

The Danish government opens the doors to Chinese wind sector

The joint effort by the Danish Energy Agency (DEA) and the Danish Trade Council in export of Danish energy technology and solutions is paying off. Last month Vestas made an important strategic move well into the Chinese energy market.

For more than a year the Quality Wind project has assisted Danish companies in connecting with the Chinese market for wind turbines and components. The venture is part of a pilot project initiated by DEA and <u>the Danish Trade Council</u> in close cooperation with the Danish wind business in China and two large Chinese developers of wind projects (<u>Datang</u> and <u>SDIC</u>).

As an outcome of the initiative, <u>Vestas</u> on October 16th signed a Letter of Intent (LOI) with Datang Renewable, which commits both parties to enter commercial negotiations regarding repair of existing Vestas turbines and continuous operation and maintenance of these turbines located in two existing wind farms. The aim of the cooperation is to demonstrate how good operation and maintenance practice and use of quality components can improve the performance and business case of Datang's windfarms. Further, Datang Renewable agrees to give priority to purchase products and services from Vestas to achieve the company's goal of becoming a leading operator of wind power plants in China using the best global know-how offered by Vestas. .

"Vestas greatly appreciates being part of the close collaboration between the Chinese and Danish governments. The LOI with Datang is a result of strong government support under the Quality Wind program and is an important step in the direction of strengthening Vestas presence in China and releasing the full potential of our Chinese customers' renewable energy business", says Christian Venderby, Group Senior Vice President & Head of Vestas Global Service.

Six Danish sub suppliers, including: Mita-Teknik, C.C. Jensen, Hove, Danfoss,

Dafa and Lund & Sorensen, have also initiated negotiations with the other energy company, SDIC Power. Some of these Danish companies expect to be able to install and test their solutions on SDIC's turbines in 2016.

Roundtable and seminar

The Danish companies and Chinese developers also participated in a roundtable organized by the DEA and the Danish Trade Council on October 16th. At the roundtable Vestas, Datang Renewable, Mita-Teknik, C.C. Jensen, Dafa and SDIC Power discussed some of the major issues to be addresses in the Chinese market.

The current approach to operation and maintenance (O&M) in China is to a large extent limited to trouble shooting after failure occurs. The Chinese side was eager to improve O&M by adopting concepts such as preventive and predictive maintenance and Vestas can now offer portfolio support to wind turbine owners on these approaches by supporting management and planning of O&M but leaving execution to the owners own staff.

Both suppliers and owners agreed that improved training of staff was needed in China. It was suggested that the optimal impact would be achieved through an industry wide approach to training where manufactures, owners and government join their efforts to improve to qualifications of the work force. Denmark has been successful in using such an approach and has implemented specialized vocational training targeted the wind industry that China can use as a source of inspiration.

Finally, the issue of 'price versus quality' of O&M services was discussed. Currently, the bidding procedure often result in the cheapest option winning and option offering a better value proposition loose because up front cost are higher. The Danish suppliers suggested that tenders would make O&M service providers accountable and there should be penalties if service providers did not deliver quality solutions.

Following the roundtable, O&M was discussed with about a hundred attendees at a seminar organized by the DEA, Investment in Denmark, Offshoreenergy.dk and the Danish Trade Council. The day ended with a VIP dinner and networking.

The wind potential cannot be ignored

With 114 GW installed wind capacity and an increase of 23 GW from 2013 to

2014, China is by far the largest market for wind turbines and it is expected that China will remain the largest market in and beyond the next five year plan period.

In 2014, China had an annual production of 153 TWh - a production that will increase in size the coming years. In comparison, Denmark produced about 13 TWh from wind in 2014. This proves that improvements of even just a little percentage on such a massive scale will have considerable potential for the climate as well as for Danish export.

The Chinese government is following every step

The Chinese <u>National Energy Administration (NEA)</u> has been following the development of the Quality Wind project with great interest. Especially since the Danish experiences with operation and maintenance prove that windmills actually can produce close to the theoretical potential, even after the expected lifetime of 20 years.

It is essential to involve the Chinese government in the process of improved regulatory framework that can ensure increasing performance of Chinese wind turbines. Government involvement could include standard for operation and maintenance, specialized education of wind turbine technicians and more transparency about performance data of turbines.

<u>About the Danish Energy Agency's international cooperation</u>, <u>About the</u> <u>Danish-Chinese cooperation</u>

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