BIOGAS TECHNOLOGY, SUSTAINEARTH ENERGY

- ## Background

  Nine out of every 10 households in rural India rely on firewood and other biomass for cooking. In total, around 144 Million households do not have access to clean cooking fuel in India. For their cooking, people use firewood, crop residue and dung cakes, which emit hazardous smoke. This alone results in about 10 lakhs deaths annually. Apart from being a major health hazard, these fuels leads to widespread deforestation and environmental damage via emission of greenhouse gases. On the other hand, LPG gas provided by Government agencies is yet to reach widespread penetration in rural areas and is expensive for most of the rural population. That's the problem SustainEarth, a startup that works on converting biogas into cooking fuel, set out to solve.

- ## Location, Date

  Chennai, 2013

- ## Areas

  Rural

- ## Stage/Scale

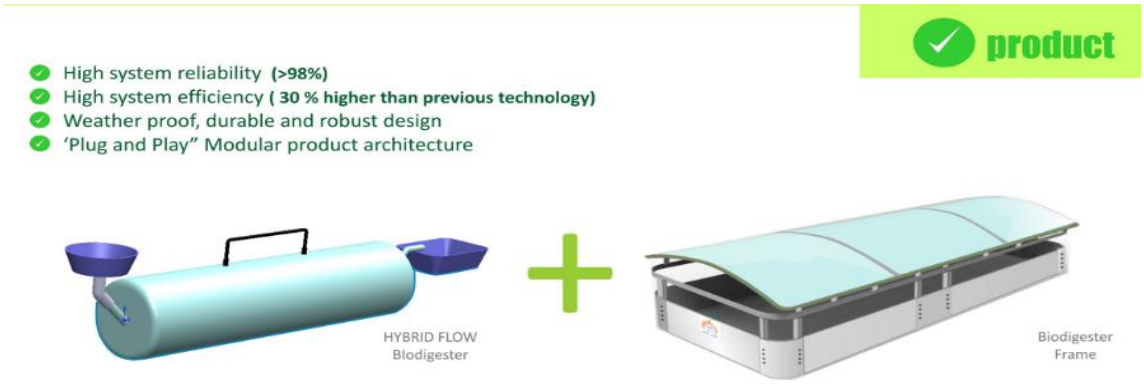
  Hybrid

- ## Objective of the assignment

  SustainEarth Energy aims to provide reliable, safe and affordable Biogas systems for rural household to become self-dependent for their cooking needs. Coupled with innovative Enterprise models, they aim to drastically remove the barriers to its adoption and improve access to clean and sustainable Bio-Energy. They dream of a rural landscape where women can cook in smokeless, pollution free and hassle-free conditions.

- ## What was done

  - SustainEarth uses innovative Biogas technology to provide affordable, clean cooking gas to rural communities. Through intensive R&D, they have built robust Biogas technology by improving upon the less-than-satisfactory aspects that turned many people away from it. Through a User Centric Design approach, they've solved the primitive hurdles to adoption and usage of Biogas. The image below explains how simple the working of their system is.



- Gau Gas systems are easier to install, more reliable, easier to maintain. They use Internet and Mobile connectivity to keep track of the performance of our systems. The team has established an efficient support system to ensure that all of our units are functioning at their best. If not, they fix them!
- SystainEarth has identified different channels to get in touch with the 160 million rural households for providing the Gau-gas solution. The channels are: Progressive farmers – Dept. of Agriculture, Dept. of Animal Husbandry, State Agricultural University – Extension (Reach), Krishi Vigyan Kendra (Farm Science Centres), Fair climate network, NREDCAP - Biogas nodal agencies of government, Women Self Help Groups, Rural Banks, Dairy Units – CSR, Panchayati and Mandal Parishad Members, Zilla Parishad Members. Potential geography is spread across 15 states in India.

Impact

- 'Gau Gas' is an innovative low cost biogas system that provides clean cooking fuel to 160 million under-served rural populations.
- Gau-gas has been adopted in two villages as of now and has given the best possible results. There are health, environment, climate and livelihood impacts from this system. The two villages have around 250 small dairy farms which are ready to adopt this system for sustainability. There are around 60,417,622 rural households with cattle in India. Out of them, 14,451,000 households are attached to dairy cooperative societies which are our channel partners. Presently there are only 1.15 % of these households with Cattle have biogas plants. So the impact is going to be tremendous if we achieve our mission of providing the Gau-gas plant to all these households.

Challenges and Issues

Most new technologies implemented in developing and under-developed contexts face the risk of falling into disuse. Unexpected complications always emerge when launching new products, but the team is aware of this. Initially the team surveyed ten different states aiming at providing one solution for all. The data that they collected, though, varied massively in different geographical areas and we realised we had to focus on specific conditions.

Innovation

- By rebranding the now-notorious Biogas product as **Gau Gas** and implementing new materials, new processes, and new technology, SustainEarth solves the problems faced by the last generation of Biogas users and change the perception about the usefulness of Biogas.
- This system is portable, easy to install & operate and works well for more than 10 years. Rural Women become self-reliant in their cooking needs in an eco-friendly way!

Lessons learnt

As much as biogas is a cheap, easily available renewable solution, it is nothing new. What is innovative about SustainEarth is Gau Gas, a cheap, sustainable and clean product consisting of a fabric bag connected directly to the household stove through pipes. Different from other biogas plants, Gau Gas requires very little material and labour force/time to be implemented, and it is easy to use due to the simplicity of its mechanism. SustainEarth exactly knows the USP of bio gas and they worked very well implementing the project.

- ## Financials

  Not available

- ## Economic sustainability/Revenue Model

  Presently they are incubated by Villgro innovations Foundation for our work. The team looks forward for more support from the development sector both in terms of funding and institutional support. Gau-gas systems are gaining traction in the rural markets and the team hopes to generate significant revenue from the system sales in the coming years. They are also looking forward for talent infusion for few areas to make this mission successful.

- ## Implementer Contact Persons

  - **Mr. Piyush Sohani**
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- ## Sources and References

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  - https://www.changemakers.com/sustliving2014/entries/sustainearth-energy-solutions
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