



INDONESIA DOMESTIC BIOGAS PROGRAMME

PROFILE

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Introduction

The Indonesian Domestic Biogas Programme (IDBP) is in Indonesia better known as the BIRU Programme. BIRU means 'blue' and is an acronym of Biogas Rumah, which can be translated as 'biogas for the home'.

In 2008 a feasibility study was undertaken to assess the potential for a national domestic biogas programme in Indonesia. The report, which was discussed by stakeholders in February 2009, was received well and a proposal was developed as a trigger to start implementation. Based on earlier experience in other countries the BIRU Programme aims to disseminate domestic biodigesters as a local, sustainable energy source through the development of a commercial, market-oriented sector.

Implementation of the programme is in the hands of Hivos, a Dutch NGO, working together with the Indonesian Government (DGEEU), SNV Netherlands Development

Organization and Rabobank Foundation. Funding for the Programme comes from the Dutch Embassy.



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The BIRU Programme started in May 2009, got support from an SNV Senior Advisor as from August 2009 and has gradually built up its staff which currently counts around 28 persons, of which 18 are posted in provincial offices. When fully developed the BIRU programme will employ around 56 team members, will have up to 30 construction partners with ca. 240 masons and supervisors, aiming at developing the biogas sector able to build at least 8,000 biogas plants before the end of 2012.

Progress to date

Construction progress

Biogas plants are being constructed in selected districts of 6 provinces. These provinces are East Java, Central java, Yogyakarta, West Java, Lombok and Bali. In spite of a fairly speedy start of the programme in 2009, the first months of 2010 did not show tremendous progress in construction. Some of the 'pioneer' partners which initially showed a good or fairly good performance, did not meet expectations after the first months of extensive training and guidance. Between January and April 2010 construction progress was seriously under target. It seems this slow progress was related to the investments that had to be done in terms of time and manpower to



focus on decentralization of the activities to regional offices. Also, the long period it took to ensure access to affordable credit for biogas households limited progress in some of the target areas. Fortunately, since May 2010 the programme started to take off. Monthly production went up from less than 20 units to 43 in May, 98 in June, 95 in July and in August targets were exceeded with a production of 132 units. At the end of August the programme had built 512 biogas plants.

Partner engagement

A secondary factor leading to a limited number of plants was the limited number of construction partners engaged at the programme. After evaluating the initial underperformance, the programme immediately undertook serious efforts to increase the number of construction partners from 4 in 2009 to 9 in the first quarter of 2010 and 18 by the end of August. Assessments were done by the BIRU teams in the provincial offices. Some of these new construction partners have huge potential.

Cooperation with the private sector (especially the dairy sector, with companies such as Friesland-Campina and Nestle) appeared to be of great importance, as it enabled the Programme to better reach the farmers, and to improve access to credit. This cooperation has had enormous success in East Java, where the bulk of the digesters has been constructed, mostly by dairy cooperatives active as construction partner organization as well as lending partner organization.

Promotion

Most promotion activities undertaken until now have been implemented by the national BIRU office. A programme film and other promotion materials were developed which helped considerably in introducing the programme to government agencies and farmer cooperatives. Since the recruitment of biogas promotion officers at the provincial level, local activities have started, mainly by undertaking biogas awareness workshops (community meetings) and liaising with the local press. Local biogas promotion officers also assist in finding and assessing new potential partners. Early July the BIRU website was up and running: www.biru.or.id, presenting the latest news, a construction update, comprehensive information about BIRU partners and other relevant information for stakeholders, biogas owners as well as for the general public. A focus on gender aspects is included in the promotion strategies. A lot of attention was paid to improvement of the Construction manual and the User manual to make the information easier to understand for the target groups. The promotion staff also pays attention to national and local events to present the BIRU programme. Up to now more than 30 media coverage items have been identified since the start of the programme.



Quality Control

Routine quality control ensures that construction partner organizations are repeatedly reminded of their responsibilities with regard to the quality of the biogas plants and the guarantee of sustained use of the biogas plants. The BIRU approach is to reach 100% quality control towards biogas plants which are made by new construction partners. Also, new partners are supported by experienced masons or supervisors from other construction partners, when the need is identified. More experienced partner organizations will undergo a less intensive treatment. Partners where shortcomings are identified in relation to the quality of the construction are offered additional or refresher training. So far all plants constructed till date are functioning very well.



Training

The BIRU Programme has paid a lot of attention to training, including:

- a. Mason training: Until now the programme has trained 148 masons and 22 supervisors of 18 construction partners.
- b. Internal staff development training: mainly focused on training of national and provincial staff to empower them to implement the programme activities;
- c. Training of Trainers: for construction partners to enable them to undertake user training and slurry processing activities;
- d. Refresher training for masons, especially to enhance their plumbing skills and the use of high quality appliances;
- e. Technical training: this biogas training for government officials working with the Ministry of Energy and Mineral Resources is scheduled to take place monthly, but takes usually place bi-monthly and is provided by the SNV senior advisor;
- f. Biogas training: for TEDC, an education institute which develops training curriculae for vocational schools and supports IDBP in provision of biogas training for masons;

Currently there is a growing need for management training for construction partners, as well as manure management training for managers of construction partners.

