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CHINA LONGYUAN POWER GROUP CORPORATION LIMITED

# Further training

# PR China

- Training centre structure
- Education and training
- Qualification needs
- Training Centre
- Equipment
- Provided training
- Trained employees





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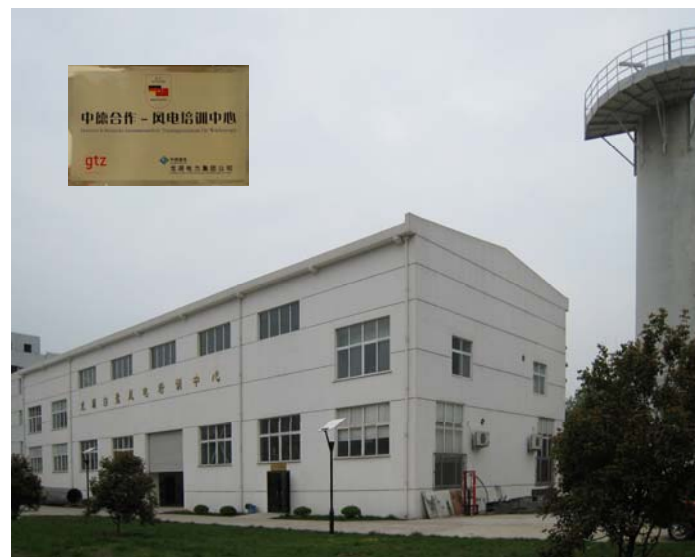
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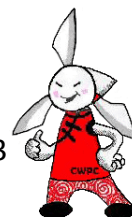
2007 - 2010



## Suzhou LonYuan Bailu Wind Power Vocational Training Centre

2010-11-29

SOUTH AFRICAN WIND ENERGY CENTRE (SAWEC) Workshop on  
Monday 29 November 2010, 09h00 – 14h15 (- 17h00)





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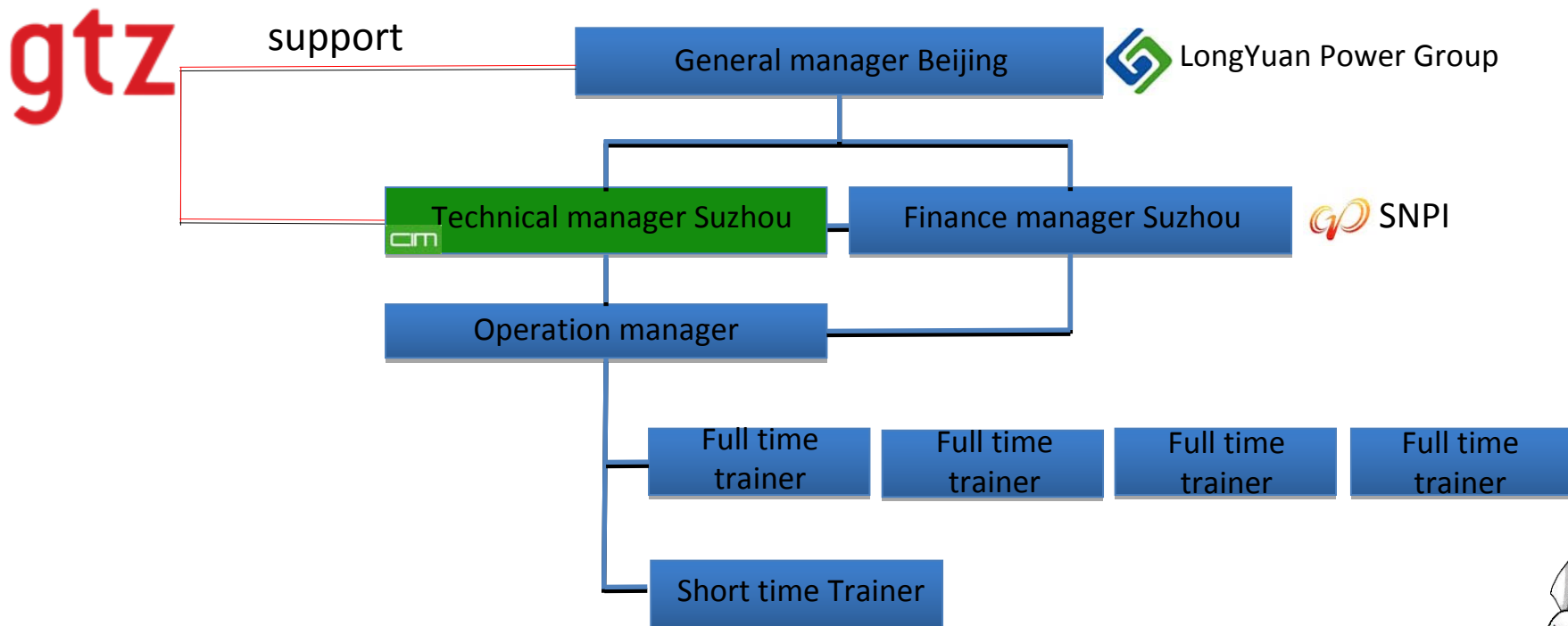


