



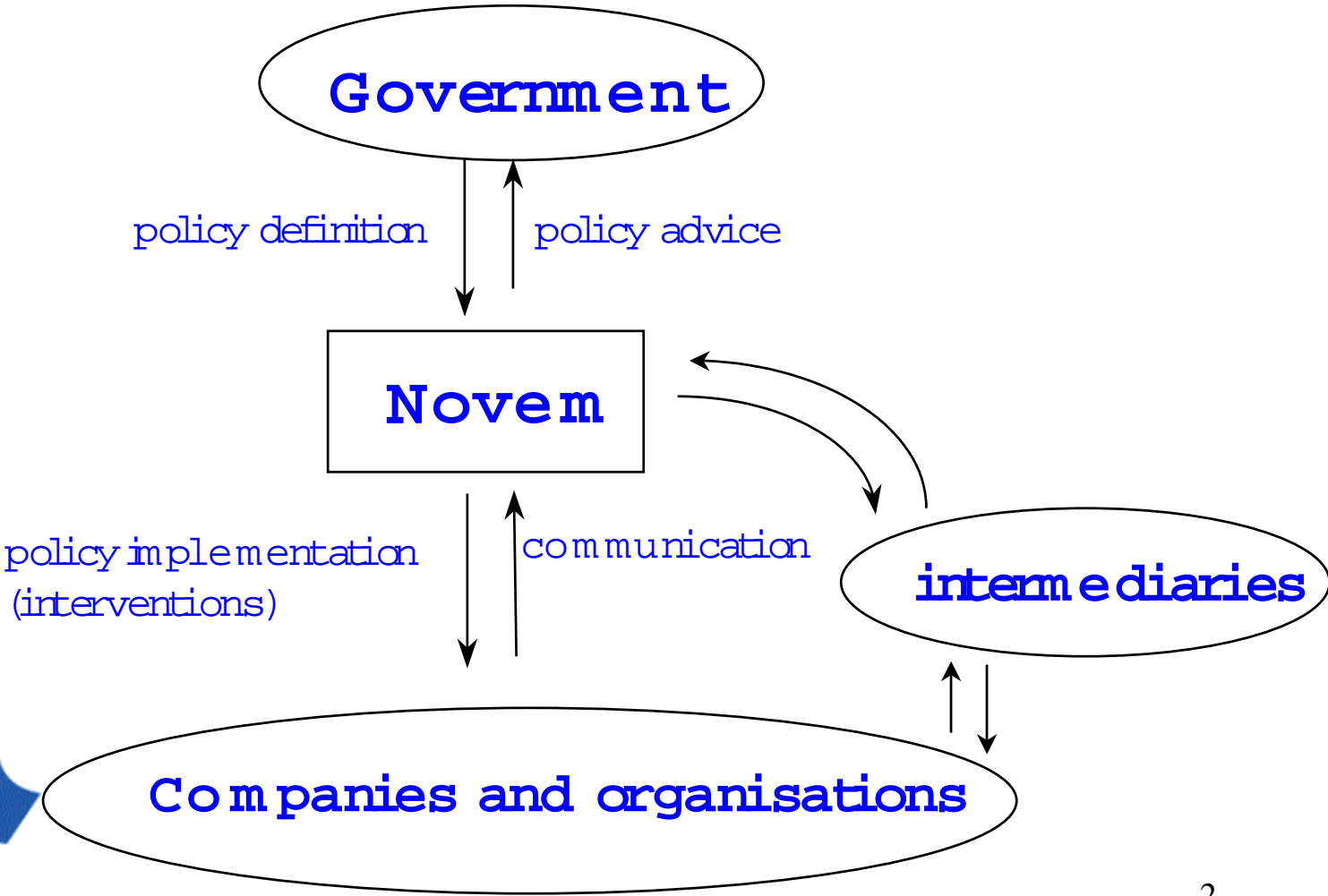
Netherlands
agency
for
energy
and the
environment

China's solar thermal industry: Threat or opportunity for European companies?

