Dual-Fuel Bike (LPG cum Petrol)
Ansari Shehbaz¹ Barai Santosh Santram² Shaikh Shahzad³ Thakur Mohammad Shakil⁴
Prof. Junaid Sidat⁵
¹,²,³,⁴,⁵Department of Mechanical Engineering
¹,²,³,⁴,⁵Theem College of Engineering

Abstract— Gaseous fuels such as liquefied petroleum gas (LPG) and liquefied natural gas (LNG) has been widely used in commercial vehicles. This project evaluated and experimental investigation on liquefied petroleum gas (LPG) as an alternative fuel for four stroke spark ignition engine. The primary objective of the study was to determine the performance and the exhaust emissions of the engine using different fuels.

Key words: LPG, PETROL, liquefied natural gas (LNG)

I. ACKNOWLEDGMENT
Firstly, we would like to express out deep sense of gratitude to our college “THEEM COLLEGE OF ENGINEERING” that provided us an opportunity to do a project entitled “DUAL FUEL BIKE”.

We thank Dr. N.K. Rana, Principle, THEEM COLLEGE OF ENGINEERING, Boisar for providing the necessary support. We would like to place on record our regards to Prof. Shakil Tadvi, Head of the mechanical engineering department, for his continued support.

We would like to thank our project guide Mr. Junaid Sidat, Lecturer, for his continues support and valuable guidance towards successful completion of the project.

II. INTRODUCTION
Dual-fuel term itself suggest us that the using of two fuel in a system. Our dual-fuel project is to run a bike on two fuels i.e. LPG and PETROL. Usually a bike normally runs on a petrol fuel in some cases diesel powered bikes are also available in the market, but the problem is that these fuel’s resources are danger in scarcity and also burning these fuels raises global warming which is also a great threat to the entire world. Running bike on LPG and petrol is combination from which we can actually select what we want, POWER or EFFICIENCY. Although we can run the bike entirely on LPG as we recently available BS4 pollution control BHARAT norms rated cars and busses which is capable of running on LPG, but the problem is that we can’t put a bigger LPG tank as we have space limitation in the bike.

III. COMPONENTS
LPG Kit is group of components which makes the vehicle to run on LPG as well as on petrol too. Following are the components of LPG kit.

A. Multifunctional Valve:

Fig. 1: Multifunctional Valve

B. Pressure Regulator:

Fig. 2: Pressure regulator

C. Wire Harnesses:

Fig. 3: Wire Harnesses

D. Hoses and Connectors:

Fig. 4: Hoses and Connectors
E. Air Gas Mixer:

![Air Gas Mixer](image)

Fig. 5: Air Gas Mixer

F. LPG Tank and Bike:

![LPG Tank and Bike](image)

Fig. 6: LPG Tank and Bike

IV. METHODOLOGY

First we take a BAJAJ PULSAR BIKE and remove its CARBURETTOR so that we can put the mixer between engine and carburettor. Also connected a nozzle which senses the vacuum signal. After that we fitted a LPG tank inside the dikki of bike and connect the LPG output with LPG kit. In between them we fitted the solenoid valve. It receives the signal from changeover switch and supply the LPG as per required. When we press the button then LPG goes from LPG tank to LPG kit. After that it flows into the mixer in which air is mixed with LPG and it goes inside the cylinder.

If you want to run the bike on petrol then simply press the changeover switch. It gives the signal to solenoid valve which get turned off and cut the supply of LPG as well as it gives the signal to petrol solenoid valve which supply the petrol from carburettor to the engine. So engine run on petrol.

V. CONCLUSION

The above project is to minimise overall running cost of the bike and making it useful for daily use by reducing its cost. Also we can to reduce the Harmful Emissions and decrease the danger of ozone depletion by utilizing a clean fuel in our bike engine.

VI. FUTURE SCOPE

In this revolutionary time where technology is drastically changing every day, the branch of automobile is also growing and changing. Now a days fuel injection bikes are coming in the market which gives proper air-fuel ratio.

So we can use two fuel-injector, one for petrol and other for LPG. Because of this problem of running the bike until petrol get empty from carburettor while changing from petrol to LPG is eliminated and we can smoothly change the fuels.

REFERENCES

[2] Automobile Engineering Volume 1, By Kripal Singh