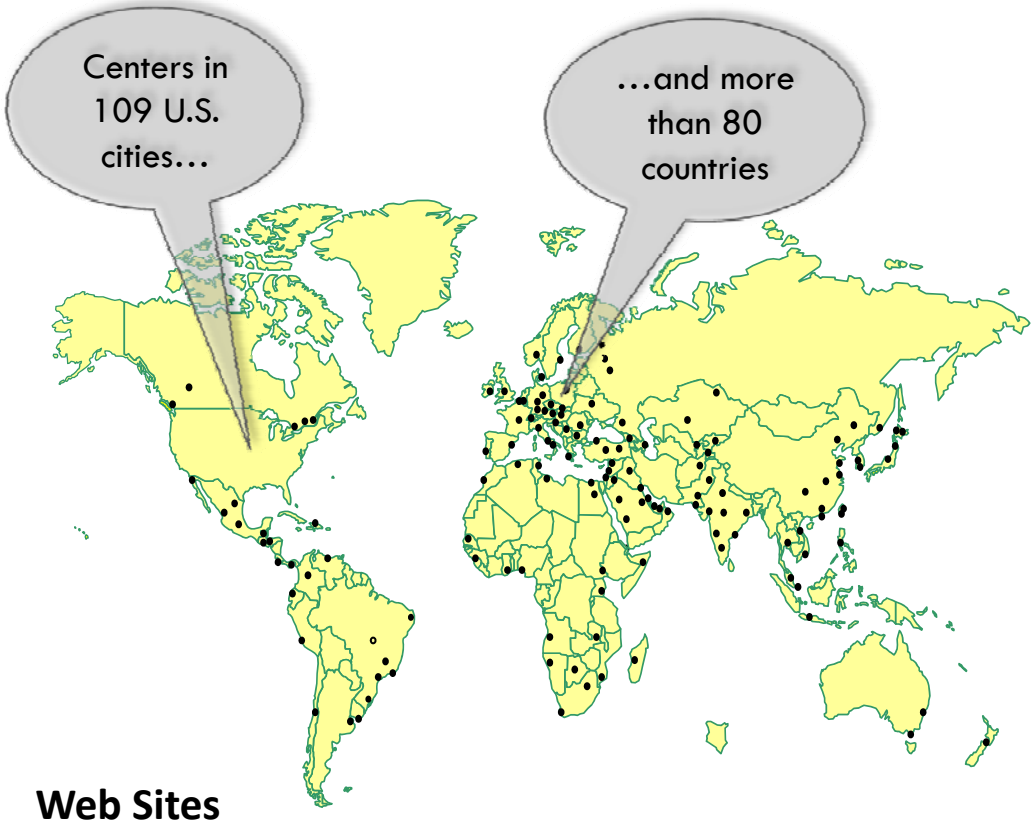


**Web Sites**

- www.trade.gov/envirotech
- www.trade.gov/energy
- www.export.gov