Danish Energy Agency

China: Danish footprint on the Chinese RE development

The finalisation of the Sino-Danish Renewable Energy Development Program marks the significant results of 10 years of RE development support from Denmark to China. The RE cooperation continues with strong ties between the two countries.

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After 10 years and two large development programs the cooperation between China and Denmark on renewable energy is entering a new phase. From 2005 to 2010 the Sino-Danish Wind Energy Development Program (WED Program) helped China to become the largest wind power country worldwide. From 2009 the Renewable Energy Development Program (RED Program) took over with focus on policy strategies and capacity building for the Chinese governmental institutions. The RED Program will be concluded by the end of 2014 after a successful implementation where all the expected development goals have been fulfilled.

The most visible outcome of the RED Program has been the establishment of the China National Renewable Energy Centre (CNREC) as a Chinese think tank and research hub within the Energy Research Institute under the National Development and Reform Commission. CNREC has become one of the major sources for the Chinese policy makers looking for advice on RE development targets and policy measures for supporting the deployment of wind, solar and bioenergy in China. The centre has around 35 experts working with long-term development research in the Chinese energy system, on technology road-maps for the different technologies and they are also having substantial cooperation with international energy organisations like IRENA, IEA and other RE front-runner countries like Denmark, Germany and USA.

The development of renewable energy in China has been quite extreme the last 10 years. The capacity of wind power has grown from 1300 MW in 2005 to 77200 MW by the end of 2013, and solar power has grown from zero to 19400 MW. But even with this massive development renewable energy still covers less than 10% of the total energy consumption in China today.

CNRECs analyses of the long-term development show that renewable energy potentially will be able to cover more than two thirds of the total energy consumption and more than 90% of the electricity production in 2050. Such a development will significantly reduce the CO2 emission from energy production in China and also bring the local pollution to a much more sustainable level compared to the massive pollution levels that China' s big cities are facing today. Furthermore, this development would be economic feasible, taking into account the cost from a continuation of a heavy use of polluting fossil fuels.

But CNREC does not only create visions for a future "Beautiful China". It also gives concrete advice and recommendation for policy measures to remove barriers for the deployment and integration of renewables in the Chinese energy system. Subsidy policies, quotas for RE development, reduction of curtailment of wind power and financing of renewable energy subsidies are among the latest research topics conducted by CNREC which is being directly fed into the Chinese governmental decision system.

Today, nearly three years after the formal opening of CNREC, the centre has become a national and international highly respected research centre with a well qualified staff and state-of-the-art research methodologies and tools. The support from the Sino-Danish RED program has been a valuable boost to the centre' s rapid development, not least the cooperation between CNREC and the Danish Energy Agency. Fortunately, the cooperation between CNREC and the Danish partners will continue after the finalisation of the RED Program. A joint work program for 2015 and 2016 has been defined, including a major research program where also the US National Renewable Energy Laboratory will contribute. The inspiration from Denmark will therefore continue to have a substantial influence on the necessary Chinese energy revolution, transforming the energy system from dirty coal to clean renewable energy to the benefit of both China and the world as such.

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