Sustainability action · Project Renewable Energy and Energy Efficiency

Bachu biomass to energy, China

The Bachu power facility uses locally sourced surplus biomass from cotton harvesting and agroforestry to generate sustainable electricity for China's western rural areas.

Project

The project involved the installation of a 48t/h biomass combustion boiler and a 12 MW power generator, driven by a new state-of-the-art extraction condensing steam turbine. The newly built power plant is fuelled entirely with locally sourced biomass residues (cotton stalks and woody residues). The facility generates on average 59,000 MWh of clean electricity per year, which is fed into the Northwest China Power Grid. Prior to project implementation, there was no power generation unit at this site. At the time, the electricity was supplied by the regional grid, which is dominated by fossil-fuel fired power plants. The project thus results in the substitution of fossil fuels and the strengthening of the regional electricity grid. It also helps to avoid the regular power failures experienced during the cotton-planting season.

Traditionally, cotton growing represents the region's main economic pillar. Cotton stalks and agroforestry residues are collected, providing highly needed additional income for thousands of small-scale farmers and their families. Before the implementation of the power facility, this valuable biomass was considered as waste. It was dumped or burned in an unregulated manner. Now, it is collected and transformed into carbon neutral energy for the wider region. Ash is given back to the farmers as fertilizer free of charge.

1072EN, 05.2015

Location

The power plant is located in China's westernmost province of Xinjiang (Uyghur Autonomous Region) near the border with Tajikistan and Kyrgyzstan. Its old capital, Kashgar, surrounded by dust, sand and mountains is situated along the historic Northern Silk Road. The region's rich culture has a strong tradition of trade and transfer between East and West.

Project achievements

Socio-economic impact

- **The plant generates 59,000 MWh per year**, providing approximately 14'000 people with clean electricity.
- **During construction and operation of the plant, a total of 120 jobs providing 720'000 USD in annual wages to locals**. Half of these jobs were given to minorities and one quarter of the staff are women.
- **2'500 farmers receive 4.5 Million USD in income every year** from the sale of the biomass that was considered as waste before.
- **The project owner spent 4'000 USD in local social and educational activities**, such as scholarships provided to 40 students.
- **Local farmers are supplied with a free green fertilizer** in the form of straw ash.
- **The project leads to significant reductions of open-field biomass burning** that previously caused accidents, air pollution and respiratory diseases.
- **The regional electricity grid has been strengthened.** It now is more reliable even in times of high demand.

Environmental impact

- Better air quality due to less open fires from burning biomass in the fields.
- Ash from the process has a high kalium content. It can be used as fertilizer for the surrounding farmland.
- 50 trees were planted locally.

Checklist Project 300917

Commercial Operation Date
4 December 2008

Total capacity
12 MW

Estimated Annual Electricity Generation
59'000 MWh

Quality Assurance and Verification
Annual audit by PWC
Annual electricity verified by China Environmental United Certification Center

Transparency
RECs listed in GoldPower Register (http://goldpower.net/goldpowerregister)
Underpinning carbon credits retired in Gold Standard Markit Registry

Marketing material
High-resolution pictures available

Reportability
Meets GHG Protocol Scope 2 Guidance criteria

GoldPower credentials projects certified by

The Gold Standard®
Premium quality carbon credits

GoldPower credentials reportable under

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