

Nov 10, 2014 01:00 CET

China: New scenario research shows the way forward for China

Danish inspired scenarios show that China can cut more than a third of its CO2 emissions despite a six fold increase in the energy consumption by investing more in solar and wind energy.

In 2009 Chinese politicians made a strategic choice of investing 738 billion dollar in clean energy by 2020 to deal with the air pollution, the negative climate impact and to become increasingly self-sufficient in terms of energy production.

Since 2005 China has invested heavily in renewable energy, especially solar and wind energy. With 77 GW wind power and 19 GW solar power installed in the Chinese grid and plans of further installing 18 GW wind power and 12 GW solar power every year in the in the coming years, China is by far the biggest renewable energy producer in the world.

At the moment, the China Renewable Energy Centre (CNREC), which is partly Danish funded, is completing a series of scenarios for the future Chinese energy system, which will be presented to the National Energy Administration in 2015. The scenarios focus on making the Chinese energy system more sustainable by increasing the amount of renewable energy and by lowering the impact on the environment, while at the same time, keeping a reasonable economic growth.

With the assistance of Danish experiences, CNREC scenario analysis show that China can have as much as up to 90% renewable energy of the total electricity production in 2050. It is mainly the extension of solar and wind energy that can be enlarged, since the largest renewable energy post in China, water power, has reached its limits. The 90% renewable energy goal in 2050 will take a doubling of the current solar and wind construction level, but the challenge is not the construction, but rather to get the electricity transported from the sunny and windy northwest of the country

to the populated and energy consuming southeast.

The initial estimates from the scenario analysis show that investing heavily in renewable energy has an added cost of 10-20%, but that it would take a change in the regulatory frames, which at the moment is benefiting the use of coal on the expense of solar and wind energy.

CNREC base its scenarios on the methodology that the Danish Climate Commission in the past decade successfully has used to improve and develop the Danish energy system in order to become fossil free in 2050. The key to the Danish success, and the reason why there is a lot of international interest in the Danish methodology, is Denmark's ability to think long-term and to integrate broad energy systems in terms of production, demand of energy and cost efficiency.

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The Danish Energy Agency is responsible for tasks linked to energy production, supply and consumption, as well as Danish efforts to reduce carbon emissions. The Agency is also responsible for supporting the economical optimisation of utilities that in addition to energy includes water, waste and telecommunication.

We are also responsible for user conditions, supply obligation and telecommunication statistics, as well as water supply and waste management.

The Danish Energy Agency was established in 1976, and is an agency under the Ministry of Climate, Energy and Utilities.

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