LPG TREND IN GROWING ECONOMIC COMPONENTS OF INDIA

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Abstract

India has recorded impressive rates of economic growth in recent years, which provide the basis for more ambitious achievements in the future. Study about LPG and its performance in economic factors is a wider concept and can help to determine the future economy level in the consumption of alternative energy like LPG. This study has utilized secondary sources to collect the required data related to the selected topic. Further, collected data have been analyzed by applying the compound Annual Growth Rate and diagrammatical presentation also given to identify the data fluctuations. Consumption of LPG growth rate is found at 10.62 percent in 2014-15, International price of LPG exposed high growth rate in 2007-08 at 36.78 % from 2006-07 at 3.87% and LPG production also at 9.84 percent in 2014-15. Energy statistics 2013, 2015 and 2016, Petroleum Planning Analysis Cell (2013a) were the supportive sources towards completion of this study.

Keywords: *Consumption, Domestic, Economic factors, future economy*

Introduction

Energy has always played an important role in human and economic development and in society's well-being. For example, fuel wood has been used from time immemorial to make fire, as wood was abundant and free (International Energy Agency 2005). Energy is one of the most important factor for human development, and, as such, acts as a key factor in determining the economic development of all countries. In an effort to meet the demands of a developing nation, the Indian energy sector has witnessed a rapid growth. Areas like the resource exploration and exploitation, capacity additions, and energy sector reforms have been revolutionized. However, resource augmentation and growth in energy supply have failed to meet the ever increasing demands exerted by the multiplying population, rapid urbanization and progressing economy (Energy Statistics 2012). India faces a significant challenge in providing access to adequate, affordable and clean sources of energy, especially cooking fuel to a large section of the population, most of who live in rural areas. As per the 2011 Census, almost 85% of rural households were dependent on traditional biomass fuels for their cooking energy requirements.

Objective

The objective of the study based on the selected topic follows as, .

- To know the revelation of LPG trends in major economic factors.

Methodology

This study has utilized secondary data for a period of ten years from 2005-2015. Diagrammatical presentation have brought to point out the fluctuations of collected data analyzed through Compound Annual Growth Rate (CAGR) and the required data has been taken from Energy statistics 2013, 2015 and 2016, Petroleum Planning Analysis Cell (2013a)

LPG

LPG being an environment- friendly and clean fuel, is a replacement for traditional fuels like coal and fire wood. On account of dearth of traditional fuels, the use of LPG as cooking fuel

has become unavoidable for people in both areas in rural and urban. Because, it is today an ideal fuel for modern kitchens and has better reliability and convenience. LPG is available in compact of 5kg cylinders for rural, hilly and uncomfortable areas, 14.2kg cylinders for domestic use, 19kg and 47.5kg for commercial and industrial use respectively. LPG is a blend of butane and propane reality and liquefied under moderate pressure. LPG vapor is heavier than air; thus it normally settles down in low- lying places. Since LPG has only a faint scent, a mercaptan odorant is added to help in its detection. In the event of an LPG leak, the vaporization of liquid cools the atmosphere and condenses the water vapor contained in it to from a whitish fog which is easy to observe. LPG is fairly large concentrations which displace oxygen leading to a nauseous or suffocating feeling (P.Poongodi 2014).

Sector Structure

LPG in India is primarily marketed by the three main public sector oil marketing companies (OMCs)—Indian Oil Corporation Limited (IOCL), Bharat Petroleum Corporation Limited (BPCL) and Hindustan Petroleum Corporation Limited (HPCL). For household use, LPG is largely supplied in 14.2 kg cylinders, and is sold at both domestic (subsidized) and commercial (non-subsidized) rates (with domestic sales accounting for around 80 per cent of consumption in FY 2012/13).1 Direct purchase of LPG cylinders in the formal sector requires possession of a registered LPG connection at an LPG dealership. As of April 2013 the Ministry of Petroleum and Natural Gas (MoPNG) recorded a total of 12,610 LPG dealerships (up from 11,489 in 2012), with IOCL accounting for approximately half (6,467 dealerships, serving a total of 73.4 million domestic customers) and HPCL and BPCL accounting for a further 25 per cent each (3,194 dealerships serving 39.6 million customers, and 2,949 dealerships serving 37.4 million customers respectively). There is currently a wide disparity in the distribution of LPG connections between individual states and regions and within them, between urban and rural areas (Subsidies to Liquefied Petroleum Gas in India: An overview of recent reforms 2014).