Li Hua

Novem, the Netherlands

Novem: Your partner for sustainable development



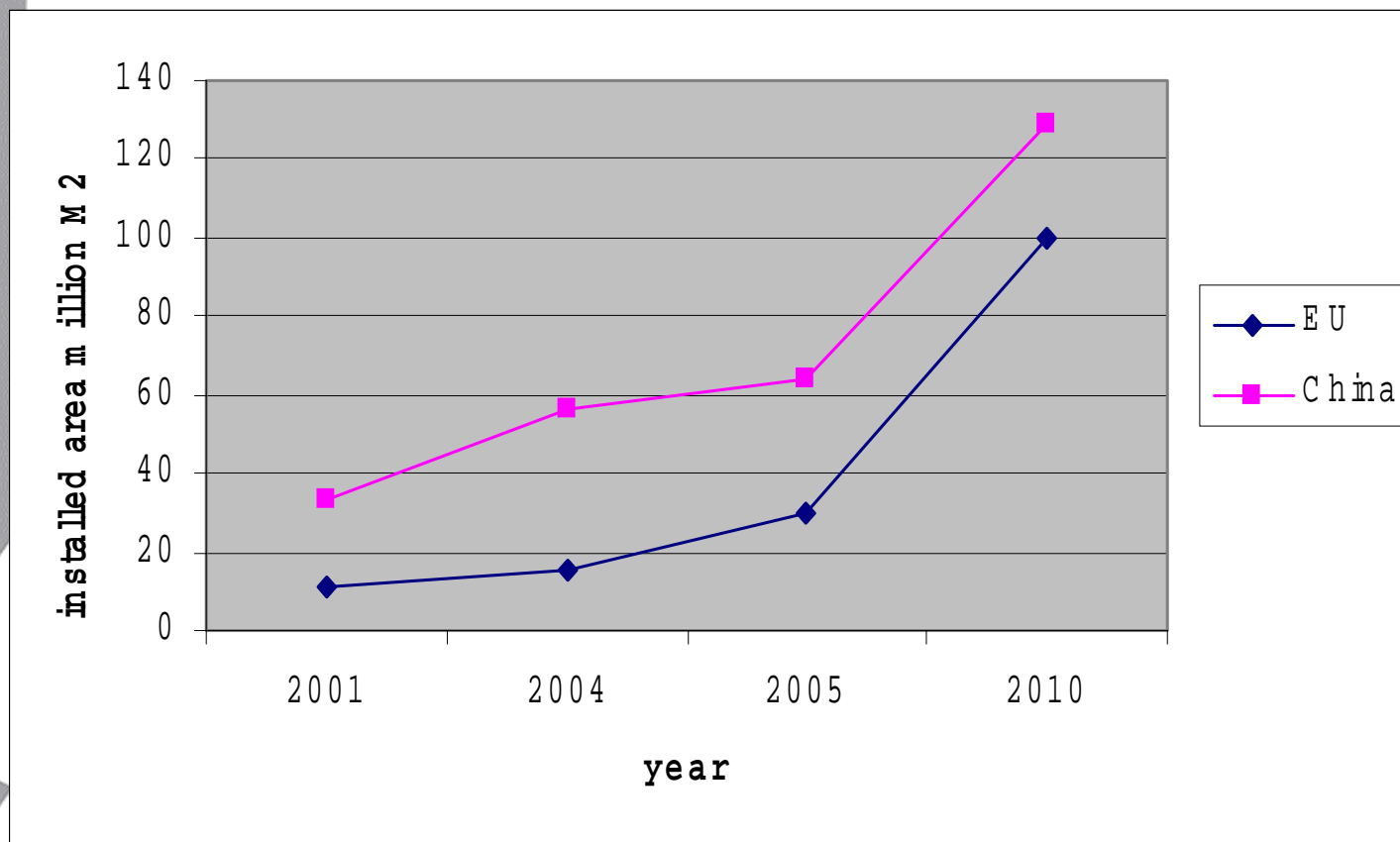


Novem activities

- Sustainable Building
- Sustainable Production
- Sustainable Energy
- Sustainable Transport

- International Affairs

SWH (Solar Water Heating) system in EU countries and in China, Past, current and future



How much does it cost in China?

Price: €637 - €1325 (RMB 5100-10600)

Vacuum tube collector with
50 - 120 l electric water heater

Price: €430 (RMB 3000)



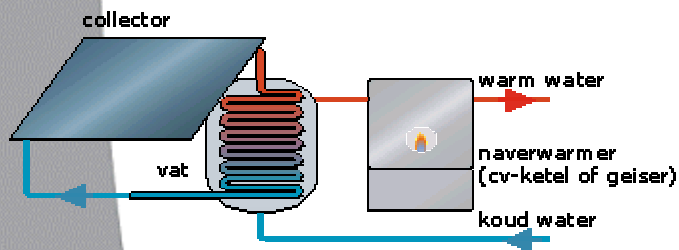
2m² vacuum tube collector
180 l water tank

Price: €286
(RMB 2000)

2 m² flat-plate collector
180 water tank

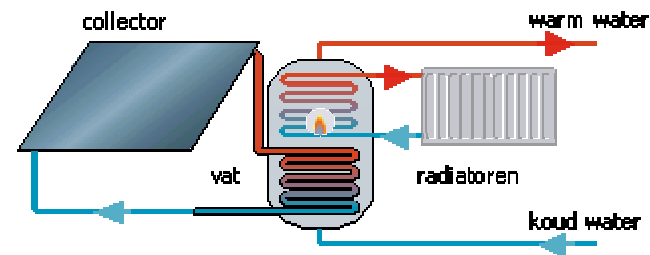
How much does it cost in the Netherlands?

