Praj has collaborated with Indian Institute of Science for H₂S removal and with Indian Institute of Delhi for CO₂ removal Technology.

Hydrogen Sulfide Removal:
In aqueous medium, polyvalent metal ions chelates of iron, is used for scrubbing hydrogen sulfide from the biogas. The sulfur present in hydrogen sulfide is precipitated as elemental sulfur.

Carbon dioxide Removal:
Hydro scrubbing process is based on the difference in solubility of CH₄, H₂S and CO₂ in water. The process is intensified by further improving the solubility of CO₂ by pressurizing the absorption system using chilled water. This ensures removal of impurities and absorption of traces of hydrogen sulfide and carbon dioxide. The moisture in the exit methane enriched biogas is removed in Methane Gas Dryer. Methane enriched gas is compressed under pressure to fill up in cylinder as Compressed Biogas (CBG) or BioCNG.

Apart from conventional energy rich feedstocks like bagasse or coal, biogas is used as alternate fuel source for steam, power generation to improve operation cost.

If biogas is cleaned by removing hydrogen sulfide and Carbon di oxide, it can be converted to BioCNG which is renewable fuel for various applications including operating automotive as well as for industries like foundries and restaurants enabling sustainability of the prospects.
Need fulfillment
Most of the distilleries and industries are using biogas as boiler fuel for steam generation.
In case of power generation using gas engine, industries eliminate hydrogen sulfide using Chemical Scrubbing Technology
For obtaining Bio-CNG biogas is further scrubbed to remove Carbon di-oxide using High Pressure Hydro-Scrubbing

Applications
EcoClean™ technology is suitable for cleaning of biogas for distilleries as well as for other industrial application for
- Power generation
- BioCNG/CBG/Biomethane production

Features
- Zero Effluent Generation
- Capable of handling variation in H₂S concentration (upto 20% w/w) in the feed biogas
- Biogas cleaning technology to scrub H₂S and CO₂ in feed biogas
- Purely chemical Scrubber
- H₂S converted into Elemental Sulphur with high purity having good commercial value

Advantages
- Methane enriched gas (Methane content upto 95%)
- Elemental sulfur as co-product
- Less downtime
- High pressure gas from EcoClean™ technology ensures CAPEX and OPEX reduction in case of BioCNG application

Benefits
- Consistent quality output
- Additional revenue generation from Co-product Selling

References
- GMMCO Limited
- Green Future Innovation
- Loknete Industries
- Simbhaoli Sugars
- Sahyadri Starch
- Vijaynagar industries
- Biosynergy
- Mahindra Research Valley
- Rajasthan Go Seva Sangh
- Madhav Go Vigyan Anusandhan Kendra
- Kanhaiya Goshala
- Shri Krishna Goshala
- Miraj Goshala

Note: Includes references of technology partners namely Indian Institute of Science (Bangalore) and Indian Institute of Technology (New Delhi)