

Case Study for Sustained Energy Audit Principles

1) Title of Audit Program

Audit Investigation on A City's Rural Area's Methane Construction Projects

2) Audit Objectives

Social and economic benefits from the methane construction projects in the rural areas in A City from 2006 to 2007; challenges and problems in the construction of the projects; making pragmatic audit recommendations for their fast and healthy long-term development.

3) Audit Standards

- a) Laws and regulations: Laws on Energy Savings of P.R.C., Laws on Renewable Resources of P.R.C., Decisions by the State Council on Promoting Energy Saving, Methane Construction Projects' National Debts Management Rules (Trial) and other rules and regulations.
- b) Methane construction standards: Graphics of Household Methane Pools, Procedures for Household Methane Pools, Household Methane Pools' Quality Control Standards, Methane Engineering Technical Standards and other relevant standards.
- c) Local standards: Energy Construction Managing Methods for Rural Areas in A Province, Managing Rules on A Province's Rural Areas' Small Public Methane Pools Construction Projects (Trial), Opinions on the Promotion of the Methane Construction in A City's Rural Areas, Management Rules on A City's Rural Areas' Methane Construction Projects (Trial), Methane Construction Projects for Dealing with Dejections of Livestock and Birds in Medium and Large-scale Breeding Factories (Trial).

4) Audit Methodologies

During investigations, auditors collected materials and related information in various ways, such as visits, interviews, examinations, confirmation, on-the-spot visits and talks to methane owners and users in the villages, with a view to having a good understanding of the depth and width of the effects of rural areas' methane construction projects.

5) Scope of Audit

- a) The Overall Situation of Methane Construction Projects. It covers the overall objectives, progress of construction and the assessment.
- b) Management on Methane projects and construction funds. It consists of planning application, organization and implementation, supervision and management, size of funds and resources, fund use and supervision.

- c) Spread and Creation of Methane Technology. Methane construction rules & standards, research & development on and spread as well as application of new technology and craftwork are included.
 - d) Construction of Methane Service System. This mainly focuses on the staff, technical training, economic resources, present management system, operation and service levels of the management.
 - e) Benefits of Methane Construction. Both social and economic benefits are evaluated.
- 6) Audit Findings
- a) Methane Construction has made some achievement.
In 2006 and 2007, A City made a total investment of \$ 139.07 million, among which 42.92% is the fiscal investment from A City, 32.38% from county and district governments, local financial investment taking up a major percentage of the total investment in rural areas' methane construction; all in all 122,000 methane pools were completed, 181 medium and large-scale facilities for dealing with dejections from livestock and birds were built up and the facilities have a total area of 40,000 square meters. 74 Service stations were newly built, reaching the targeted tasks and thereby making positive contribution to the rural area's ecology, environment and health.
 - b) Manifold benefits of rural area's methane projects. They not only improved the revenue from agriculture, the income of peasants but also improved the hygiene in rural areas and thereby strengthened the improvement in ecological environment.
 - c) Highlights and problems to be resolved. First, the targets should be more pragmatic. The major problem lies in the fact that the annual county household methane pool tasks didn't consider peasants' own will, leading to the difficulty in implementing the national debts program for methane construction in whole villages; Second, more investment is demanded by the methane projects. The major problem is that subsidy standard is too low, local funds were not completely appropriated; Third, rural area's household planning and construction don't fit in other planning. The main problem is that rural area's methane construction planning doesn't take into consideration the overall planning of land use as well as that of urban and rural development; Moreover, land use and collective living lead to the reduction in the number of households which can build up methane pools and therefore the household methane pool construction base is affected; Four, the number of medium and large-scale methane construction projects should grow and the comprehensive application of them should be improved. What auditors find out is that the planning for medium and

large-scale methane programs can't meet the demand and, in general, the built factories were not sufficiently used. In addition, methane service stations were not well built up and the methane construction in earthquake-stricken areas should be recovered and developed as soon as possible.

6) Audit Recommendations

First, with the concept of scientific development, fully coordinating the planning of rural area's methane construction program with the planning for land use, urban & rural development and 'new countryside' initiatives; building up communication mechanism; rationally selecting technique models, combining them with industrial economic development and structural adjustment; promoting recycling economy and ecological agriculture; and including the earthquake-stricken rural area's methane programs' recovery in the overall planning for post-earthquake recovery and development;

Second, initiating a variety of ways of money collection and increasing investment in methane construction; continuing to improve fiscal investment, getting central and provincial financial support; seeking monetary support and growing credit input; fully exerting the role of investors and guiding medium and large-scale methane projects' owners' investment;

Third, promoting the construction of medium and large-scale projects, improving the comprehensive use of methane; enhancing methane construction programs for livestock and birds factories, increasing capital budget for medium and large-scale methane projects; improving standards for medium and large-scale methane projects; taking measures to support methane's comprehensive application, including them in the construction content of the program; standardizing projects' management and operation, continuously improving the comprehensive use of methane;

Four, improving techniques, perfecting service system; quickly establishing rural energy technique service system, setting up long-term mechanism, strengthening the building of professional technique facilitation staff and workers for methane pool's construction, so that guidance is available whenever households need, training is available whenever farmers want to learn, and service is provided whenever farmers need, leading to the long-term benefits of methane.

(Audit Organization: Chengdu Resident Audit Office of CNAO)