Price: €2000-3000
Incl. Installation & VAT



Standards system
3m² collector
80 - 150 l water tank with a
gas boiler

Price: €4000 -5000
Incl. Installation & VAT



Combi system
250 l water tank integrated into a
central heating boiler

What system would you like to use?



How much would you like to pay

€300 or €30000?

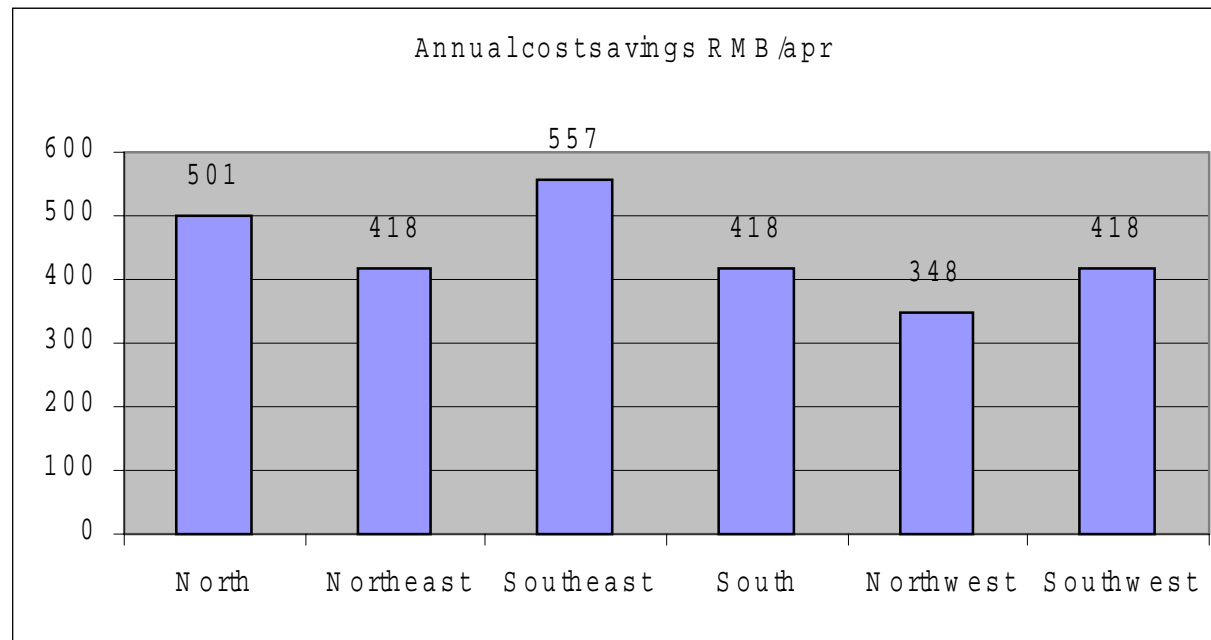


Why SWH system in China?

- Excellent solar resource,
- Poor resource of other forms of energy
- Local production
- Affordability
- SWH is the most economic option

Why SWH system in China?

SWH is the most economic option



Assumptions: 4 m² collector, 150 l water tank, electricity costs 0,36 - 0,50 RMB/KWh 365 days/year 125 l hot water per day



Why SWH in Germany and the Netherlands

- National government commitment on Kyoto Protocol
- Public awareness on environment
- Government incentive subsidy programme



Barriers of domestic market expansion in China?

