



Grameen Shakti

Project 1 Title: Pay-As-You-Go LPG System

Sponsor: Grameen Shakti

(the energy offshoot of Grameen Bank founded by 2006 Nobel Laureate Prof. Muhammad Yunus)

Background:

Our sponsor provides for residents of rural Bangladesh improved cooking stoves (ICS) with biomass that are more energy-efficient and emits less harmful gases compared to traditional stoves. Replacing biomass with liquid petroleum gas (LPG), which emits even less CO₂ and near-zero indoor air pollutants, is desirable. However, LPG-based ICS are still out of reach for majority of the population living in the rural area, mostly because of high upfront cost of LPG cylinders.

Project Purpose:

To design and prototype a Pay-As-You-Go LPG system to allow households to purchase LPG in small amounts while eliminating upfront fuel costs.

Project Requirements:

The design needs to fulfill the functions of

- monitoring (measurement of the amount of LPG remaining in the cylinder)
- metering (opening and closing of gas control valve on demand)
- mobile payment
- remote health and safety monitoring

Design Team Composition:

- An even mix of ECE and ME students.
- We look for students interested in working with international development agencies on global sustainable development issues.
- All team members must be able to communicate effectively in English in written, oral, and graphical formats.
- It would be desirable for the team members to have knowledge of and interest in South Asian languages and culture.
- Website development and multimedia production skills are a plus.