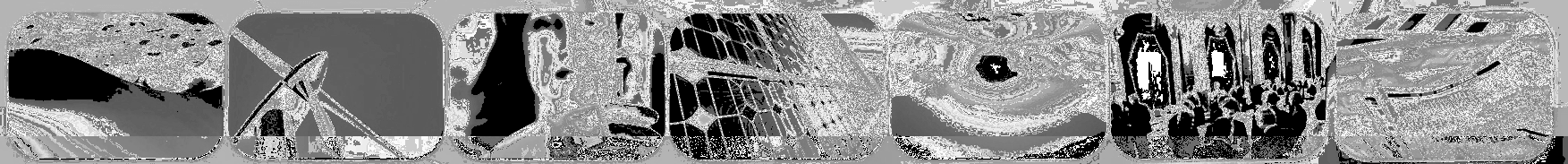


# International Cleantech Investment and Development: Driving Technology Transfer



Conference on Climate Change  
Beijing, China

November 7, 2008

Jim Mahoney  
Managing Director - China  
Cleantech Group LLC

# How it all began



“? ? , ? ? ? ? ”

# What is Cleantech?

Ubiquitous  
Global  
Applications

**CLEANTECH** encompasses knowledge-based technology products/services that:

- Provide superior performance at lower costs
- Greatly reduce or eliminate negative ecological impact
- Improve the productive and responsible use of natural resources



**ENERGY:** Includes energy generation, storage, infrastructure and efficiency



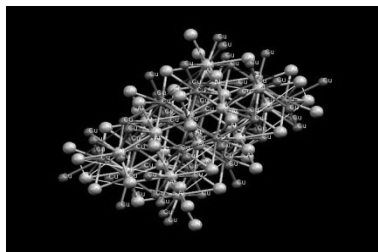
**TRANSPORTATION:** Includes vehicles design, fuels and logistics



**WATER:** Includes filtration, purification, water conservation and wastewater treatment



**AIR & ENVIRONMENT:** Includes remediation, emission control, trading and offsets



**MATERIALS:** Includes environmental friendly nanotech, biotech, chemical materials



**MANUFACTURING/INDUSTRIAL:** Includes monitoring/control appliance and smart production industries.



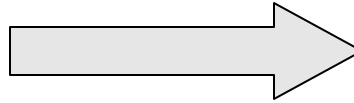
**AGRICULTURE:** Includes land management, natural pesticides, natural fertilizers, irrigation,



**RECYCLING & WASTE:** Includes various recycling services and waste treatment services.

# From 'Clean up' to 'Cleantech'

## 'Envirotech' or 'Greentech' 1970s to mid 1990s



## Cleantech Late 1990s – Today

- Regulatory-driven, regional markets
- “End-of-pipe” tech - remediation
- Traditional construction engineering  
“Save the world/touchy-feely” mentality
- Low use of IT.



- Increasingly a market-driven trend
- “Front-of-pipe” technology
- Systems design & engineering
- “Entrepreneurial” mentality
- High use of IT