Demand for LPG

The last 15 years have seen world LPG demand growth outpace total petroleum demand. For 1985-2005, Purvin & Gertz estimates that total LPG demand growth will average over 3.5%/year, while total petroleum demand over this same period will grow approximately 1.7%/year. The increased demand for LPG, mainly from petrochemical feedstock and residential-commercial end-use sectors, will change historical trade patterns for LPG during the next several years. Global demand for LPG stands 200 million tones/year approximately from 19 85. During the 1990s, world LPG demand rose on average nearly 3.7%/year, compared to about 1.5% for total petroleum demand. The developing economies of the world, particularly in Asia and Latin America, continue to demonstrate the most dynamic growth in LPG demand. In 1985, total world LPG demand was approximately 116 million tones but, during 1990-1999, the world average growth rate for LPG demand was approximately 3.7%/year. Total LPG demand in Asia will increase from slightly more than 20 million tones in 1985 to more than 65 million tones in 2005 (www.ogi.com/articles/print/volume9).

National Sample Survey 2009-10 reveals the continued dependence on firewood in rural areas for cooking, with percentage of households depending on firewood remaining at 76.3% in 2009-10 – a drop of only 2 percentage points since 1993-94 – even though the percentage using LPG has increased from about 2% to 11.5% over the same period. On the other hand, the incidence of dependence on firewood for cooking in urban areas has fallen from about 30% to 17.5% between 1993-94 and 2009-10 – a drop of more than 12 percentage points – and the incidence of dependence on kerosene has plunged from 23.2% to 6.5% during the same period – a 72% fall, while the percentage of urban households using LPG has more than doubled from under 30% to 64.5%. In other words, the growth in prevalence of use of LPG in urban areas has been balanced by a decline in use of kerosene, in the first place, and firewood and chips, in the second. In rural areas, the rise in LPG use has been mainly at the expense of dung cake, followed by kerosene and 'other' sources (Energy Statistics 2013).

Supply of LPG

LPG was introduced as a domestic fuel in the 1960s. Until the economic reform programs were put into operation, state-owned companies handled the entire production and marketing of LPG. The demand for LPG has grown from less than 200,000 tons in 1970-71 to about 5 MT in 2000. The average growth rate in demand has been around 12% annually. There are around 40 million LPG customers. LPG demand was estimated at 7.5 to 9.0 million tons (MT) by 2001-02 and 10.0 to 12.0 MT by 2006-07. The projected supply was only about 4 to 5 MT by 2001-02, leaving a gap of about 3 MT (CEE 2002).

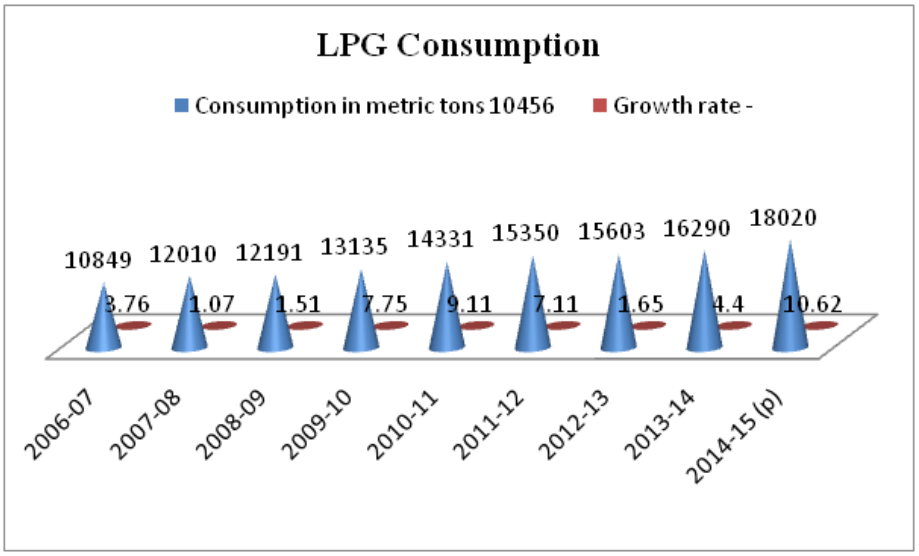
The Central Government or the Chief Executive Officer of a Government Oil Company may sanction more than one connection of liquefied petroleum gas under the Public Distribution System in favour of any person, keeping in view the difficulty and hardship experienced by such person in obtaining supplies of the LPG. The supply of liquefied petroleum gas to domestic category consumers shall be made in 14.2 Kg capacity cylinder and to those falling under non-domestic category shall be made in 19 Kg/47.5 capacity cylinder, or in such capacity cylinders as may be notified, by the Central Government from time to time (Ministry of Petroleum and Natural Gas 2000).