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## Suzhou LonYuan Bailu Wind Power Vocational Training Centre

### Organizational structure

Stakeholder: LongYuan Power Group 60%   
Suzhou Nuclear Power Research Institute 40% 





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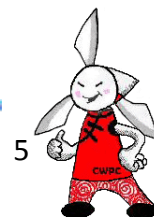
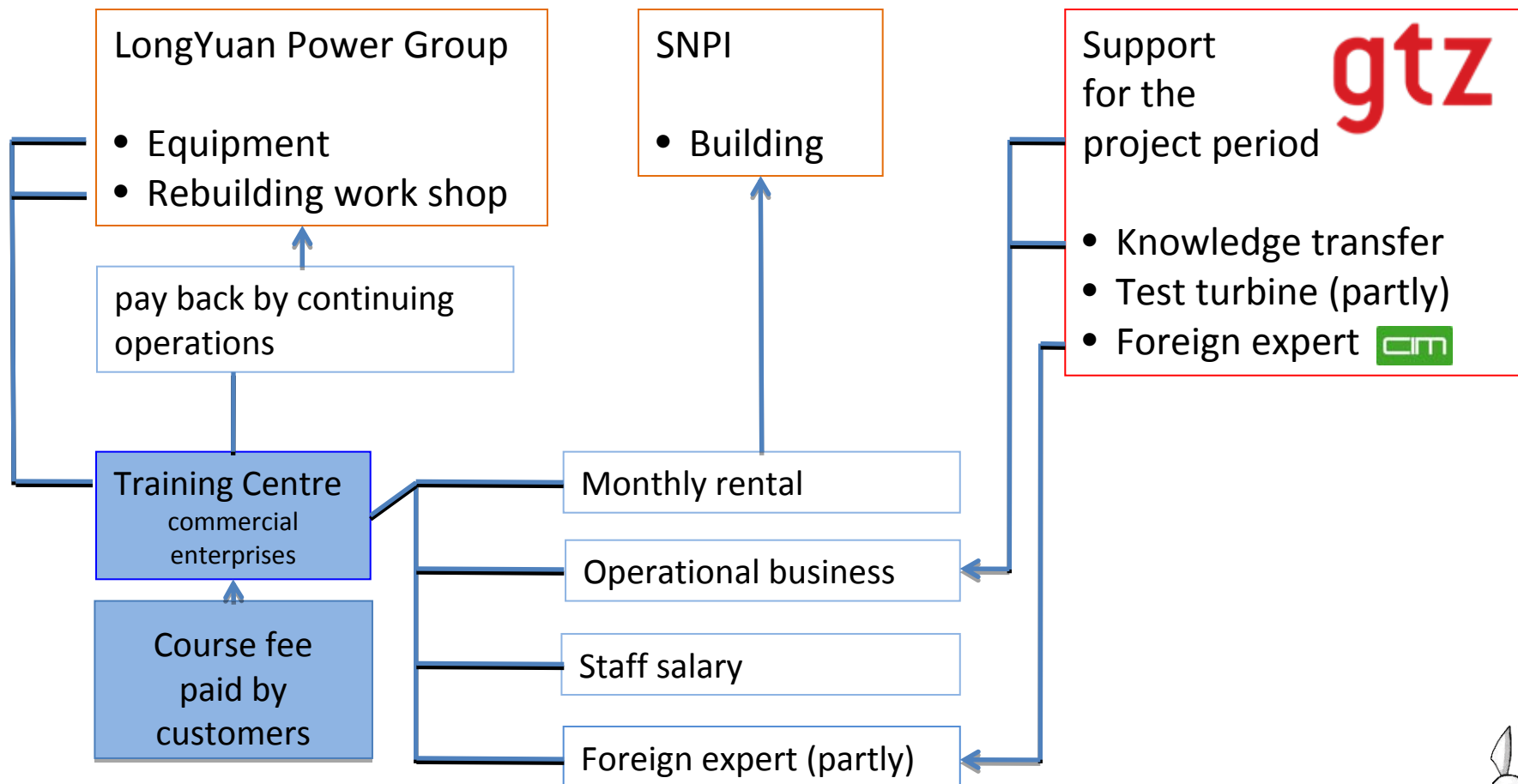
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## Suzhou LonYuan Bailu Wind Power Vocational Training Centre