# Cleantech Drivers: Energy Demand



Source: Sina.com



Source: Blogcn.com

- Majority of energy generation in China is from coal

# Cleantech Drivers: Emissions



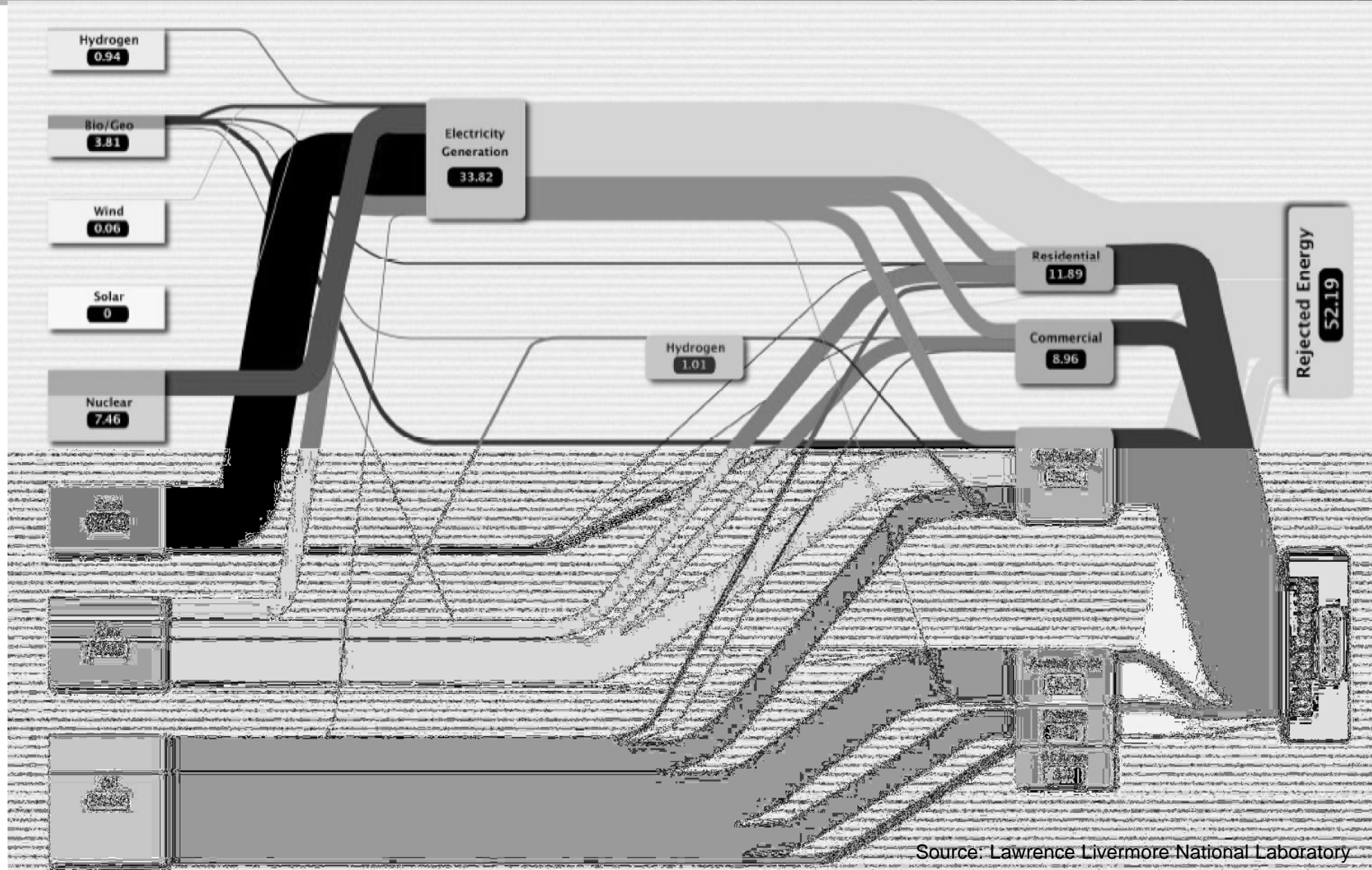