Consumption of LPG

As the recent growing trend on consumption of LPG has become wider among public consumers, significance to identify the growth of consumption is prompt among the consuming goods. When the consumption of such goods and services comes to increased ratio, there will be great dynamics surpass on the economic status of the country. At the same time the efficiency of rational consumer's desires on demanding goods have to be enriched.

Consumption of LPG as a tool for cooking and transporting purpose in various fields of sectors has undertaken thereby, amount of its ratio has been raised based on periodical evaluations. Therefore, remain economic infrastructures indirectly shaken towards either upward or downward

Diagram: 1Consumption of LPG in Metric Tons



Sources: Petroleum Planning Analysis Cell (2013a)

Above data observed table and diagram have revealed pertained to the consumption of LPG in India along with different period and found some of fluctuations itself. The alternated growth rate has points the variations of consumption trends, among the mentioned period, 2010-11 year pointed high growth rate at 9.11 percent among other results due to price of other petroleum product were high during the same period of time and during 2007-08 the consumption of LPG was at 1.07 gave it is very less consumed ratio.

Further, it shows that the decreased ratio between 2006-09 and 2011-13 so the consumption ratio of LPG has been decline because alternative energy equips increasing due to improvements of technology based on the result of this table.

International Price

On the economic dealings, price plays a vital role between two communications and it can determine the value of products and services. Price of such things have been affixed by indirect factors like direct consumers and therefore, price of the product will be high rather than the injected cost of productivity. Thus, the production of LPG has several processes that consist of a number of valuable materials and each of their cost would be high leading to the higher price of LPG.

Initially it was not consumed by economically backward families but nowadays most of the casual people have come to consume this without price consideration. Though, the LPG price of domestic customers may be less of the international price, this is a common price injected for whole nation. But due to economic condition of the respective country it may differ- lower or higher. The following table represents the international price level of LPG.

Table: 1 International price level of LPG

Year	International Price	Growth
2005-06	481.04	-
2006-07	499.67	3.87
2007-08	683.49	36.78
2008-09	688	0.65
2009-10	582.69	-15.3
2010-11	745.29	0.02
2011-12	899.42	20.68
2012-13	887.08	-1.37

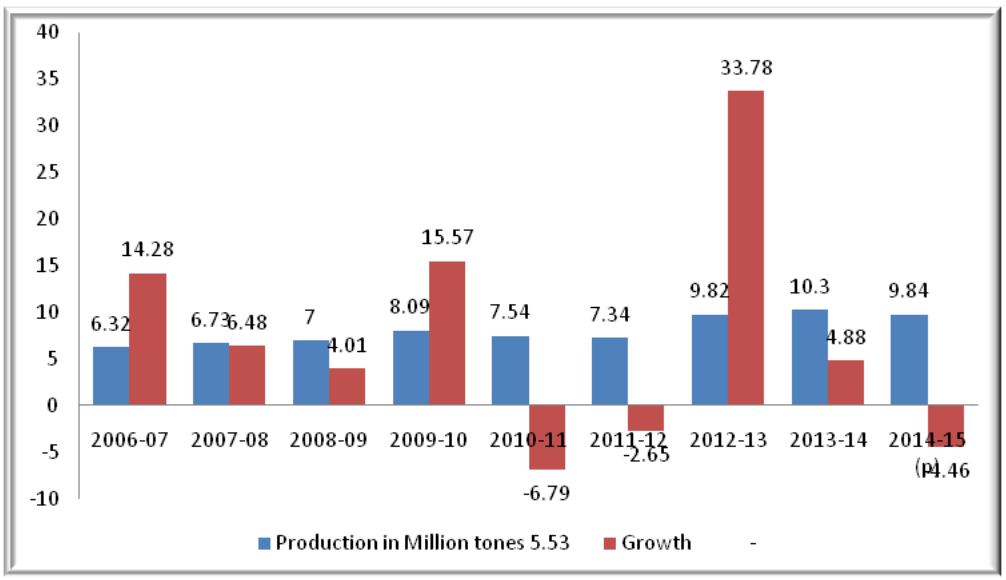
Source: Petroleum planning Analysis Cell (2013)a

Growth rate shows the great fluctuations of price level in different periods especially, high price of LPG is found in 2007-08 and very less in 2009-10. However, compared to the injected price of LPG in 2005 at 481.04 and 2013 at887.08 is great and it's ratio also have been increasing but the increasing price ratio in growth rate shows a negative value in 2013.

