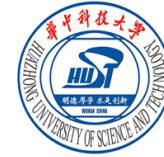




**ParisTech**  
INSTITUT DES SCIENCES ET TECHNOLOGIES  
PARIS INSTITUTE OF TECHNOLOGY

 **ICARE**  
华中科技大学 中欧清洁与可再生能源学院  
China-EU Institute for Clean and Renewable Energy  
at Huazhong University of Science & Technology



# China-EU Institute of Clean and Renewable Energies ICARE



# Inauguration of ICARE on 6th October 2012

## 2012年10月6日中欧清洁与可再生能源学院揭牌仪式





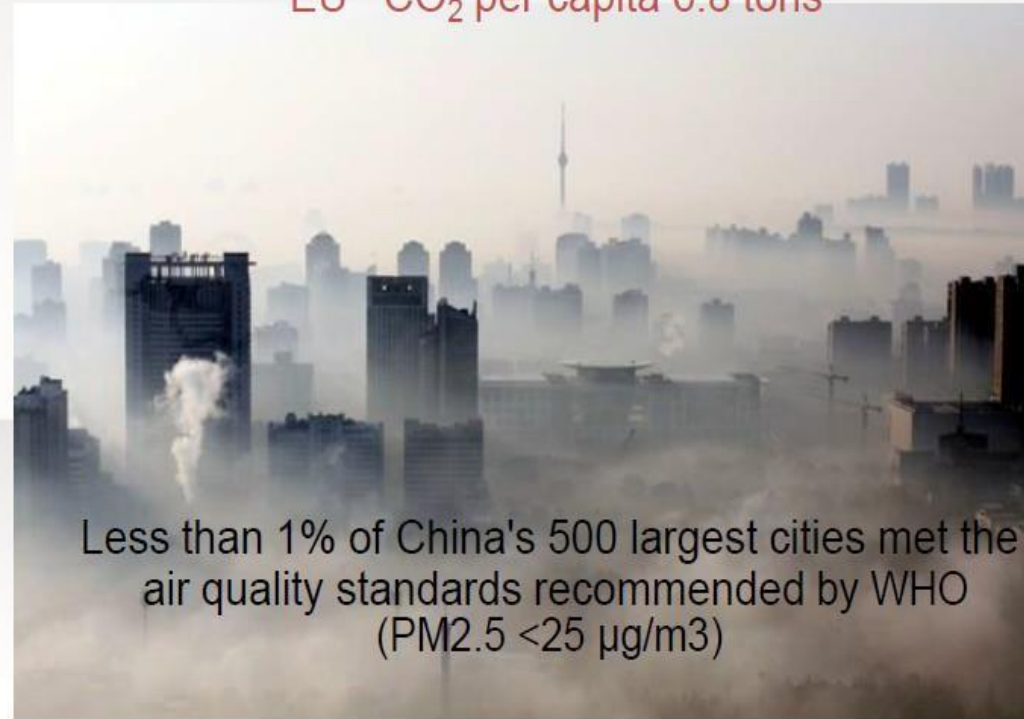
**China-EU School of Law**  
**Location: Beijing**  
**2008**

**China-EU Institute for Clean and Renewable energy**  
**Location: Wuhan**  
**2012**

**China-EU International Business School**  
**Location: Shanghai**  
**1994**

# Air pollution in big cities

USA CO<sub>2</sub> per capita 16.4 tons  
2013: China CO<sub>2</sub> per capita 7.2 tons  
EU CO<sub>2</sub> per capita 6.8 tons

