

Country Profile of China

Describe the key stakeholders in the animal waste management sector

From the government side, a complete and efficient network has been formed: Under Department of Science, Education and Rural Environment, Ministry of Agriculture, Division of Renewable Energy has been established; There are 34 administrative departments and technical extension institutes at provincial level; about 200,000 people work for China's rural energy industry; 46,000 people for management and dissemination; 36,000 for enterprises and industrial services; 170,000 rural technicians. The rapid development has attracted hundreds of companies to develop biogas products and equipments and some of them have won national biddings. There are nearly 22 million households with digesters and how to provide good service has become a big problem. Some service associations and energy companies have emerged and the formation of service system is no longer dominated by government but participated by NGOs and industrial bodies.

Overview of methane recovery potential

According to the national plan, by the end of 2010, there will be 40 million households using biogas digesters and the annual biogas output shall reach 15.5 billion m³, about 24.2 tce. Among the 146 million households that are suitable for biogas development, the dissemination rate shall reach 30% and in 2020, the rate shall be 70%. According to the national, by the end of 2010, 4000 large biogas plants shall be built on husbandry farms and the total number of large biogas plants shall be 4700, accounting for 52% of the total number of large scale husbandry farms. The potential pollutants shall be utilized as precious resources.

Challenges and priorities to greater methane recovery and use

The employment admittance requires the technician have to get a national-acknowledged certificate to guide or build digester. But the total number of certified technicians can not meet the huge demand for building new digesters, leading to poor-quality digesters with a short life.

Secondly, the public awareness. The significance and contributions of rural biogas technology has not been fully recognized. Biogas projects has effectively increased farmers' income and improved their living standards and treated industrial and agricultural wastes, but most social, environmental benefits and contributions to community development and to global climatic changes alleviations are external. It can not benefit farmers in terms of cash income.

Financial obstacles. The majority of poor farmers and small farms can not afford building a digester because of financial shortage.

List of existing or planned methane capture and use projects:

Rural biogas has developed steadily. By the end of 2007, there are 26.5 million households built biogas digesters, producing 10.2 billion m³ biogas every year, equal to 13.6 million tce. Farmers' increased income and reduced expenditure reached 13 billion RMB Yuan and 90 million farmers have been directly benefited. There are 18,000 small biogas plants with total volume 700,000m³ and 8576 large biogas plants built on husbandry farms. Central government has invested in Eco-campus building in Hebei, Fujian, Shanxi, Hubei, Guangxi, Hainan, Chongqing, Sichuan, Yunnan and Shaanxi provinces. The total investment was 800 million RMB Yuan in 2007 and 800 million in 2008.

Financing options

Investment in biogas development has increased dramatically. During the Ninth Five-Year plan period, Chinese government has invested 6 billion Yuan for biogas development. Since 2003, the annual investment has been over 1 billion Yuan and in 2006 over 2 billion and 2.5 billion in 2007. The financial support has accelerated biogas development. Besides, the private sector has been attracted by the rapid development and the private investment has increased. External funds from WB and CDM projects has also become a major source.