Production of LPG

Production plays its role on the consumption progress where the is productivity is at a high ratio there will be the consumption of goods and it's demand will be the same ratio. Accordingly consumption and price of LPG has determined the productivity of itself. Improvements in productivity leads to economic changes like progressing the human resources and skills on one hand and on the other hand to equip the economic factors directly or indirectly rather than the inventory of goods.

Diagram: 2 Production of LPG in Million Tonnes



Source: Energy Statistics 2013, 2015 and 2016

Production of LPG, based on the given periods is found to be fluctuating. During, 2010-11 LPG productivity is found at negative value -6.79 while the production of 2006-07 is at 14.28, but the final result 2012-13 shows high productive ratio at 33.78 this was great among the result followed by past. Though, the LPG productivity increases from 2011 onwards but declines during 2006-09 based on the engraved table above.

Subsidies to LPG

India continues to incur budgetary and non-budgetary expenditure of over INR40,000 crore per year subsidizing liquefied petroleum gas (LPG) consumption. LPG consumption in India has more than doubled over the last decade, with a compound annual growth rate of 7.2 per cent in the five-year period. LPG cylinders are currently subsidized through two mechanisms: direct subsidy and OMC under-recoveries. In addition to direct budgetary subsidies, the Government of India exercises control over LPG pricing and distribution through its controlling shares in the public sector OMCs, which are managed through the MoPNG. The government regulates the price at which the OMCs can sell certain petroleum product currently diesel, Public Distribution System (PDS) kerosene, and domestic LPG. Subsequent to the realization of under-recoveries by the OMCs, the government then applies burden sharing mechanism, distributing the total subsidy cost between the exchequer (through direct budgetary transfers to the companies, and, prior to 2009/10, through the issue of government-backed oil bonds), the OMCs, and the main upstream and midstream Public Sector Undertakings (PSUs). Primarily Oil and Natural Gas Corporation (ONGC), and to a lesser extent Oil India Limited (OIL) and Gas Authority of India Limited (GAIL).The government's intention to extend the application of DBT to LPG subsidies, on April 5, 2013, the government announced the National Committee on DBT's decision to introduce direct transfer of LPG subsidy in 20 districts, effective May 15, 2013, with the stated objective of extending the system to all districts of the country by October 2013 (Subsidies to Liquefied Petroleum Gas in India: An overview of recent reforms 2014). Moreover, recently the government has launched a scheme 'Pradhan Mantri Ujjwala Yojana' on 1st may 2016 onwards to provide five corers LPG connection to people living under below poverty before 2019 and make country without primary energy consumers.

Findings and Result

According to consumption ratio of LPG at 2010-09, the result indicates high rate due to price of other petroleum product which were high during the same period of time 2012-13 results shows that consumption of LPG is declining because alternative energy equips were increasing due to improvements of technology. The international price of LPG at negative value that shows in 2012-13 due to subsidies provided by government and few reduction on consumption ratio. Further, price of LPG unable to determine strongly at a single price because government's policies and subsides have directing the price level to be vary in different categorized regions of the country.

Production of LPG at 2012-13 shows great result because the international price of the same have been increasing at low ratio thereby, expectation of producers on the demand of LPG will mount up. Data on 2014 and 2015 in consumption and production of LPG has been

increasing. though, consumption ratio is growing up rather than production level of the period due to initiatives of government policies has promoting the people's LPG consumption ratio and it expects to get high level consumption ratio further because of the government's targets towards making country without primary energy consumers. But, growing power of economic factors on LPG consumption possible to make country debt due to high imports of production from abroad and it can create imbalance trade if the trade policy roles horizontally.

Recommendations

Some of recommendations has been put forth which will prove to be effective and supportive to the policy makers and further research.

- Government should regulate the creation of demand of LPG to maintain energy for sustainable development.
- Price of the LPG need to inject by authority for equalize the production costs and consumer's satisfaction.
- Necessary steps should be powered on the LPG performance in economic factors.
- LPG subsidies must be regulates by the government to reduce further demand for LPG throughout the nation.

Conclusion

The study on the "Census of LPG in India: Economic viability" has pointed present and past structure of economic viability of LPG along with framed objectives and each of them has revealed its significance and performance on LPG. The analysis shows the details of data interpreted based on the appropriate economic components along with each of their descriptions and fluctuations.

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