

NATIONAL BIOGAS PROGRAMME IN VIET NAM FOR THE ACCESS TO RENEWABLE ENERGY IN RURAL AREAS

Founded in 2003, the National Biogas Programme in Viet Nam develops the existing great potential for biogas using agricultural byproducts in the rural areas of the country. The Programme facilitated the construction of 158,500 small scale biogas digesters, resulting in access to a clean, renewable and reliable source of energy for more than 790,000 rural producers across 55 provinces and cities of Vietnam.

The Programme is implemented by the [Ministry of Agriculture and Rural Development MARD](#) and the Provincial governments of Viet Nam together with the [SNV Netherlands Development Organization](#), also involving other partners.

Small scale biogas digesters take organic material into an air-tight tank, where bacteria break down the material and release biogas. The biogas can be used as a fuel, for cooking or other purposes, and the nutrient-rich slurry which is left can be used as organic compost. MARD promoted fixed-dome biogas systems, designed and developed in Vietnam, which range in size from 4 m³ to 50 m³. The larger ones are used for semi commercial scale piggeries and poultry farms. The smaller family-sized plant provides enough gas for all cooking needs and for lighting, with a small number of households also using the biogas as fuel for an electric generator.

[The SNV website](#) highlights that the Programme was implemented to face the increasing challenges to secure energy for cooking and lighting purposes in the rural areas helping to tackle environmental, health and energy supply challenges. The website also presents the results achieved and SNV's contribution to its development.

In the framework of the [Viet Nam Energy Partnership Group meeting held in 2021](#) with the focus on Rural Electrification, the impacting results of the Vietnam Biogas Programme have been presented in order to plan its next fourth phase of activity. By the construction of the mentioned 158,500 small scale biogas digesters in 55 Provinces, it has created more than 2,500 new jobs in rural areas, as well as trained nearly 1,700 biogas masons and supported 355 biogas construction team leaders in establishing biogas businesses. At the end of phase 3, the Programme has contributed to reduce a total greenhouse gas emissions of 7.3 million tonnes of CO₂.

[The document presented at the Ashden Awards by MARD and SNV](#) provides further information on the technologies and methodologies adopted in the first three phases of the programme:

- The materials used are all local and the Biogas systems are built by a team that includes on average five masons. All technicians and masons have been trained by the Programme.



- Householders pay for a biogas system and can reclaim a government subsidy once the system has been checked and confirmed to be working properly by a MARD technician. A typical 10 m³ system costs about US\$550, 70% for materials and 30% for labour. The costs of plants vary because masons can set their own charges for labour, some householders provide part of the labour themselves to bring down the cost and there is also a variation in the price of materials. MARD estimates that a typical plant pays for itself in between four and five years, and even more quickly if the savings on purchased fertilizers are included.
- The Programme is promoted through general advertising, brochures, promotional workshops and householders interested in purchasing a biogas system are invited to a meeting where the technology is explained and demonstrated. Households that sign up for the Programme are put on a list to be approved for a subsidized plant. After the installation is completed, the customer is given a training in basic operation and maintenance by the local technician. The new owner receives a handbook of instructions, with a postcard for reporting problems and contact numbers. Each digester has a unique serial number which allows the masons to be traced.
- All plants have a one-year warranty and householders can contact masons or district technicians directly if problems occur. The MARD quality control system includes district, provincial and national level technicians visiting all plants installed. Plants should last at least 20 years, but can carry on working for much longer if properly maintained.
- The slurry from digester is spread on fields as a fertilizer, displacing some use of chemical fertilizers and increasing crop yields. Around 60% of farmers use the slurry for their own crops and the rest may sell it, increasing the family income.



The Biogas Programme, applied on a national scale, has shown that it can bring important environmental, social, economic and employment benefits. Biogas digesters cut greenhouse gas emissions by replacing fossil fuels (LPG and coal) for cooking, and by reducing the production of methane from managed manure. Health benefits of the MARD biogas plants include reduced indoor air pollution from wood and coal stoves, improved hygiene and sanitation, and less smell from piggeries and poultry farms.



The Programme provided local masons with training and work and mason groups have also received additional business training to help them operate more independently. In this way, a national skilled staff including technicians, managers and masons have been created over the years.



The Government of Viet Nam through its Energy Partnership Group, decided to implement a new fourth phase of the National Biogas Programme, improving some aspects with the help of other partners. New ways are explored to promote medium and larger scale biogas plants to increase the impact on rural development and to partner with new organizations that facilitate access to microcredit for biogas plants.



The opportunity of making the Programme self-sustaining in the longer term using the carbon finance as one source of funding is also considered by MARD, taking into account that [the reduction of CO₂ emissions was independently verified and certified](#) in 2020 by the [Gold Standard carbon credits Organization](#) as one of the highest volumes for voluntary carbon credits available on the market.

The Biogas programme implemented in Vietnam has been widely acknowledged by the international community for environmental protection and the development of renewable energy for local consumption.

To know more

[Biogas Programme in mard.gov.vn](http://mard.gov.vn)

[Vietnam Biogas Programme in SNV World](#)

[Viet Nam Energy Partnership Group 2021](#)

[Ashden Awards - Biogas Programme](#)

[Biogas Program – SNV brochure 2021](#)

[Biogas Vietnam in wordpresse.com](#)

[Gold Standard Carbon Credits in SNV sitio web](#)

[Gold Standard Carbon Credits Vietnam Biogas in nexusfordevelopment.org](http://nexusfordevelopment.org)

[Biogas Program in The Gold Standard website](#)

[Biogas Program in rural21.com](http://rural21.com)

[Article in Quartz \(qz.com\)](http://qz.com)

[Transforming waste into biogas in Vietnam on myclimate.org](http://myclimate.org)

[Article in weforum.org](http://weforum.org)

[Biogas Dissemination Scale-Up Programme in SNV website](#)

[Africa Biogas Partnership in SNV website](#)

[Africa Biogas Partnership Programme website](#)

