

FACT SHEET

NEPAL: SMALL SCALE BIOGAS PLANTS

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1.1 FACT SHEET „NEPAL: SMALL SCALE BIOGAS PLANTS”

COUNTRY	Nepal
PROJECT TYPE	Small Scale Programme of Activities (PoA) and 4 Small Scale Project Activities (PAs)
TARGET GROUP	Rural households throughout Nepal
CO ₂ -REDUCTION	Approx. 540,000 tonnes of CO ₂ annually (all CPAs) and 200,000 tonnes of CO ₂ (PAs)
TECHNOLOGY TRANSFER	Household biogas plants with a size of 2 to 10 cubic metres.
LOCAL ENVIRONMENT	Avoidance of deforestation, preservation of biodiversity and reduction of indoor air pollution
ADDITIONAL BENEFITS	<ul style="list-style-type: none">▪ Affordable and decentralised energy source, especially for poor rural households▪ Production of valuable fertiliser as a by-product▪ Development and strengthening of local value chains / small and medium-sized enterprises▪ Saves time, especially for women and children, by eliminating the need to collect firewood
ROLE ATMOSFAIR	<ul style="list-style-type: none">▪ Planning, coordination and management of the project by atmosfair employees in Berlin▪ Reduction of the sales price through your support so that low-income rural households can also afford the biogas plants▪ Pre-financing of the project and development of new project regions
PROJECT PARTNER	Alternative Energy Promotion Centre (AEPIC), Biogas Sector Partnership – Nepal (BSP-N) and Nepal Biogas Promotion Association (AEPC) with more than 100 biogas companies
NUMBER OF BIOGAS PLANTS IN OPERATION	>240.000
PROJECT REGISTRATION	CDM and Gold Standard

SUSTAINABLE DEVELOPMENT GOALS (AMONG OTHERS)



Project update 2024 – Nepal: Small biogas plants

Each year, companies from the Nepal Biogas Promotion Association (NBPA) maintain and repair small biogas plants across Nepal. These activities are made possible through your donations. In September 2024, atmosfair employee Martin Herma accompanied the repair team during their work around the city of Pokhara.



Picture 1: NBPA technicians check gas pipes and replace defective parts

Pokhara is the administrative center of the Kaski district, headquarters of the Gandaki province and the second largest city in Nepal after Kathmandu. The city oversees the Annapurna massif with its peaks over 8,000 meters high. Millions of years ago, the collision of two continental plates led to the formation of these peaks. The collision continues to this day - with consequences. The shifting of the tectonic plates continues to cause numerous earthquakes in the region. In November 2023, a magnitude 6.4 earthquake shook the country and claimed more than 150 lives. In the following year, Nepal was shaken by over 90 earthquakes.

After the severe earthquake in 2015, atmosfair decided to support the maintenance of over 240,000 small biogas plants through an annual repair program. Every year, local biogas companies repair defective systems in a specific region. In addition to replacing gas taps, valves, pipes or digesters, the program also repairs domes, biomass inlets and outlets or toilets connected to the biogas plant. This continued involvement has contributed to the development of a strong economic sector in the Nepalese biogas industry.



Picture 2: The repair team transports the equipment to remote households

Even small and medium-sized quakes can damage biogas plants. Regular maintenance of the plants is therefore particularly important in Nepal. It ensures that the plants can continue to operate for a long time. The biogas plants supply households in rural areas with clean gas for cooking. They therefore replace traditional wood fires. Other advantages include the avoidance of harmful smoke emissions and the use of fermentation residues as fertilizer.



Picture 3: Civil engineering work for new biogas plant

The biogas plants are also real climate protectors: a single plant can save an average of three tonnes of CO₂ per year - in other words, as much as is produced by an intercontinental flight or one to two years of driving a car.

In 2024, atmosfair financed the maintenance and repair of 300 plants in Gandaki Province, with 30 plants being completely renewed. The financial support of the DAV Summit Club and numerous individual donations also enabled the construction of 89 new plants. These are in addition to the plants planned and financed by atmosfair in collaboration with the Alternative Energy Promotion Centre (AEPCC). The new subproject, involving over 16,000 new plants, is currently being certified.

As the facilities are located in rural areas, getting to them is difficult. It often takes a short hike with equipment to reach the remote households. Before maintenance and repairs are carried out, the repair team discusses the operation of the system and any anomalies with the families. Reduced gas pressure, for example, can be an indication of a leak. The technicians use a compressor and pressure gauge to measure a possible drop in pressure in the pipe system. Leaks are then detected using a soap solution. If small bubbles form, the leak has been found. Damaged parts are replaced immediately. New pipes are also laid directly - often in cooperation with the families.

For plants under construction, the management team of local biogas companies supervises the progress and compliance with construction standards. Proper plant sizing is crucial to ensure gas production meets family needs and maximum permissible pressure is maintained.

Some plants were completely renewed this year. This involved emptying, cleaning, and resealing the plants. The removed digestate was mixed with fresh material and reintroduced to quickly restart operations. Challenges such as heavy rainfall were met with great flexibility by the team.

Together with your support we are making a significant contribution to a more environmentally friendly and sustainable future by expanding the project and maintaining existing facilities. You can donate directly to the repair of further facilities here under [Climate protection presents "One Brick at a time"](#). We look forward to the coming year 2025 with you!



Picture 4: View of the Annapurna mountain range from Pokhara



Picture 5: Due to the defective biogas plant, the family has temporarily switched back to firewood



Picture 6: The family thanks the repair team with lunch



Picture 7: Offspring - the cattle's manure is used for biogas production



Picture 8: Daily operation of a 25-year-old biogas plant



Picture 9: The digestate from the biogas plant is used for growing vegetables in the family's garden



Picture 10: NBPA technician checks the tightness of the pipework system



Pictures 11 & 12: NBPA employees renovate old biogas plant