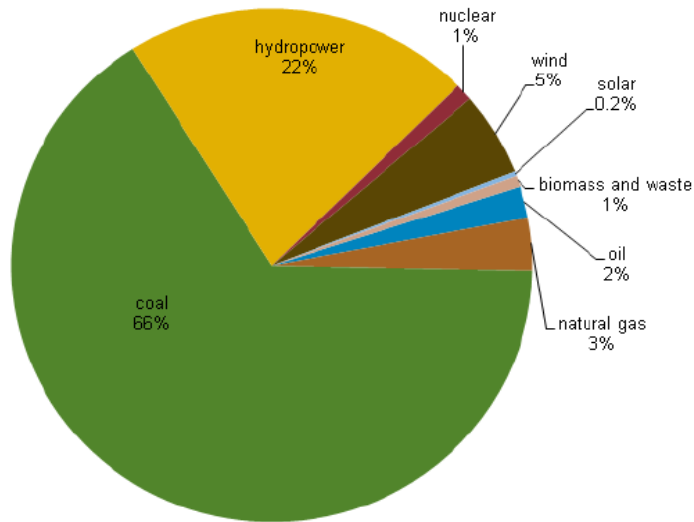


Very fast improvement is needed in energy mix and energy efficiency



# China's installed electricity capacity

As of 2011

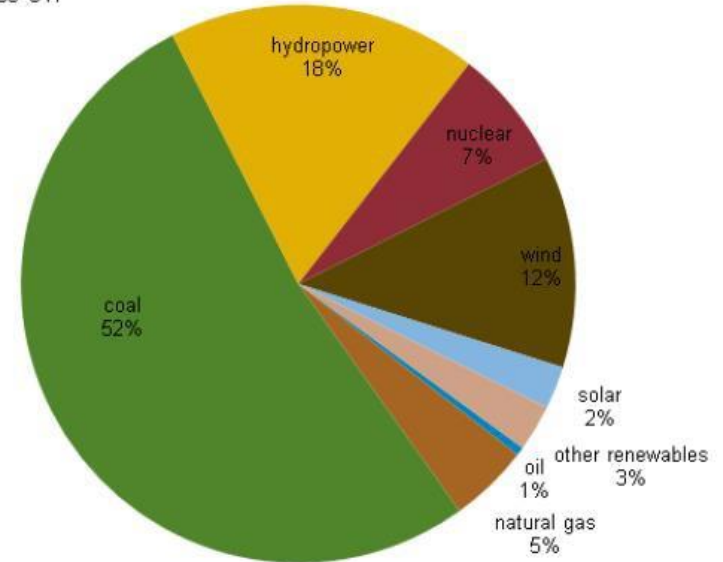


Sources: FACTS Global Energy, IHS Cera, Chinese Renewable Energy Industries Association.

1 000 GW  
4 500 TWh

2040 forecast

installed capacity: 2,265 GW



Source: EIA, *International Energy Outlook*, 2013.

2 265 GW  
11 600 TWh





# Ideal location in the GuangGu development zone (optical valley)



- 1,3 millions students in 40 universities and higher Education institutions
- 2 Chinese top ten universities :  
Wuhan University & Huazhong (HUST)

- Surface area : 500 km<sup>2</sup>
- Wuhan fastest developing economic zone
- High-Tech companies and S&T parks : Schneider electric, Lenovo, Fiber home, Huawei, IBM, Deutsche Telecom,...





绿色能源·驱动未来  
GREEN ENERGY FOR A CLEAN FUTURE

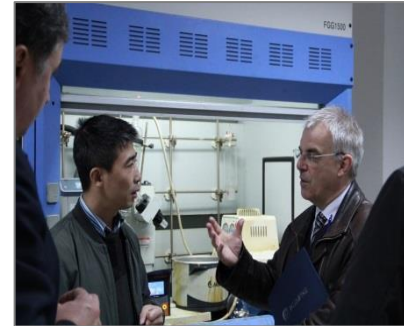
A sino-european cooperation platform in  
Solar Energy  
Wind Energy  
Biomass  
Geothermal Energy  
Hydrogen & Storage  
Energy Efficiency

Coordinated by ParisTech

With a strong support from French MAEE



双学位硕士  
Master Program



研究及咨询  
Research &  
Consulting  
Platform



职业培训  
Continuing  
Education



# A double Master Degree

(2 years for ParisTech)

**ParisTech Master  
On Clean and Renewable energy**

(3 years for HUST Master of science)