- Durability & reliability
- Building integration
- After sales services and maintenance
- Wider applications
- Public awareness



Government policy

No officially expressed support policy or national priority for SWH

No government subsidy for household or business purchase

Standards

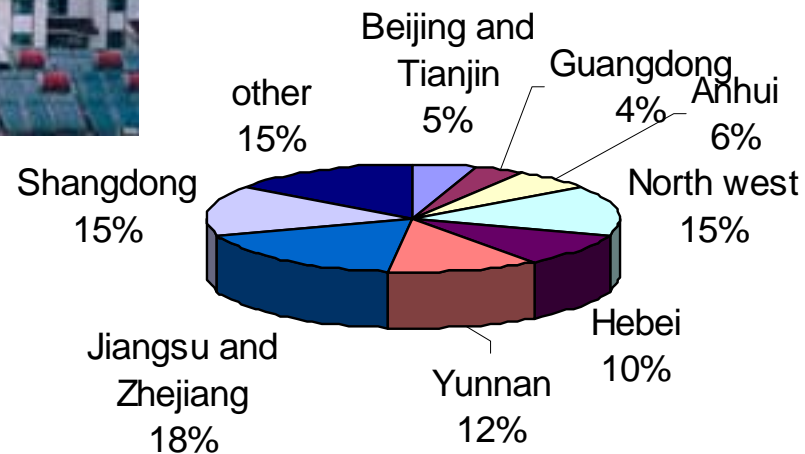
2 basis standards,

4 test standards,

3 products standards,

1 sector standards

How is the market presentation of SWH system in China?



SWH industry in China

More than 1000 factories in China

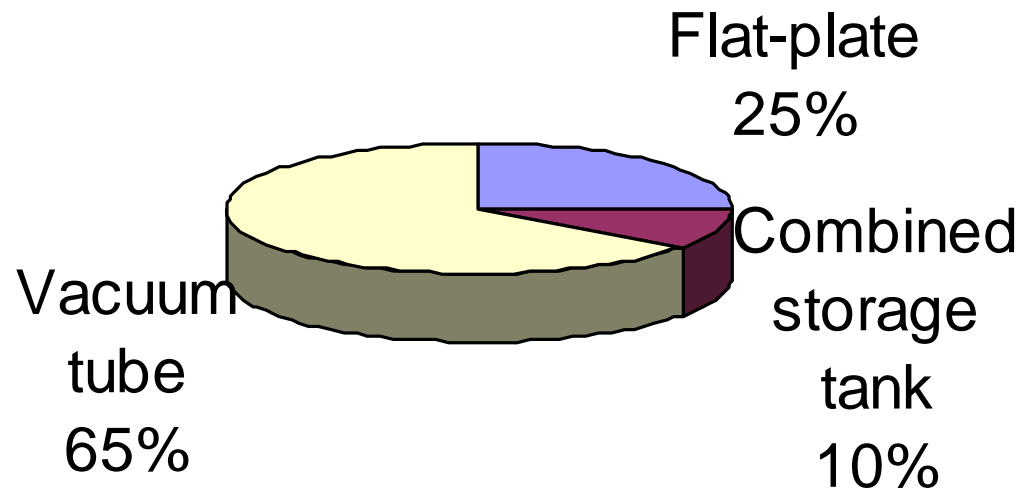
Most private own small and medium size companies