Tai Lake Pollution Source: CCTV



China City Expansion Source: UNEP

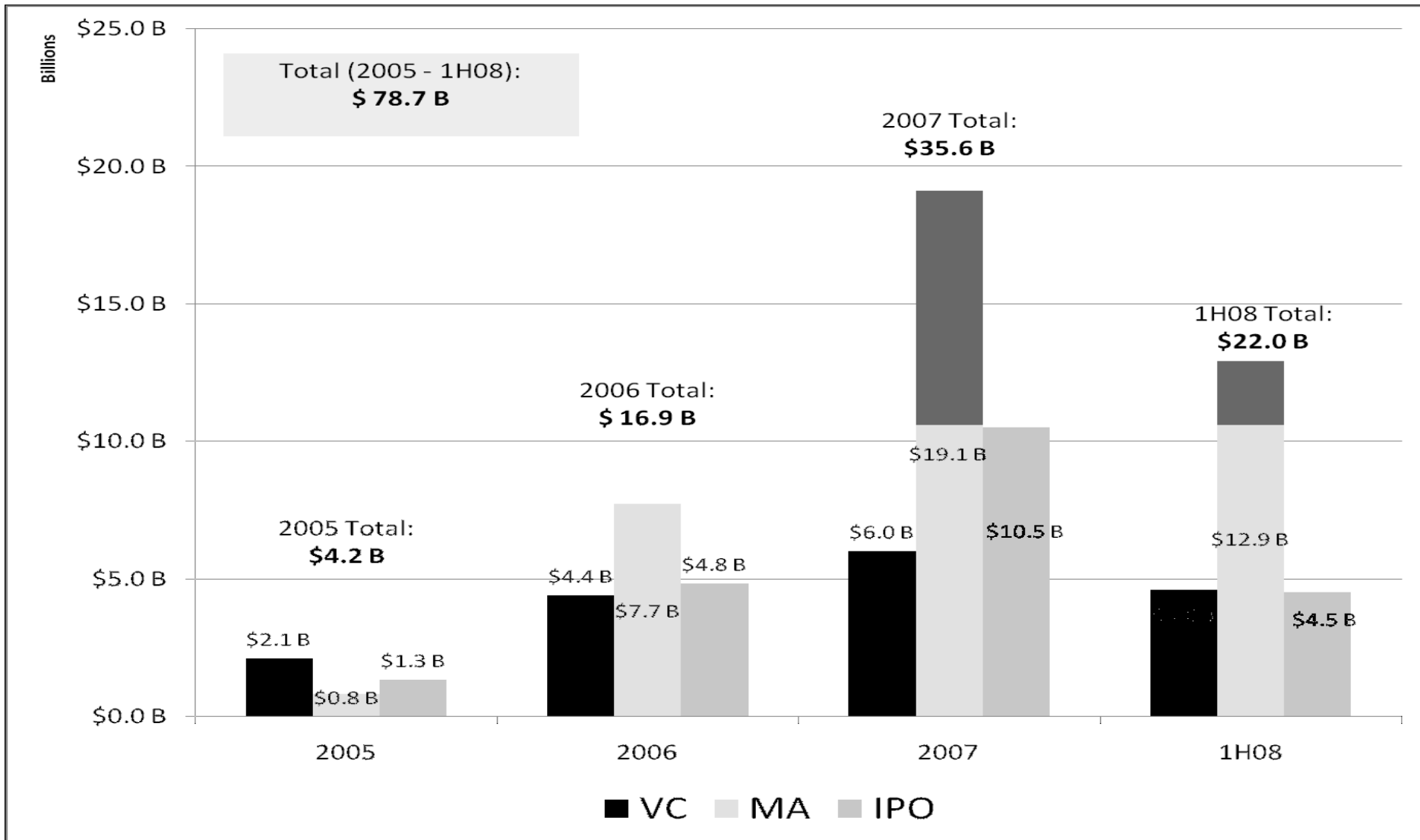
- Water resources – low, uneven distribution, growing demand

