National Policy, Strategy and Roadmap Study for China Small Wind Power Industry Development

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Background

The small wind power industry has been developed in China since 1970s, and flourished in 1980s. At the beginning, the small wind turbines were applied in rural electrification which focusing on poverty alleviation projects in these areas, and then small wind turbine applications were expanding and deployed to the north pasturing areas, rural countryside, isolated islands and inland lakes. With the implementation of "Brightness Programme" and "National Township Electrification Programme (SDDX)", about 1.5 million farmers and fishers living in the rural areas without electricity were benefited from small wind power, while small wind power industry itself was developed rapidly during that period. Small wind power industry played a very important role in China rural electrification, maintaining steady of frontier as well as building a new socialist countryside and constructing harmonious society. Besides that, recently, China small wind power application is shifting from rural electrification oriented to the regions of city streets illumination and telecom stand alone powers. It is developing rapidly in these new application fields. Furthermore, new application fields are under developing.

With the global climate change and energy saving drawing more and more attention, China government is promoting renewable energy applications with great efforts through series of incentive policies publication. While, there is seldom incentive policies covering small wind power industry.

What is the status of China small wind power (SWP) industry? What are the obstacles faced by SWP industry? What are the prospects of SWP? What is the strategy of SWP industry development? All of these are the questions asked by China National Energy Administration (NEA) waiting for answers of the project team.

These questions also showed a sign that the role of SWP industry in energy structure has been recognized by the NEA. The NEA is considering how to promote SWP industry to develop in China.

With the mission of finding answers to the above questions, sponsored by REEEP, this project has been carried out and implemented by

Purpose:

- Survey about China and Global SWPI
- Survey about situation of SWP in DG (distributed generation)
- Conduct a deep technical and economical analysis of both on and off-grid applications of SWP
- Develop elaborate policy/strategy recommendations to China government.

Main activities:

In order to implement this project successfully, the project team made a large quantity of effective works, communicated with government, industry and research institutes through

kinds of methods like on-site investigation, questionnaires survey as well as workshops. With these activities, the project related groups were aware of this project and participated in it in deep.

- In Sep., 2009, with scientific designed investigation method and questionnaires, on-site survey to small wind turbine manufactures and users were carried out:

  - 7 typical small wind application cases were chosen as investigation targets: Yadan Geopark in Dunhuang, Gansu province; pastoral area and microwave station in Inner Mongolia; Honghu lake in Hubei province; street lamps in Guangzhou; oil field in Dongying in Shandong province, as well as Wal-Mart's logistics center in Tianjin. This survey made deep case studies to various application forms of the small wind power, including small wind power is developed as public and living power supply in rural non-electricity areas, as movable communication power supply, as off-grid power supply to inland lakes, as city view lighting and distribution power supply etc.;

  - 9 typical domestic small wind turbines manufactures were chosen to be surveyed on-site. These manufactures production and sale were investigated in details. This investigation helped the project collected dozens of first-hand datum related to the industry.

  - The whole survey target regions covered 11 provinces around the nation. The journey was up to tens of thousand kilometers. Accompanies with the investigation, an investigation documentary video was finished. In this video, the status China small wind power industry was reflected in a full and true manner.

- In Nov., 2009, the project held a special workshop in the 2009 National Wind Power Equipment Industry Annual Meeting and Wind Power Industry Development Seminar. More than 40 participants who were the national small wind power technology and industry experts, researchers and delegates of domestic small wind turbine manufactures participated in this workshop. The project investigation and datum analysis results were published in this workshop. Also, the comments and suggestions to China small wind power industry development from the participants were communicated in this workshop;

- Based on the investigation and workshop, the <Report on Global and China small wind power industry status, market and trends> were compiled by the project team;

- In order to reflect expectations to the government small wind power industry incentive policies from the industry stakeholders in the maximum degree, the project team collected the suggestions and comments from whole small wind turbines manufactures and related organizations nationwide in various ways (questionnaires, telephone, email and workshops). Feedbacks received from more than 40 domestic small wind turbine manufactures;

- Based on the industry status investigation and existing policies analysis, considering China real situation and condition, with the project team's 1 year hard working, the <Report on China Small Wind Industry Development Roadmap & Policies Suggestions> was finally finished by Mar., 2010. On the 10th Mar., 2010, a review workshop to collect comments to this report (Draft) was held in Beijing. More than 30 delegates including officials and experts from national governments like the NEA, REEEP PMO, Chinese Renewable Energy Society, National Ministry of Agriculture,

the National Wind Power Machinery Standardization Technology Committee as well as testing and certification related organizations/institutes participated in the workshop. The previous work and achieved outputs were highly appreciated in this workshop by the participants. Also, the participants contributed several valuable comments for the report improving;

