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# Introduction on China's wind energy policies

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GAO Hu

Energy Research Institute of National Development and Reform Commission

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# Main contents

- Relevant policies on wind power development
- Wind power development after enforcement of <Law on Renewable Energy>
- Some problems in current wind energy exploration
- Summary

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# Implementing rules & regulations for wind power related law

- NDPC has taken the lead to formulate the following policies:
    - <Management regulations for electricity generation from renewable energy>
    - <Tentative management measures for price and cost sharing for electricity generation from renewable energy >
    - <Catalogue for the encouragement of development of renewable energy industry>
    - <Temporary measures of additional income regulation of renewable energy power>

Published medium and long term objectives of renewable energy development  
Assigned general survey on wind resource
  - Ministry of Finance has taken the lead to develop the following policy:
    - <Provisional management measures for special fund for development of renewable energy>
  - State Electricity Regulatory Commission:
    - <Supervision measures on electricity network enterprise for full procurement of renewable energy power production>
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# Other regulations and standards

- Besides above mentioned laws and regulations on overall development of renewable energy, there are also some specific documents:
  - <Notice regarding to some management requirements for wind power construction>
  - <Implementing opinions on development promotion for wind power industry >- some key tasks
  - <Provisional management measures for construction land use and environmental protection of wind power stations >
  - <Management measures for preparatory work of power plant access system of national electricity network companies>

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## Development of wind power industry after execution of <Law on Renewable Energy>

- Wind power market is expanded unprecedentedly
- Investment scale is increased continuously
- Manufacturing capacity of relevant equipment is strengthened

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# Wind power market is expanded unprecedentedly

- According to latest statistical data from Chinese wind energy committee, 1454 wind generating units and 1.337 million kilowatts installed capacity were increased in 2006 in China (Taiwan was not included), more than cumulative increments during last 20 years.
  - Only less than America, Germany, Spain and India, listed the fifth position in the world.
- Up to the end of 2006, the number of wind power station increased from 62 to 91, total 3311 wind generating units were installed and capacity reached 2.599 million kws
- Inner Mongolia, Hebei, Jilin, Xinjiang, Liaoning and Guangdong have grown to be large wind power provinces with installed capacity more than 200 thousand kws every province
  - Based on installed capacity, China has exceeded Italy and England and become the sixth largest wind power country in the world .

# Investment scale is increased continuously

## Wind power station exploration

- Last year, wind power began to earn a name in China and became investing target of large investment groups.
  - State own enterprises
  - Local enterprises
  - Foreign enterprises

## Equipment manufacture

- Major domestic equipment manufacturer started to produce wind generating units or spare parts.
- Foreign blower manufacturer began to set up exclusive or joint ventures in China.
- Domestic enterprises still lagged behind in technical level, production scale and market share, but they began to show favorable trend.
  - There are 36 enterprises that can produce large scale blowers including 4 foreign companies, 3 joint ventures and 29 domestic enterprises.

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# Problems in wind power development

## Wind resource

- Evaluation of wind resource is the foundation of stipulating wind power development plan and electric network plan as well as exploring and managing wind resource.
  - Appraisal of applicable wind resource is not accurate now.
  - Current wind resource evaluation results can not satisfy completely the demands of construction of wind power stations.
    - Survey and appraisal of onshore and offshore wind resource in combination of wind measurement data analysis and data simulated study.
    - Short term forecast of electricity production of wind power stations.
    - Research on meteorological safety system of wind power stations.
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# Problems in wind power development

## Technology and industry

- Self innovation capacity is weak and an integrated wind energy industrial system (industrial chain) has not been formed yet.
  - Nowadays, we have not grasped totally the gross design technology of large scale wind generating units (with installed capacity of million kilowatts) and also, we have not fully mastered designing and manufacturing technology of important spare parts yet. Our Self innovation capacity is still weak.
  - We still lack wind power technologies with self intellectual property.

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# Problems in wind power development

## Price of electricity

- NDPC has issued <Tentative management measures for price and cost sharing for electricity generation from renewable energy >, and stipulated that:

Pricing of wind power projects on network should follow the government guidance, the price standards should be determined based on bidding result by price management department of State Council .

- ❑ There is no clear schedule in the course of actual operation.
- ❑ Price fixed by wind power chartered projects is too low.
- ❑ Many enterprises regard wind power exploration as a strategic choice so they sell their wind electricity at very low price to capture market.

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# Problems in wind power development

## Network building

- Network building and management does not fit wind power development.
  - Northern, northwestern, northeastern areas
  - Eastern coastal areas
- Preparation work of wind power grid connection has not standardized and wind power has not been included fully in network construction planning.
- Cost-sharing and network construction

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# Problems in wind power development

## Output of wind power station is not clear

- Currently, all planning and statistical data are calculated based on installed capacity.
- Factors that affect actual power production:
  - Wind resource assessment and station site choice are still trying to find experience.
  - Reliability of domestic equipment is under test.
  - Network building in resource-rich regions is fragile.
  - Management experience of wind power station is limited.

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# Tariff and credit preferential policies have not issued

- Wind power has been listed in government encouraging area based on regulations of special fund for development of renewable energy
- Relevant departments of State Council are studying schemes to support wind power industrialization.

# Exploration & utilization objectives

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	<b>2010</b>	<b>2020</b>
<b>capacity on network</b>	<b>5 million kws</b>	<b>30 million kws</b>
Onshore projects	About 30 bases with capacity of 100 thousand kws and 3 bases more than 1 million kws	6 large bases
Offshore projects	—	500 thousand kws
<b>Capacity off network</b>	<b>75 thousand kws</b> ( 300 thousand units )	<b>150 thousand kws</b> ( 500 thousand )

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# Main tasks in the eleventh-five years

- Complete thorough survey, evaluation and planning of 50 million kws wind resource
- Establish initially a relative perfect wind power industrial system
- Develop technical and manufacturing capacity of wind power equipment with advanced technologies, self intellectual property and brand
- Set up technical service system that can perform functions of technical research, test and certification, experiment and monitoring
- Construct coordinated electricity network

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# Suggestions to near-term work

- Develop thorough survey and appraisal of wind resource
  - Based on existing survey documents, launch national thorough survey and evaluation activity of wind resource, build database of national wind power station projects, meet the needs of macroscopic station site selection and engineering planning and construction.
- Encourage research on electricity network planning
  - Support network planning and technical research that are suitable for wind power development and satisfy the requirements of large scale construction.
- Encourage R&D capacity building
  - Rely on research institutes and enterprises that have strong technical development ability, establish national R&D center of wind power generating units and components, give priority to construction of technical research and experiment facilities of generating units and spare parts.



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# Suggestions to near-term work

- Give support to equipment industrialization
  - Select several superior manufacturers of generating units and spares and give them support, especially encourage technical research, reform and demonstration activities of new products with self intellectual property, brand and with capacity up to million kws.
- Build national standards and certification system of wind power equipment
  - Consider comprehensively natural environment and resource conditions in China, stipulate technical standards that accord with actual situations and demands of our country, build basic facilities and team for wind power equipment testing and certification, set up testing and monitoring center.
- Strengthen management of wind power station construction
  - Based on national planning of wind power development and relevant regulations, execute strict management to wind resource exploration and project construction and avoid rash construction.

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# Summary

- Great importance attached by government
- Definite promotion policies
- Great market potential
- Obvious technical progress
- Some tasks such as resource survey, electricity network and industrial construction should be strengthened during the eleventh five years period

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# Thanks for attention

GAO Hu

Energy Research Institute

+86-10-63908468

gaohu@amr.gov.cn

[www.eri.org.cn](http://www.eri.org.cn)