PROPOSED SOLUTION

GAS LEAKAGE MONITORING AND

ALERTING SYSTEM

PROBLEM STATEMENT:

The Liquefied Petroleum Gas (LPG) is the generally used for all cooking purpose in hotels and homes. Also, it is very user friendly to all the users, even though lot of explosions are occurred because of LPG outflow. In our system we are implemented a module to overcome these issues faced by the society LOBO is a system which is incorporated with gas sensor to sense the gas outflow. If the sensor senses the gas outflow level and compare this with the threshold value which is already set in the software. If it exceeds the fixed threshold value means buzzer gets activated and relay which is connected to the circuit also switched on. Then the total power supply will be dripped off. Now a days the peoples are unaware of the usage of the gas per day it leads to be delay in refilling the LPG cylinder. Our LOBO has one more module to overcome this kind of difficulties. Load sensor is used to continuously monitoring the level of the gas; Output of the load cell is connected to the microcontroller. Microcontroller manipulates that data weight of the gas cylinder, level of the gas leakage, usage of the gas per day are displayed in LCD. If the level of the gas cylinder gets critically low the new cylinder is booked automatically and the status is uploaded to the user through the Wi-Fi module.

IDEA /SOLUTION DESCRIPTION:

Compress Natural Gas (CNG) & Liquefied Petroleum Gas (LPG) are common gases used in home & automobiles. Although they are very user friendly & less pollutant, they are hazardous if leakage occurs by any accident. It detects the gas leakage by gas sensor and sends an alert to the registered mobile with the help of the GSM module. Manual work is needed to turn off the gas. It also monitors the gas level if it decreased then the system will intimate to the user by sending SMS and new LPG cylinder booked automatically.

NOVELTY/UNIQUENESS:

In our system able to measure the usage of the gas per day by continuous measurement of the weight can be done using load cell. The same is displayed in the LCD, by using gas leakage sensor the leakage of the gas is sensed, it alerts the user through buzzer and also shut down the total power supply.

SOCIAL IMPACT/CUSTOMER SATISFICATION:

Unidentifiable gas leaks give rise to explosions that are harmful to the employees working in the hazardous environment. There comes a need to install smart systems to accurately identify combustible, flammable and toxic gases along with detecting oxygen depletion in industry premises for improved safety.

In the automotive industries like oil and gas, hotels, and places where flammable gases are used in abundance, a gas detection system is a basic requirement for safety. An [**IoT powered gas detection solution**](https://www.biz4intellia.com/blog/5-industries-where-gas-detection-systems-are-very-essential/) uses gas sensors to identify the presence of toxic gases such as CO2, CO, NOx in the industrial facilities.

Especially, in the oil and gas industry where many gaseous products like propane, butane, and hydrogen are manufactured at a greater level. Hence, the chances of gas explosions are higher as these gases are easily combustible in the oxygen-rich environment. Apart from these, toxic gases like hydrogen sulfide (H2S) is produced during refining processes that might harm the workers’ health. Thus, it becomes a necessity to keep a real-time check on gas production. If these toxic gases are released untreated, their harmful contaminants result in air pollution and acid rains.

BUSINESS MODEL/FINANCIAL BENEFITS:

* Get real-time alerts about the gaseous presence in the atmosphere
* Prevent fire hazards and explosions
* Supervise gas concentration levels
* Ensure worker’s health
* Real-time updates about leakages
* Cost-effective installation
* Data analytics for improved decisions
* Measure oxygen level accuracy
* Get immediate gas leak alerts

IoT networks are well-known for their low energy consumption and low power transmission, which allows the assets to operate for a longer duration and generate precise data information.[An IoT-powered gas monitoring solution](https://www.biz4intellia.com/blog/applications-and-benefits-of-using-gas-monitoring/) works through sensors that provide accurate data regarding the presence of toxic gases in the atmosphere. It is a very useful system to implement in the industries or plant facilities to avoid catastrophic explosions. With the help of a gas monitoring solution, you can successfully measure temperature and humidity in the atmosphere, which results in improved plant facilities and ensures employee health safety.

SCALABILITY OF SOLUTION:

To short out the problems faced by LPG gas consumers, here come up with some solutions to meet the few requirements of them. To make our system is completely automate the process of refill booking without human intervention. Our system is also helping customers to upgrade their safety norms. The main motto of our project is to monitor the gas present in the cylinder and displayed it to user and also the new cylinder is booked automatically through the Wi-Fi module when the gas gets emptied. Another motto of our project is to detect the gas leakage through the gas sensor it activates the buzzer and shut down the total power supply.