### Investment





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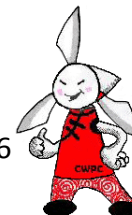
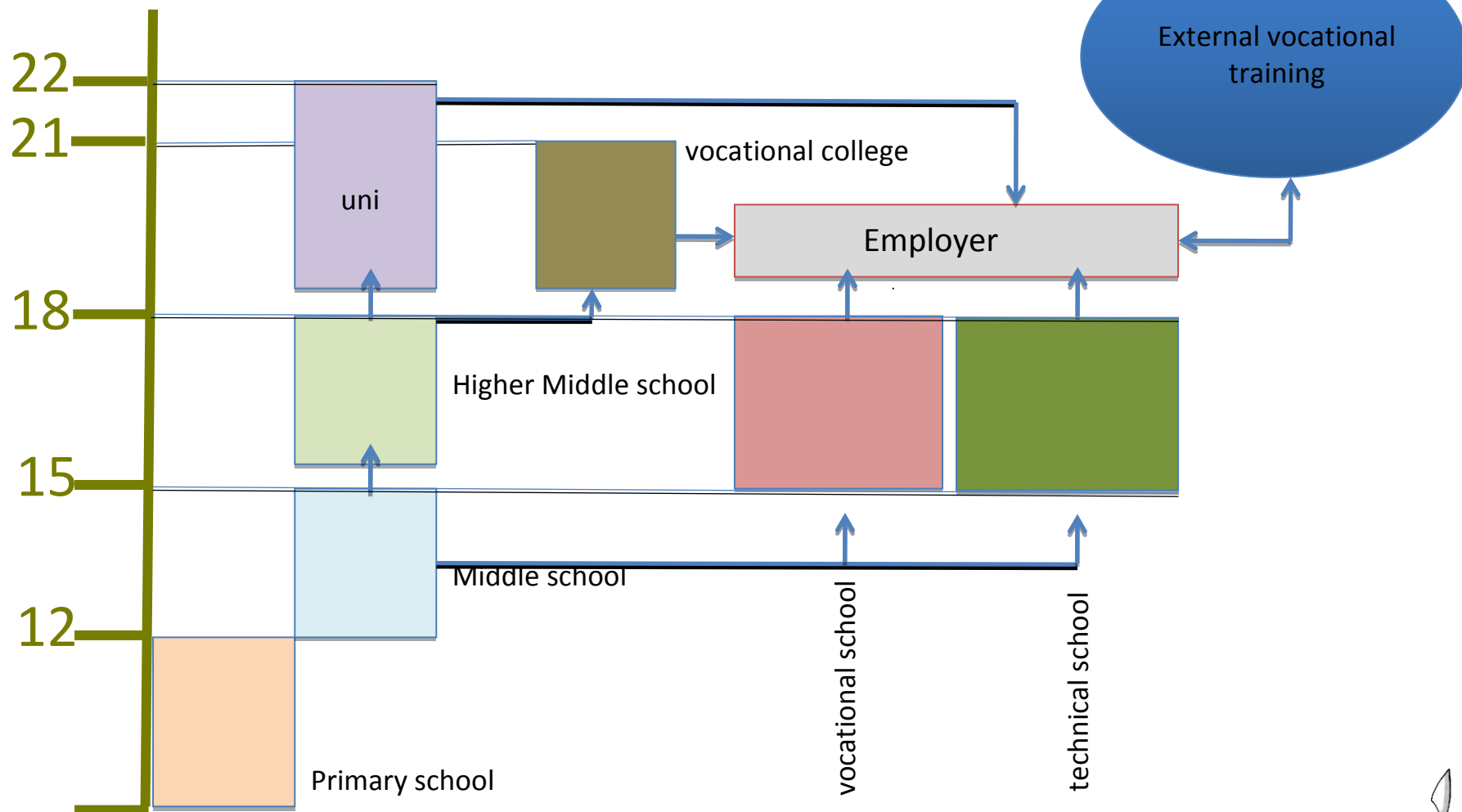
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## Education and training