Current cooperation among countries or non-governmental organizations

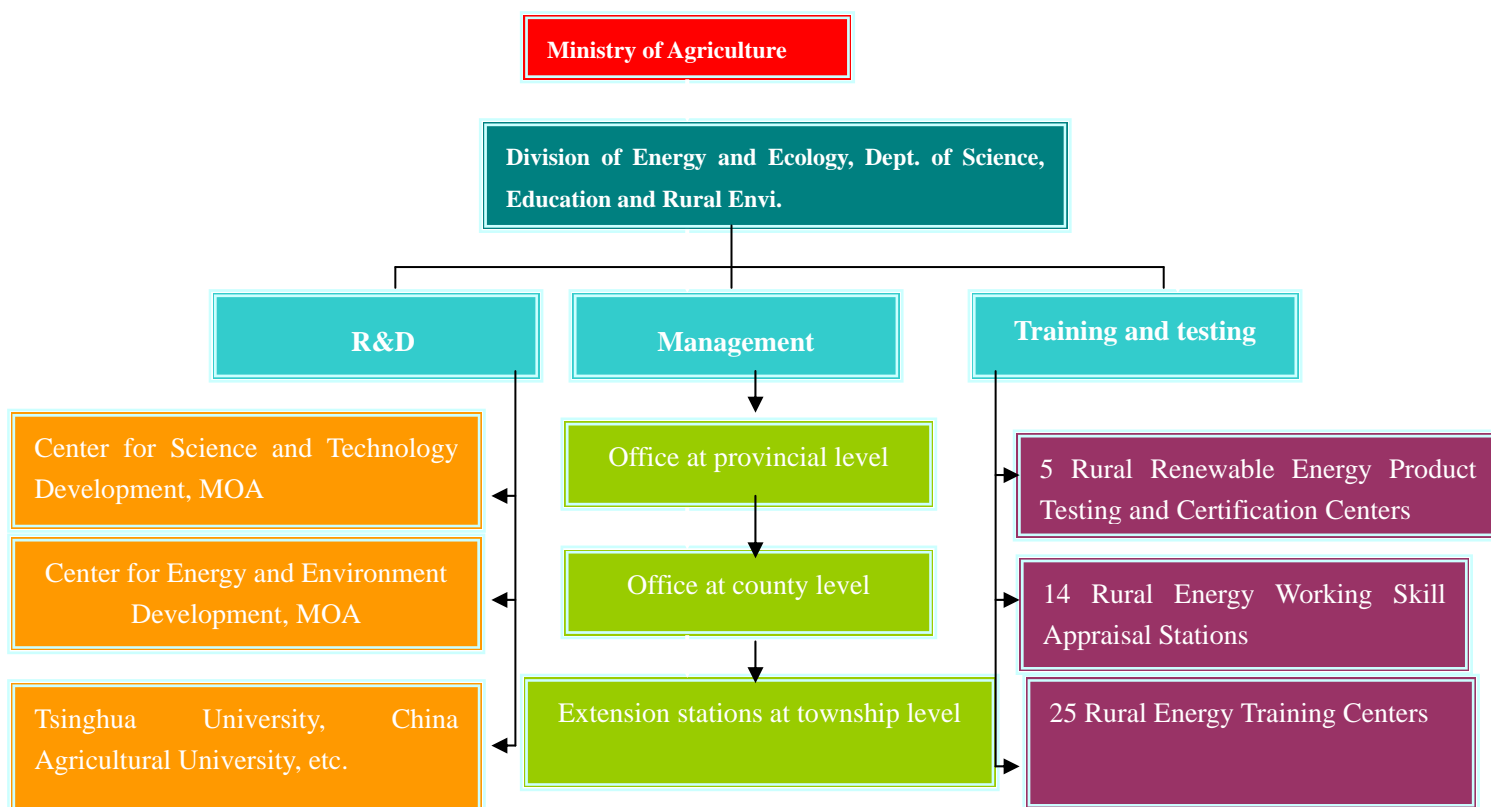
- Rural energy and ecology development cooperation project has got a 33.119 million Us. Dollars loan from Asian bank and GEF grant 6.361 Us. Dollars, 16005 household biogas digesters have been built, accounting for 82% of the planned number;
- GEF Project of Livestock waste management in East Asia has aimed to to reduce and prevent the pollution of the international waters, namely South China Sea (SCC) from rapidly increasing livestock production.
- A World Bank loan project of New Countryside and Eco-household Program shall be finalized this year with WB loan 120 million Us. Dollars.

Country strategy:

Biogas development has become a national priority. From 2003 to 2007, the “No. 1 Document” (on improving farmers’ livelihoods) jointly issued by the China People’s Congress Central Committee and the State Council had specified that

investment in biogas would be increased. The Eleventh Five-Year Plan on National Economy and Social Development, the Middle and long term program of renewable energy development, the Agricultural Bio-energy Industry Development Plan and the National Rural Biogas Development Plan has specific items on biogas development. It has been made clear that farmers' will must be respected and their living energy shortage shall be relieved according to the principle of focusing on biogas, relying on local conditions and coordinating use of diverse energy

Government structure:



Country contacts:

Department of Science, Education and Rural Environment, <http://www.stee.agri.gov.cn/>
 Biogas Science Research Institute under MOA, <http://www.biogas.com.cn/>

Chinese Academy of Agricultural Sciences, <http://www.caas.net.cn/caas/>

Chinese Biogas Society

Chinese Association for Rural Energy Industry, <http://www.carei.org.cn/>

Conclusions

- The energy demand will increase dynamically along with the national economic development in China.
- The renewable energy will take more share in energy consumption due to the considerations on environmental protection and energy security.
- To develop renewable energy in rural China will be a long-term target to improve the living condition of farm households and ensure a sustained agricultural and rural development.
- The Chinese governments will put greater efforts to promote renewable energy development by launching laws and regulations and setting up market-oriented mechanism etc., which not only benefits to China, but also thus contribute to global environmental protection.