



China: Sino-Danish project develops generic guidelines on renewable energy heating in China

In the cold and windy Heilongjiang province in north-eastern China, the Danish Energy Agency and the Chinese National Energy Authority are co-operating on a green district heating project. The project's findings show great potential in energy renewables.



The north-eastern region of China is rich in wind and biomass resources. However, local wind power struggles with curtailment issues and faces stiff competition from low-cost and abundant coal reserves in the region making it difficult to introduce biomass as a fuel despite its great advantages as a clean renewable fuel.

Therefore Heilongjiang's Yilan Green County is now being turned into a demo-area for a joint Sino-Danish cooperation with the perspective of developing national generic guidelines on how to plan efficient district heating in China and how to integrate more renewables like straw in the heat supply.

This January the project research team presented a report on the first preliminary findings to both the local government, representatives from the Chinese National Energy Authority (NEA) and a Danish delegation including the now former Danish Minister for Climate, Energy and Building and members of Danish Parliament. The first findings show that utilizing the rich straw resources from the local corn production could reduce the annual coal consumption for heating by 260,000 tons a year.

The coal used in the heat supply today is provided locally from an open pit coal mine. Switching fuels from coal to biomass will reduce the emissions of CO₂ by as much as 700,000 tons a year while also improving the air quality by cutting emissions of sulphur, nitrous oxide and dust by 75 percent. By putting a price on biomass local farmers could see an increased income by as much as 165 million RMB from selling the straw which is burned as crop residue in the fields today.

The now former Danish Minister and the Danish MPs visited Yilan County and showed a keen interest in the preliminary findings while sharing the enthusiasm expressed by both local Governor He and Deputy Director General Liang from NEA. NEA is very interested in distilling the findings and experiences from Yilan with a view to develop generic national guidelines that can be applied to many other similar Chinese counties. It is estimated that there are as many as 2000 counties in China with similar opportunities as in Yilan.

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Facts on Yilan:

Yilan County is rich in agriculture and forestry throughout the County's 4,600 square kilometres. Roughly one-fourth of the 400,000 people lives in the central town of Yilan and are supplied by district heating from a coal-fired heating plant.

The County is part of the Chinese Green Energy County Programme and their goal is that renewable energy in the heating supply will account for 50% by 2020 - and this ratio should reach 70% in 2030.

Current coal consumption: 300,000 tons of standard coal equivalent

Installed wind capacity: 400 MW

Curtailment/abandoned wind: 168 GWh/year (~20% of total power generation)

Biomass resources: 650,000 tons of corn stalks a year.

Goals of the Yilan project:

- Reduce air pollution & coal consumption
- Learn from Danish RE experiences
- Develop business models and policy measures for RE heating
- A demonstration project for generalising small town RE heating planning and scale up experiences to other parts of China.

Background on the Sino-danish pilot projects:

The pilot project in Yilan is one of three Sino-Danish pilot projects in the north-eastern Heilongjiang province. The two other pilot projects focus on how to integrate more of the wind power that is currently not used e.g. by using it to supply heat in the local district heating networks.

Denmark has 30 years of experience in planning energy efficient and cost effective district heating to include renewable energy like straw, wood and solar and the aim of the Sino-Danish cooperation is to let the administrative and regulatory policy experiences from the Danish Energy Agency inspire Chinese authorities in making the transition towards a greener future.

The Danish regulatory experiences with integrating renewable energy into the energy system are key to the three pilot projects initiated in north-eastern China. Work on the three pilot projects is a close cooperation between the Chinese National Energy Authority, NEA and the China National Renewable Energy Centre.

Read more:

Factsheet: [Pilot project in Yilan County - Biomass in the district heating supply](#) (also available in Chinese)

[Information note on Northeastern China](#) (only available in Danish)

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