**HUST Master  
On New Energy Options engineering**

European (flying) teachers : 45

Chinese teachers : 6

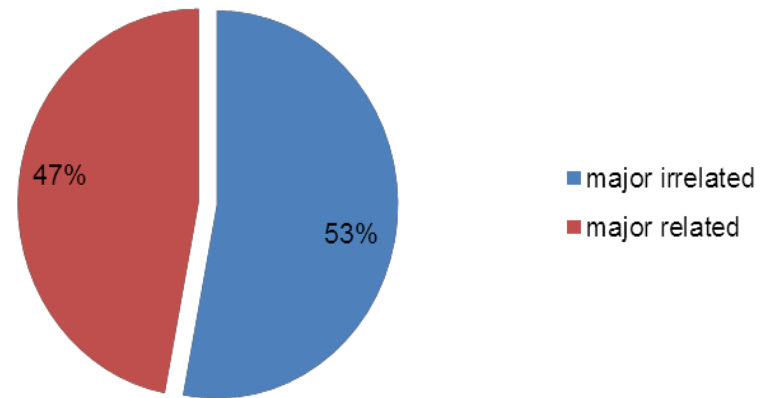
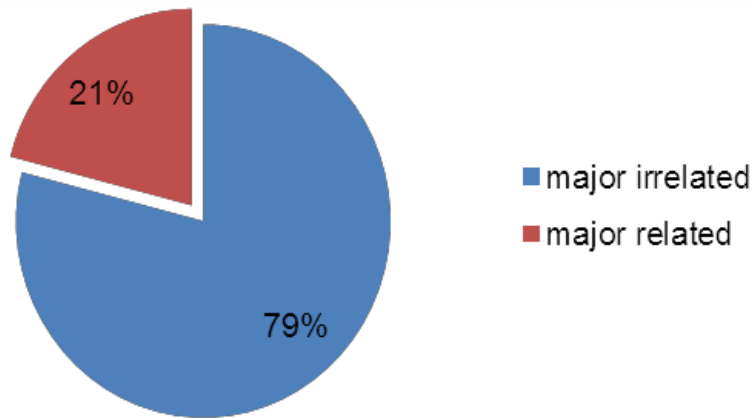
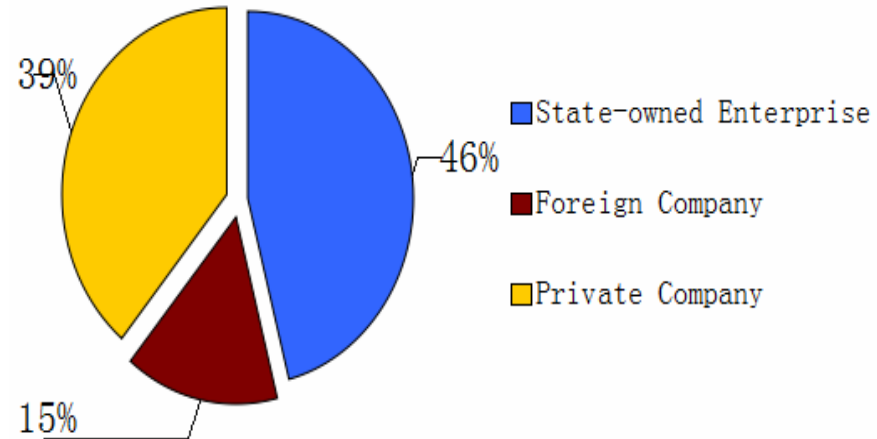
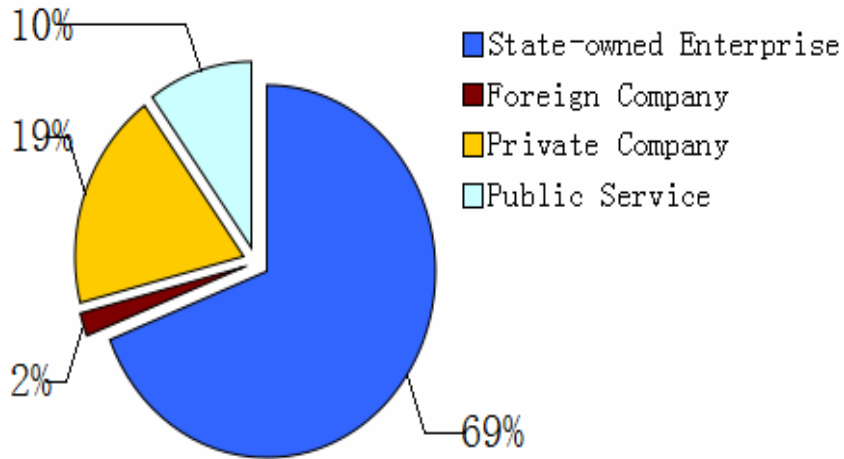
	Total number	Internship in China	Internship in Europe	% abroad
<b>2012</b>	37	25	<b>12</b>	32.4
<b>2013</b>	63	47	<b>16</b>	25.4
<b>2014</b>	59	38	<b>21</b>	35.6
<b>2015</b>	46	26	<b>20</b>	43.5
<b>total</b>	<b>205</b>	<b>136</b>	<b>69</b>	33.7