Most located in the eastern part of China

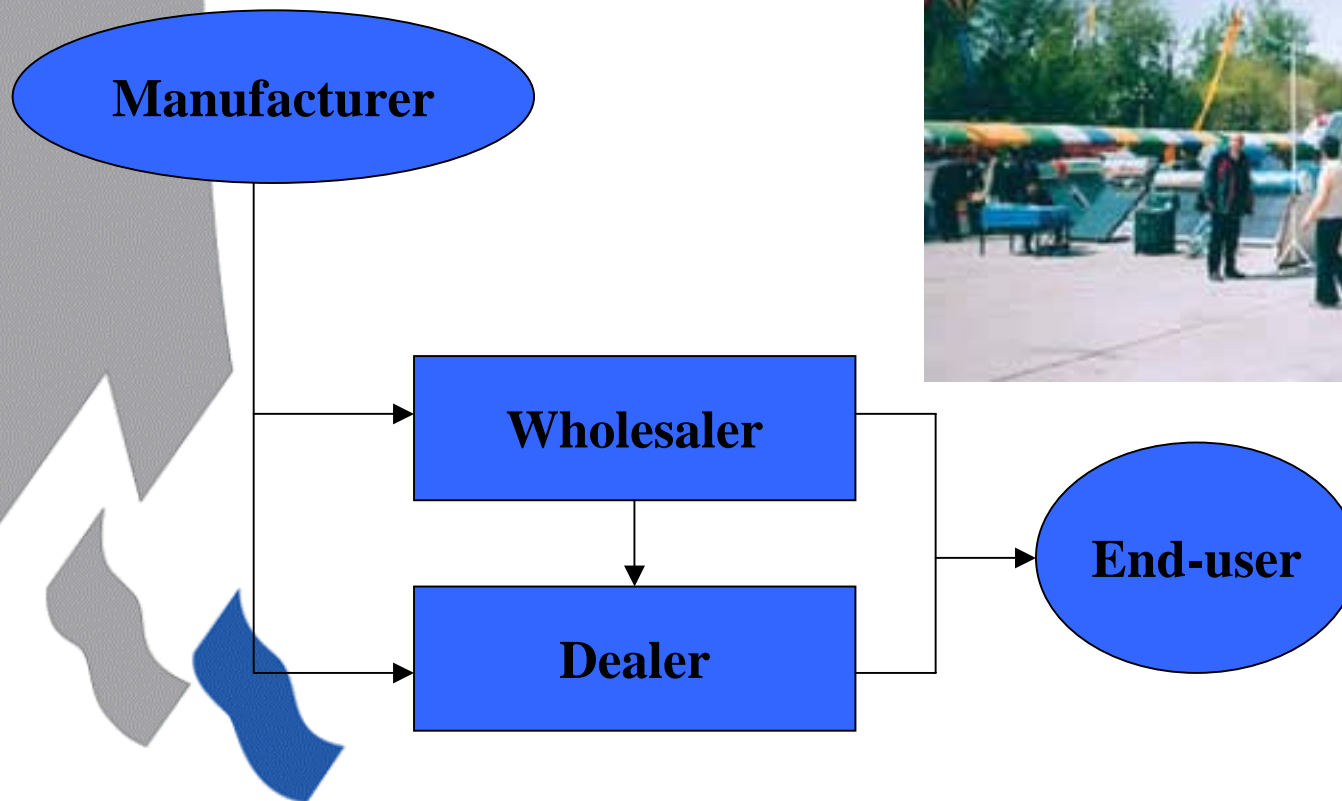
Type	geographical location	number of production lines	Production capacity
Vacuum tube	Shangdong	141	5 million m2
	Beijing	62	
	Jiangsu	34	
	Hebei	26	
	Zhejiang	21	
	Anhui	8	
	Others	12	
Flat-plate	Yunan, Guangdong	28	3 million m2

Source: annual report 2000, China SWH Industry Development

What are main products in China?

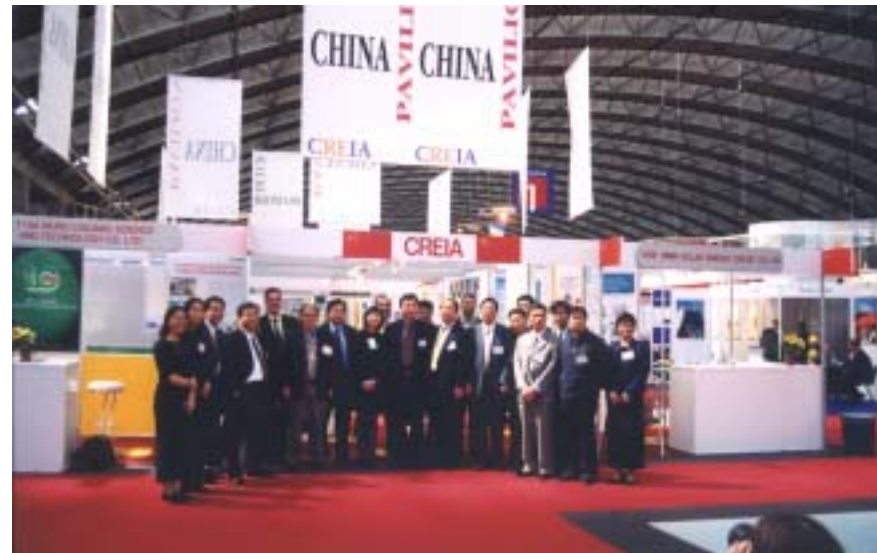


How is the distribution in China?



Challenges to the SWH industry in China

- Poor quality damages consumers confidence
- Local governments forbid SWH installation
- Technical and management skills of personnel
- Building integration
- Domestic competition
- International market expansion



New Energy for the South, April 1-3,
2003 Germany



Development strategy for SWH sector in China?

- Set up 3 national test centers
- develop product certificate system
- Government support to 3-5 factories on technology and quality improvement
- Demonstration projects
- Develop 24 h/day system
- Building integration
- Learn international best practice



New product development in China: 24 h/day SWH system

- Electric water heater
- Gas boiler
- Heat pump combination
- Space heating
- Cooling





Conclusions

It is a threat

- High investment is the barrier of market penetration in Germany and the Netherlands
- Market is mature for green products
- Chinese price is attractive

It is also an opportunity

- Strategy partner on product and technology improvement
- Joint project
- Chinese pay higher price for high quality from Europe.