



CHINA: 12 MW BIOMASS PROJECT IN LIAONING PROVINCE



GENERATING ADDITIONAL INCOME FOR FARMERS

GREEN ELECTRICITY FOR 61,000 CHINESE HOUSEHOLDS



KEY FACTS

China is one of the world's fastest growing economies mainly as a result of an astounding expansion of heavy industry and urbanization that requires huge inputs of energy. At present this energy derives mostly from coal and other fossil fuels, of which China has significant national reserves. Unfortunately, most of the coal-fired power stations in operation are relatively old and emit large amounts of smoke, carbon dioxide and sulphur into the atmosphere making China the world's largest emitter of greenhouse gases.

THE PROJECT

This project involves the implementation and operation of a 12 MW biomass-fired power plant. The main fuel is residual corn-straw which is being collected in the surrounding area. In total, the power plant consumes 110,000 tons of biomass per year. The biomass would otherwise have been burnt or left to decay in open spaces without utilizing the energy contained in it. The power plant generates 81 GWh of clean electricity every year which is delivered to the Northeast China Grid. The electricity generated by the project is enough to supply 61,000 Chinese households for one year and is expected to displace grid electricity generated from fossil fuels and reduce GHG emissions by an amount of approximately 69,000 tCO₂e tons of carbon dioxide equivalent per year for the duration of the project activity.

SUSTAINABILITY BENEFITS



Financial: Local farms receive additional income from selling biomass residues such as corn straw or cotton stalk. In 2013, payments to farmers amounted to about 4.7 million Euros.



Jobs: The power plant permanently employs 144 people, 65 thereof from the local community. The wages paid to employees are above the average in Liaoning Province. Total wages paid amounted to 700.000 Euros in 2013.



Avoided Pollution: In the absence of the project, agricultural waste would have been burnt in the field or left to decay. The decay of biomass can emit substantial amounts of methane into the atmosphere. This additional benefit has not been considered in the emission reduction calculations, though.



Environmental Quality: The ash generated from the project is used to produce fertilizer and improve the soil condition of farmland. By feeding back the ash to the farmland the collection of the biomass won't impact the soil organic content, carbon content or soil fertility.

Location:

Tieling City, Liaoning Province,
P. R. China

Project type:

Renewable Energy – Biomass

Project standard:

Gold Standard

Total emission reductions:

»» 69,000 t CO₂e p.a. ««

Project start date:

March 2012

Project partner:

National Bio Energy Co., Ltd.

Validator:

LGAI

Verifier:

LGAI





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TECHNOLOGY BRIEF - HOW IT WORKS

Biomass is biological material from living or recently living organisms such as wood, waste, or alcohol fuels. Sometimes, biomass is grown specifically for generating electricity or heat and others readily available agricultural waste or by-products are used. During combustion, biomass releases only the amount of carbon bound during the growth of the plants. As long as the extraction of biomass is lower than the annual growth, biomass can be considered a carbon neutral fuel. The biomass is typically fed into furnaces and is converted into heat energy which is in turn converted into electric energy and fed into the grid. In addition, by burning the biomass instead of putting it into a landfill, a biomass project can also prevent the emission of methane.



Project standard



The Gold Standard is an award winning certification standard for results based project finance and is recognised internationally as the benchmark for quality and rigour in certifying environmental and socio-economic project outputs. Established in 2003 by the World Wide Fund For Nature (WWF), the Gold Standard today is trusted and endorsed by NGOs, governments and multinationals including United Nations agencies worldwide.



First Climate Markets AG
Industriestr. 10
61118 Bad Vilbel - Frankfurt/Main
Germany
Phone: +49 6101 556 58 0
E-Mail: cn@firstclimate.com

For more information on other projects in our portfolio please visit our website:

www.firstclimate.com