



# China: Bioenergy – a hot topic for the Sino-Danish energy cooperation

While China looks to biomass and bioenergy as an area of increased focus and priority, Denmark is ready to deliver inspiration to China with world-leading bioenergy research and industrialization.



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In the last four decades Denmark has been a frontrunner within clean energy and environmental solutions, including bioenergy. Renewable energy from biomass plays a vital role to achieve the Danish ambition of reducing domestic use of fossil fuels to zero percent by 2050. Today biomass accounts for approximately 70% of the total renewable-energy consumption in Denmark.

## Large bioenergy potential for China

As a result of the Danish experience in the field, the Sino-Danish energy cooperation also focuses on bioenergy, both within solid biomass for combustion, biogas and biofuels. As a part of this cooperation Danish Energy Agency (DEA) representatives participated in the China International Bioenergy Conference & EXPO 2014 from 16-19 September.

Several hundred representatives from more than thirty countries participated in the conference and exhibition to discuss the technology, policy, marketing, investment and financing aspects for promoting the development of bio-energy industry in China.

Among the presentations, Professor Qin Shiping from the China National Renewable Energy Centre (CNREC) shared the draft of the Chinese bio-energy roadmap that is jointly developed by CNREC, the Chinese Academy of Sciences and the Tsinghua University with expert assistance from DEA. Preliminary findings show that the potential biomass resources in China are more than 14 exajoule, equivalent to one-seventh of the total energy

consumption in China. If just 60 percent of the biomass potential can be utilized for energy purposes it is estimated that it will create 3.4 million jobs, increase farmers' income by 200 million RMB/year and reduce emissions with as much as 700 million tons of CO<sub>2</sub>eq. It seems clear that there is a significant potential for utilizing biomass for energy in China.

### **Danish biomass companies can inspire China**

During the bioenergy conference DEA also gave presentations on biomass heating applications in Denmark. In Denmark biomass energy within heating and power delivers 13% of the total electricity consumption and 21% of total space heat consumption. The utilization covers a wide range of biomasses that is used at plants, which differ greatly in scale, since advanced technology has been developed for small, medium and large scale plants.

Biomass heating was also the primary topic for a DEA presentation held at the Sino-Danish Bioenergy Cooperation seminar, a special event leading up to the bioenergy conference. The large seminar was arranged by Invest in Denmark and was attended by more than 100 academic researchers and company representatives from both China and Denmark.

Top-level researchers and the most innovative companies from both China and Denmark shared their expertise and opinions on bioenergy technology development at the seminar. In this regard, the seminar also served as a platform for developing further cooperation between Denmark and China and to highlight the opportunities for bioenergy investments in Denmark.

### **Boosting Sino-Danish bioenergy cooperation**

DEA's presentation gave an example of business opportunities for small scale heating plants using agricultural residues. These small scale heating boilers are set to play a significant role in the Chinese heating sector where a lot of new boiler plants are prohibited from using coal but have plentiful of local biomass resources, like straw, available. Many Danish companies have decades of experience in collecting, storing, handling and combustion of straw and have developed specialized and efficient equipment over the years. Consequently, there are excellent business opportunities for Chinese companies and investors to enter into partnerships with Danish companies, both in the primary industry of agricultural sector utility and for industrial companies in heat boiler technologies.

The experience and impression from both the conference and the seminar was

that there is real potential in further expanding the Sino-Danish cooperation on bioenergy - both between authorities within policy and regulations and within commercial products and investments.

In this way, Danish bioenergy experiences can hopefully keep inspiring the new Chinese focus on biomass.

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