

# THE TIMES OF INDIA

## Biogas plants can help gaushalas become self-sustainable



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Gaudhan and Gauseva were two pillars of Indian society from ancient times. India was a cow-based economy, and references to gaushalas can be found in the Vedas. Cows play a prominent role in every aspect of life, from agriculture and nutrition to transportation. The significance of Gauseva was lost due to several influences and increased commercialization for a short-term benefit. People saw cows and their progeny only as a source of income and took care of them until they were productive. Gaushalas lost their prominence due to a lack of human and financial resources, which resulted in an increase in the number of stray cattle. According to the 2020 livestock census, there are 5.02 million stray cattle in ten different states.

India had a total bovine population of 302.3 million in 2019, out of which 192.5 million are cattle, including 81.4 million adult female cattle, according to the statistics from the National Dairy Development Board. The bovine population increased to 305.5 million in 2021 and is estimated to reach 306.7 million in 2022. The cattle need to be managed efficiently and should be economically and environmentally sustainable through the use of innovative technologies. The latest example of the technologies in the domain of milking technology is given by an IIM-Ahmedabad working paper named GAU (Gai Adharit Unnati), which is the facial recognition of cows to be utilised as a biometric to get their information.

The paper also highlights some interesting facts, including the fact that cow dung from two cows can generate enough biogas to cook three meals a day for a family of four, including two adults and two children. According to the same paper, India's 300+ million cattle population can produce ~18 million metric tons (MMT) of bio-CNG per year, along with providing 200 MMT of biofertilizer per year.

Gaudhan includes the products of cow dung and cow urine. In a recent event organised by Dr. A.P.J. Abdul Kalam Technical University, cow urine was used to produce hydrogen, as demonstrated through a set-up at AKTU in Lucknow. Cow dung can also be used to make vermicompost, along with biogas. According to Dr. Ranvir Singh, Senior Scientist, Animal Genetics Division, Indian Veterinary Research Institute (IVRI)-ICAR, Bareilly "Even with the cow that is not giving any rupee milk, up to Rs 20,000 can also be earned by making organic manure (vermicompost, etc.)"

The government of India has launched several schemes to develop an economy based on gaushalas by enabling the commercial use of cow dung and cow urine. The

## How The Biogas Industry Can Help Achieve ESG Goals

Businesses can install biogas plants and improve waste management, reduce carbon footprint, achieve energy and water resources



The ESG standards convey how an enterprise makes financial gains while adhering to the environmental and social norms of sustainability.

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The world is moving towards an era of environmental awareness, resulting in an increased emphasis on sustainable development and climate action worldwide. This has also transformed the global reporting and disclosure standards on sustainability. The government of India introduced the Business Responsibility and Sustainability Report (BRSR) in 2021 to compare the environmental, social and governance goals of business organisations across various sectors. The ESG (Environmental, Social and Governance) criteria have emerged as a global yardstick to evaluate a company's behaviour, even by the socially conscious investors.

The ESG standards convey how an enterprise makes financial gains while adhering to the environmental and social norms of sustainability. The ESG goals of an enterprise help its stakeholders build long-term value and derive high returns. ESG investing is sometimes referred to as sustainable investing, impact investing or socially responsible investing (SRI).

With the outlook that organisations reporting high ESG metrics are poised to receive more funding from global investors, organisations are on the lookout to create an effective ESG framework that involves strategy development, business transformation and efficient reporting. However, it is important to note that ESG does not simply mean compliance with the norms; it is more comprehensive and involves a transformation of how an organisation functions, deals with its stakeholders, and gives back to the community.

The biogas industry is perfect example of a business fulfilling the very essence of ESG. It caters to the environment (E), helps create employment opportunities at the root level (S), and the running of a biogas plant requires adherence and compliance to a specific set of norms (G).

## Importance of making Gaushalas sustainable for clean energy goals

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Unprecedented changes in the global energy scenario, especially attributed to the Russia-Ukraine war and climate crisis, including intense floods, water scarcity, severe fires, rising sea levels, flooding, melting polar ice are increasingly threatening nature, human lives, livelihoods, and the well-being of human life around the world. The UN is emphasising on the fact that biodiversity loss is driven by human economic activities. The issue must be resolved, considering human beings, environment, and the economy are the main stakeholders. Therefore, it is important to be considerate and opt for more and more sustainable ways of generating energy.

India's clean energy goals were to get 40% of installed electricity capacity from non-fossil sources, as committed in COP21 and the goal was achieved in year 2021. Out of a total of 157 GW of non-fossil-based electrical power generation, India is producing 48.55 GW from solar, 40.05 GW from solar and around 10.32 GW from biomass-based power plants (including those based on burning biomass to produce energy). However, there is a large gap in the utilisation of biogas-based power plants for CHP (Combine heat and power) generation, mainly due to lack of feedstock and finance, and even due to a lack of utilisation of the respective heat. The solution lies in the utilisation of bovine forces present in the country.

The National Dairy Development Board estimates that India had 192.5 million cattle and 109.9 million buffaloes in 2019, totalling to 302.3 million animals. The number increased to almost 305 million in 2021, the greatest number ever recorded, with a total of 996 million cattle worldwide. Traditionally, dairy in India is always meant in terms of the summation of milk with Gaudhan (utilization of cow dung and urine) and Gauseva (Cattle service). Gaushalas (sanctuaries for bovine animals) can be traced back to the Vedic period, where even Rigveda gave a proper reference to the cow as Aghnya (meaning 'that which should never be killed'). In the past, our social norms and laws gave a lot of weight to an economy based on cows. However, as time went on, the gaushalas started to face problems when cows and their offspring were only seen as a source of income.

At present, several efforts are being made by the government of India. Eg., Niti Aayog is working on a road map to develop the 'Gaushala (cow shelter) economy' to enable the commercial use of cow urine and cow dung for multiple purposes. The same is undertaken both in India and abroad, which are being highlighted during various studies.