# Efficient use of energy and resources



Source: Lawrence Livermore National Laboratory

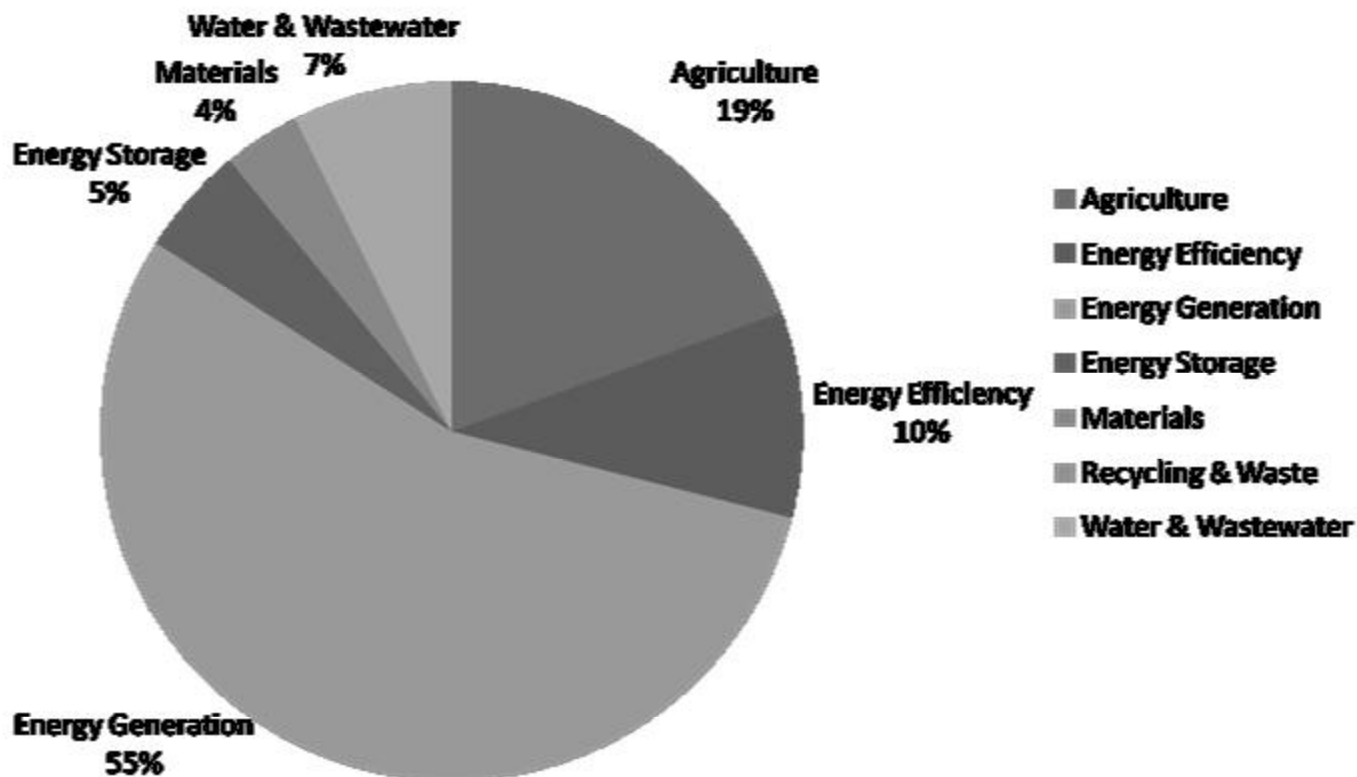
# What are investors telling us?





# 2006-2008 Cleantech in China Venture Investment

## 2006-2008 Cleantech China Investment by Sector



Total: 1.15 billion USD

# Beyond the market “potential” ....

## China - Western cooperation – growing successes:

### Knowledge and technology transfer

- Coal gas purification, coal to liquids
  - Battery storage
    - Waste-to-energy
      - Boiler efficiencies
        - 20 cities project – Low carbon Economy
          - Refrigeration units
            - Knowledge Innovation Center, Cleantech Clusters



# Some Challenges

- **Driving down cost – corporate and government leadership**
- **Building big-small business partnerships**
  - JVs, licenses, R&D, marketing alliances, pilots and demos, investment
- **Creating linkages between debt and equity markets**
  - Project finance, private equity, VC, leasing, carbon credits
- **Encouraging appropriate public policies**
  - Less supply-side tech push and more demand side product pull
- **Bringing cleantech to emerging market economies**
  - Harnessing the leapfrog opportunity
  - Developing appropriate tech for local circumstances
- ***Speed up investment – Accelerate Adoption by industry***

# Global Supporters - A Who's Who



# Accelerating Cleantech Adoption by Industry

## Thank You!

Join us at:

**Cleantech Forum XX Shanghai \* December 3-5, 2008**

Cleantech Forum XXI San Francisco \* February 2009

Cleantech Forum XXII Copenhagen \* April 2009

**[jmahoney@cleantech.com](mailto:jmahoney@cleantech.com)**