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## Qualification needs

Field of



Mechanical Engineering



Hydraulics



Electro technology



Electronic Data Processing and Data Transfer



Control Technology



Fiber Composite Material / Rotor Repair



Fastening and Lifting Technology



Environmental Protection



Work Safety and Accident Prevention



Specialized Technical English





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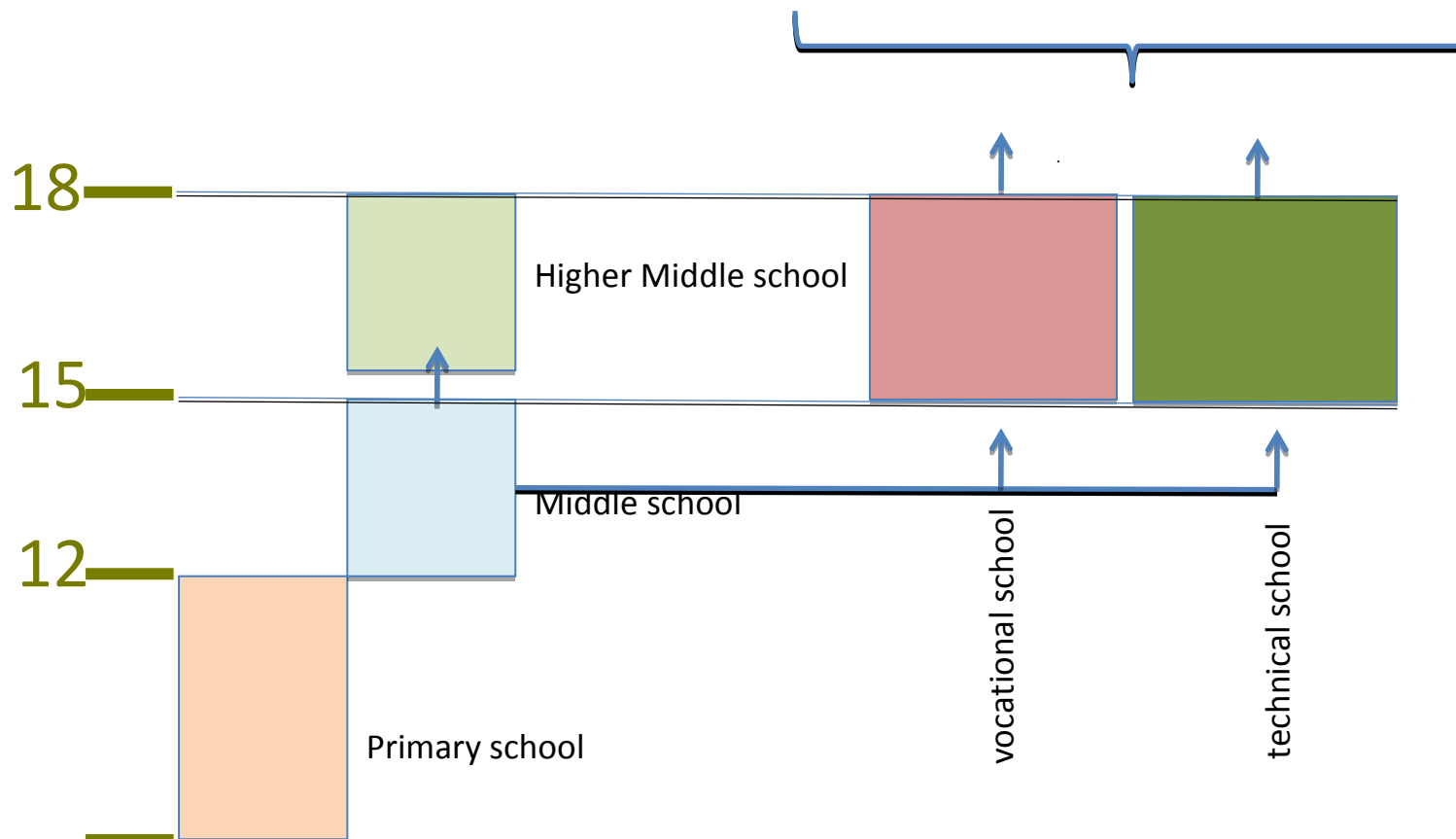


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## Entry requirements

## Qualification needs

Mechanics Electricians





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## Facility needs

- Class rooms
  - Multimedia
- Laboratory
  - Electric and Electronic technology
  - Hydraulic (proportional) technology
  - Fibre composite material laboratory
  - Training facilities for safety at height
- Work shop
  - Components of real turbine
  - Real Turbine







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## Suzhou LonYuan Bailu Wind Power Vocational Training Centre

### • Staffs background



- Engineer Mechanics
- Engineer Electro-technology
- Engineer Electronics and control engineering

Part time trainer from industry and institutes



### • Further training for staffs of training centre

- Training in cooperation with companies
- On side training
- Training for work safety and rescue by working on wind turbines (De, Cn, Sg)
- Electro-technology special training for Generator technique (Cn, Experts from De)
- Fibre Composite Material training for Trainers (De)
- Seminar for Didactic “new teaching methods” (Cn, Experts from De)
- 8 week study in Germany “Wind technology”