**6 months internship with common Chinese – European supervision**





# Graduate careers regarding the RE sector (up to Dec. 2014)

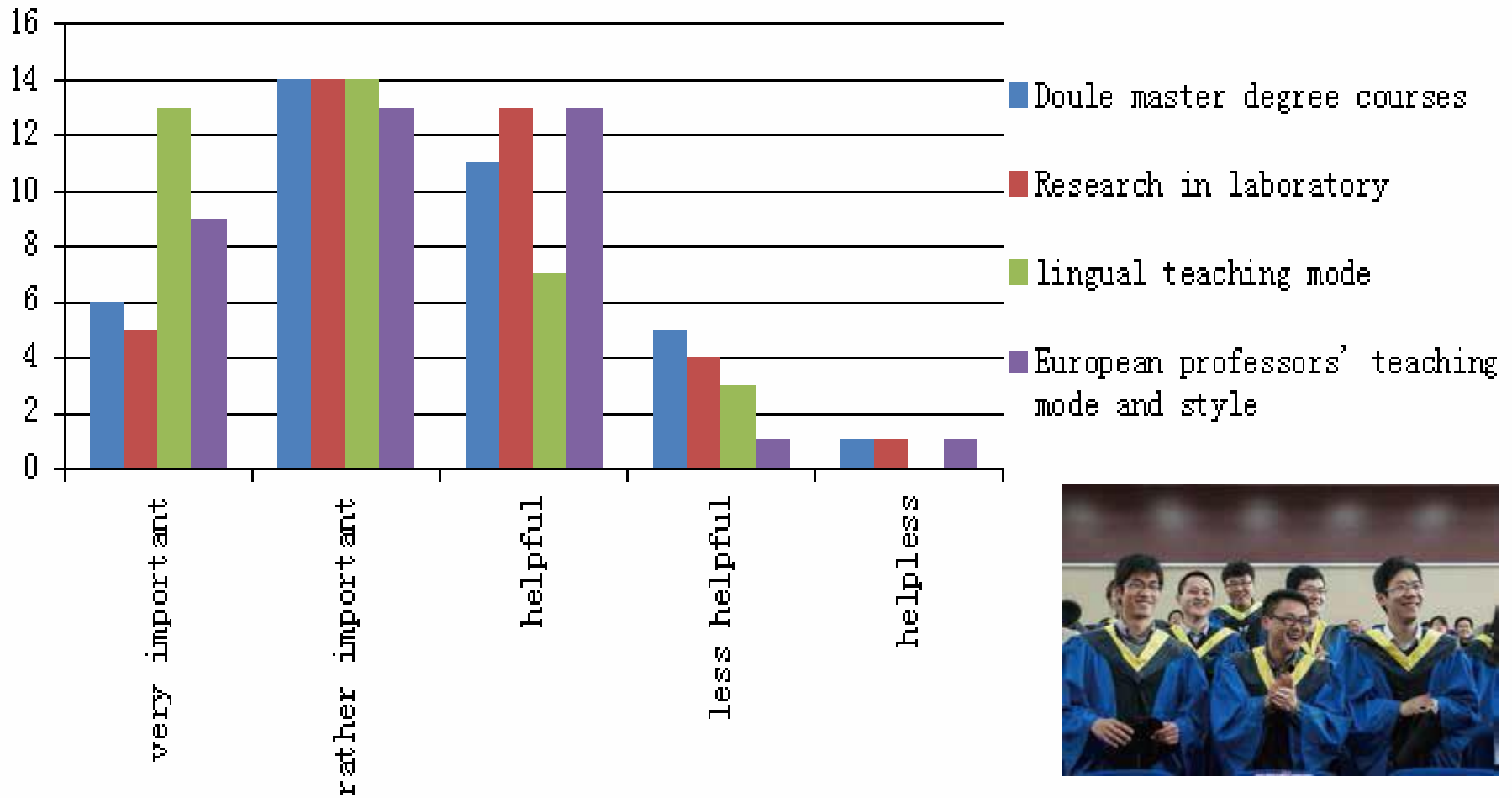


2010-2013

2014



# Impact of ICARE features to student career



# Research Platform

- Set up of seminars and conferences to foster scientific cooperation  
20 conferences in 2012/2014 (18 european + 2 Chinese)
- Co- organisation of workshops and congresses  
ICOPE 2013 – Green Chemistry 2014 (Wuhan-Shanghai)
- Exchange of PhD students
- Proceedings of students Master thesis



# Research Platform

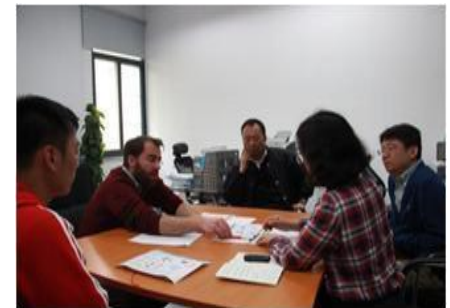
Collaborative research on key technologies to generate electricity by cascade utilization of solar thermal energy

Founded by The National Program of International Science and Technology Cooperation of China

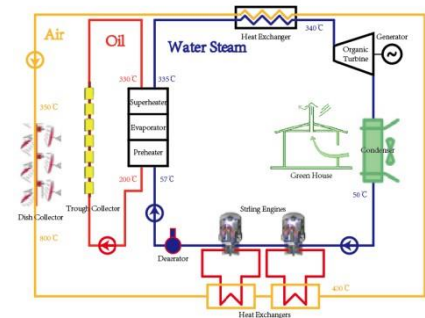
**Implementation period : April 2014 ~ March 2017**

**Beneficiary :** Huazhong University of Science and Technology

**Partners :** Laboratoire PROMES-CNRS, University of Perpignan  
MINES Paris Tech  
Universidad De Zaragoza



2 Master students internship + 1 PhD in France  
1 PhD in Spain



# Continuing education

- From 2013-2014 : Focus on Renewable Energy technologies Training sessions on PV : 4 sessions gathering 50 persons as a whole  
A lot of competitors at each scale.
- From 2014-2015 : Focus on Energy Efficiency in Buildings (EEB)  
in 2014 : 3 sessions with 100 persons as a whole

The EEB context is very favorable :

- Wuhan has a demonstration district on EEB (96 km<sup>2</sup>)
- The building sector is very diversified and diffuse
- There is a big need
- Europe has a heavy experience in EEB

10 sessions are planned at present





# Present situation and evolution

- ICARE has been ranked first in the 2014 MOE evaluation of joint international institutes for education and research
- Encouraging results in a sector where China has impressive development perspectives. Sharing a common highly visible institute in Clean and Renewable Energy is very strategic.
- Graduated students from ICARE are granted with project management positions in industry quicker than usual for other graduates.
- ICARE is an easy entry point for European companies. We can help to give a better understanding of the Chinese market and evaluate business opportunities by providing useful Chinese context experiences, a possible R&D support and an access to skilled human resources
- Looking for sustainability:
  - Support at the political level
  - Evolution at the academic level to strengthen the links on R&D activities
  - A financial balance to be found



# Sustainability : ICARE added-value in transversality