Bio-slurry extension

Bio-slurry extension activities have been limited until now, pending the growth of the number of digesters. The results of the feasibility study as well as the market surveys indicate that the use of cow manure or slurry is still very low in the IDBP target areas, around 35%. Through the BIRU Programme, efforts will be undertaken to convince farmers to apply the bio-slurry to their farms or process it and sell it to others (companies or individuals). This way IDBP hopes that at least 50% of the farmers will make use of

the cow dung in a more responsible, environmentally-friendly way. In August 2010 the national office recruited a Manure Management Officer, who, assisted by the Senior Advisor will develop manuals and undertake extension exercises.

Research and Development

IDBP intends to have quality appliances produced in local areas. Therefore, workshops in different parts of the country are engaged to develop these local appliances, including the main gas-pipe, gas tap, mixer, water drain, biogas lamp, manometer and biogas stove. Good results have already been reached with the development of most of these items, except for the biogas lamp which is still in development.



Cooperation with the government

Cooperation with the Indonesian government is running well. The BIRU Programme receives appreciation from the Ministry of Energy and Mineral Resources, and gets very good support in many ways, including the organization of endorsement workshops in each current and new target area of the programme. The government has allocated funding to undertake these activities. Sustainability of the BIRU Programme is an important priority for the Indonesian government, which takes the issue of renewable energy very seriously.

Monitoring and Evaluation

The BIRU Programme has developed a sophisticated Management Information System which is derived from the system used by the National Biogas Digester Programme in Cambodia. This system accurately tracks the number of plants built, the owner, the company, the mason responsible, and many other relevant data, including a range of quality indicators.

Besides, the programme applies strict reporting regulations, ensuring that management decisions and reports can be made based on complete information. The latest version of the Standard Operating Guidelines are expected to be released by the end of September 2010 (in English and Bahasa Indonesia).

A social-economic and gender baseline survey has been undertaken and annual user surveys will be done routinely to measure satisfaction of the plant owners and success of the programme.

External evaluations will be done by teams from the Dutch Ministry of Foreign Affairs.

Market studies in potential target areas

During the feasibility study undertaken in 2008¹ a number of key target areas were already identified. These areas with high densities of cows and an active dairy sector, were selected to start the programme: the provinces of West Java, Central Java, Yogyakarta and East Java. Additional market studies have been undertaken in areas which are characterized by high cow, pig or chicken densities. Research started on the island Lombok (Nusa Tenggara Barat province), Bali province and South Sulawesi province. Recommendations to include the cluster Lombok-Bali as target area were followed and positive recommendations towards South Sulawesi have been submitted to the Dutch embassy and the Indonesian Directorate General of Renewable Energy and Energy Conservation. The results of the market studies can be summarized as follows:

Lombok

Lombok, part of Nusa Tenggara Barat province, is the cow fattening and breeding area of the well-known Bali cow, with an average ownership of 2-5 cows per household. 52% of the respondents in Lombok still use fuel wood for cooking and 45% uses kerosene. LPG is almost not used. The majority of the households (76%) has never used credit from banks or MFIs. Availability of cow dung is sufficient, dung use is not efficient. The majority of the households is interested in biogas and 63% of them said that they were interested in taking biogas if credit would be available.

The BIRU programme got a very positive response from the NTB province government authorities.

Bali

Bali has a considerable potential for developing biogas, especially among pig owners. 87% of the respondents raise pigs in pens around the house, while cattle is usually kept farther away and owned by a lower number of respondents. Farmers are used to take credit. Around 63% is still using a mix of fuel wood, kerosene and LPG. 56% of the farmers do not use the manure. 61% of the respondent showed a positive attitude towards biogas, and around 90% said that with subsidy and access to credit they would seriously think of becoming biogas user. 91,5% of the respondents still has access to renewable fuelwood from their own gardens, but in Bali too these resources are depleting and the government is actively seeking ways to introduce renewable energy sources. The government is very keen on developing Bali as 'green island'.

South Sulawesi

The Bali cow is also dominant in South Sulawesi, with average ownership 6 cows per household among the respondents, indicating sufficient cow dung for biogas. Fuel wood remains the major fuel (33%), with most other households using a mix of fuel wood, kerosene and LPG. 84% of the respondents showed interest in becoming biogas user, as long as the programme can proof the benefits. Most respondents (69%) had never taken a loan from a financial institution, 23% had taken loans but not regularly. 67% of the farmers is not using their dung, which is usually disposed of in water drains and rivers,

¹ Feasibility study name

polluting the water in the area. They have limited knowledge about the possible utilization of dung. Overall, South Sulawesi shows huge potential for biogas.

Based on the conclusions in the market survey reports, both the Dutch Embassy and the Indonesian government supported to select the Lombok-Bali cluster and South Sulawesi province as new target areas for the BIRU Programme. The target is to build 1,000 biogas plants in both of these areas.

For more information please visit our website: www.biru.or.id