- □ By April 2010, the project final outputs and achievements will be disseminated officially to the public on the 4th China (Shanghai) Wind Energy Exhibition and Conference;
- □ The research output <Report on China Small Wind Industry Development Roadmap & Policies Suggestions> (simplified version) will be delivered to the related departments of central governments to promote the incentive policies publication and execution the suggestions after this project;
- □ The outputs and experiences also will be disseminated and communicated worldwide through the REEEP project leader meeting which will be held in Brazil during the Jul., 2010.

Achievements and effects:

The deliverables of this project is including: <Status, market and trends of Global and China small wind power industry Report>. 2010; <China Small Wind Industry Development Roadmap & Policies Suggestions Report> and its simplified version, 2010, and REEEP China small wind power industry status investigation documentary video, 2010 which is reflecting China SWP industry status vividly.

The above outputs (reports) analyse the development history, status, trends and obstacles of China and international small wind power industry; conducted technical & economic analysis on both on-grid and off-grid small wind power application scenarios, proposed specific policy and strategy recommendations to Chinese government to promote small wind power industry development.

For the small wind power applied as a part of renewable energy, especially for the small wind power DG, it is suggested to be managed by National Energy Administration (NEA), it should be included in the renewable energy long term development planning, enhancing the small wind power industry position as a new in the energy industry stimulation program.

To the issue of policy, taking the conditions of China and the international incentive policies/mechanism as references, it is suggested to develop the following policies to promote China small wind power industry:

- ➢ Publishing a regulation of “Encourages small scale renewable energy distribution power development”, which allowing small wind turbines to be connected to the power grid;
- ➢ Developing a certification system with strict requirements to small wind turbines manufacturers, and enterprises and employees who will be engaging in the project development/construction;
- ➢ Establishing a rural un-electrified area electrification plan argumentation mechanism.

To the issue of industry self capacity building:

- Establishing and modifying the complete industry standard system, and the standards should be in accordance with the international standards;
- Carrying out mandatory testing (including lab testing and outdoor on-site testing);
- Building the third party certification system and qualified products identification system providing a unified measure for the public choosing small wind products;
- Implementing more strict market entrance requirements.

To the issue of stimulating mechanism, it is suggested that:

- Providing subsidies to those turbines installed in rural electrification;
- Taking small wind turbines into the list of "agriculture machine subsidy"
- Developing rules on small scale on-grid renewable energy power measuring method;
- Providing encouragement to the enterprises recruiting employees to produce renewable energy devices;
- Encouraging export

To the issue of promoting of small wind turbines applied as DG (connected to the power grid by the consumer side), the following sequencing strategies are suggested:

- Conducting pilot demonstration projects in selected regions collecting first-hand technical and economic data of small wind power grid-connection and providing scientific references for the government decision;
- Publishing policy allowing small wind power to be connected to the power grid but not feed in (without any subsidy);
- Taking net metering experiment;
- Purchasing all of the power generated small wind DG.

To the issue of guarantee system capacity building, it is suggested that:

- Identifying and providing capacity building to the public technical R&D and experiment platform;
- Developing human resources training and education systems;
- Enhancing public awareness and information communication system.

The activities and outputs of this project have and will continually make positive to China SWP industry development:

- Through the project, small wind power industry has drawn the China NEA's attention. The proposed industry development roadmap and policies suggestions will be an important reference for the government decision;
- Promoted by the project, it is expected that the small wind power industry development goal will be listed into the China national 12th "Five-year Plan". China small wind power industry position and development will be greatly promoted;

- ☐ The project laid a foundation for the development of China small wind power industry development strategy and policies. The application of small wind power applied in distribution generation will be especially stimulated;
- ☐ The small wind power turbines applied in rural electrification will be promoted continuously by the project. By this, the residents living conditions in China will be improved and their incomes will be increased;
- ☐ The suggestions and activities proposed by the project will be continually pushed by China Wind Energy Equipment Association continuously after the project;
- ☐ Through demonstrations projects, the small wind power applied as distribution generation will be promoted. The small wind power industry will be strengthened through new deployment sectors exploitation, production costs reduction, production quality control and metering mechanism establishment;
- ☐ The establishment of industry standards and testing & accreditation systems will be promoted.