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## Equipment & training



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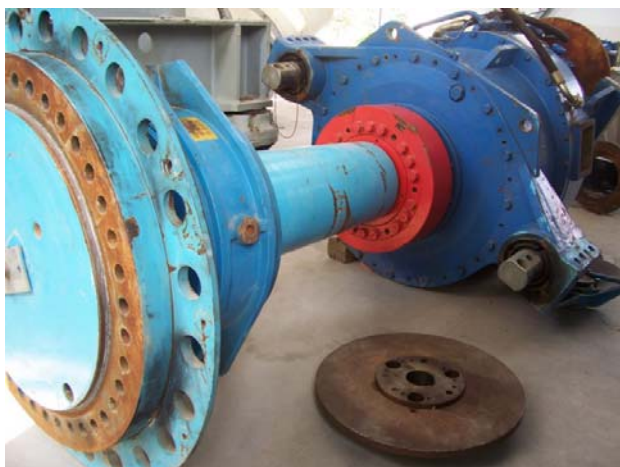
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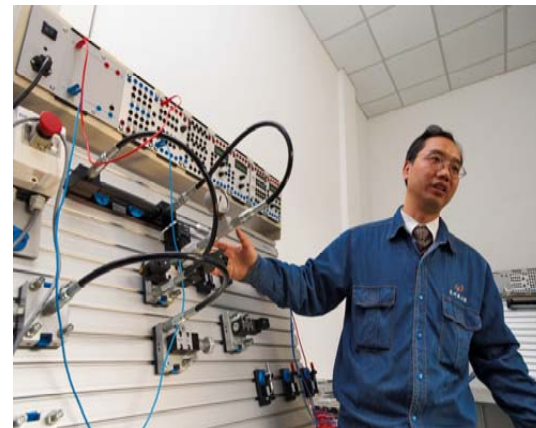
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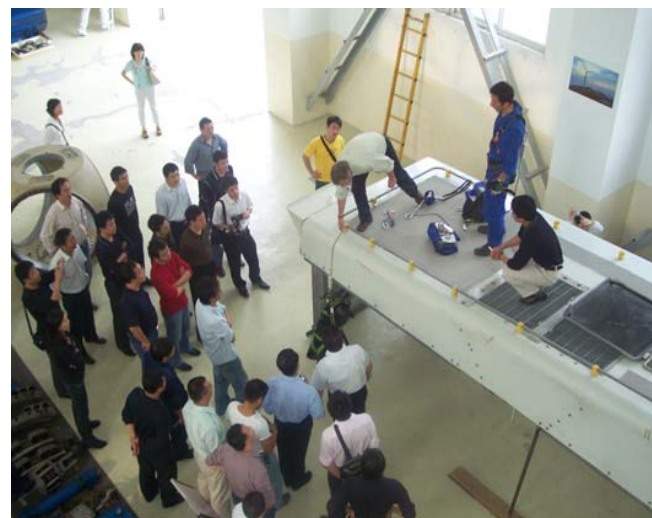
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## Equipment & training



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## Equipment & training



850 Kw wind turbine for Simulation a real turbine operation

Wind speed, Wind direction, Pitch angle, Torque, Grid failures,  
CMS by winergy, Troubleshooting





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## Provided training

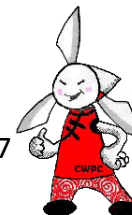
### Curriculum

- New staffs Incl. Office workers 8 weeks
- New wind farm staffs 12 weeks
- Short time courses generator technique 1 week
- Short time courses basics electro technique 1 to 4 weeks
- Short time courses mechanic 1 to 4 weeks
- Short time courses gearbox technique 1 week
- Control Techniques 1 week
  
- Safety training, working at height 2 Days
- Hooking and lifting 2 Days
- Examination training 1 week
- Fibre composite Materials in preparation



Participants from Suppliers, Operators and Manufactures

2744







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## Provided training

### Special seminar

– Engineer and management seminars

1 week

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with expert lectures  
from Germany

- Wind farm management
- Technical management, maintenance and monitoring
- Foundations: Loads, Failures analysis and maintenance
- Vibration on wind turbine O&M
- Technical operation and optimisation of wind turbines
- Life time of wind turbine components

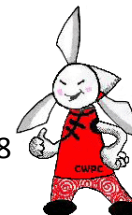
Participants from Suppliers, Operators, Designers and Manufactures

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## Trained employees

Period	2007 – 2009	2010
New employees	884	600
Employed workers	760	500
Engineers	156	69
Management		
	2007 – 2010	<u>Total</u> 2969





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Thank you for attention



Questions?

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Bundesministerium  
für Umwelt, Naturschutz  
und Reaktorsicherheit

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