

## Short Fall of Compressed Natural Gas (CNG) and Issues Of Affected Community; An Anthropological Perspective

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**ABSTRACT:** A strong energy sector in any of its form is one of the main development indicators of any country. In this regard, Compressed Natural Gas (CNG) is comparatively less priced than other fuels like petrol and diesel. Pakistan is world's third largest consumers of CNG where 100,000 vehicles use the same fuel. Whereas, at present Pakistan is facing its history's worst gas short falls. Multiple reasons of this crisis are reported but one of the major reasons is issuance of unlimited licenses for establishing CNG stations without developing and following any policy. Present research plans on to find out impact of CNG shortfall on socio-economic state of its consumers. For data collection, a self-administered structured questionnaire was used following a pilot testing to rectify the possible errors. Study respondents comprised of both men and women belonging to different age groups whereas main groups lied between 25 to 30 years.. Findings of study showed that CNG shortfall have a vital impact on economic condition of consumers and 100% of the respondents confirmed an additional monthly burden on their budgets from minimum PKR.1000 to above PKR.3500. Whereas findings regarding impact of this crisis on social lives of people reveals that people are having less social gatherings, routine late arrivals at offices; restrict family affairs etc. Long queues for hours and hours consume most of productive time of working class leaving them with economic loses. Finding also reveals that government has no clear policy to encounter the situation to make people's life easy and for a better tomorrow. However respondents think that if willing government can improve the situation by taking measures like control line losses, explore new gas resources, reduce gas permits and serious policy making along with strict implementation of laws.

**Key Words:** Energy Crises, CNG, Socio-economic status, Policy, Primary Energy

### INTRODUCTION

In Pakistan, around 3.5 million of vehicles are refilled by the CNG as compared to other fuels like petrol and diesel. Global surveys reported Pakistan is largest CNG consumption country in the world. But Pakistan's gas equipment can't bear this required amount of gas while also feeding power plants, fertilizer companies and other businesses that rely on the fuel<sup>1</sup>.

In last ten years, Pakistan has experienced an extremely swift increase in primary energy demand. Figures shows, there is an about 150% increase in primary energy utilization over the last two decades<sup>2</sup>. The primary energy is a broader expression which covers all basic forms of energy such as electricity, gas and fuel for transportation both for commercial and individual applications. Any kind of disturbance among these primary energies is meant to be the disturbance in everyday life as well in industrial sector.

As human societies evolved from normal to complex civilizations, the requirement for energy of human has endlessly increased. Present day, the main feature which accelerates the growth in energy requirement based on growing human population, modernization and urbanization. According to the United Nations, the world population 6.5 billion in 2005 is to grow to 9.1 billion by 2050 and the majority of the population expansion is projected to place in the developing world Asia and Africa<sup>3</sup>.

World largest CNG user is Pakistan, declared in earlier 2010. Right now, more than 3,000 CNG stations are in

service in 99 cities and towns, and more than 1000 would be installed in the next two years. These stations provided employment to over 50,000 people in Pakistan. But now; by the excessive use of this precious reserve in transport made the power sector very hanging<sup>4</sup>.

Natural Gas is a significant attribute of Pakistan's energy mix, currently representing 49% of total consumption, mainly for the power production, residential and manufacturing sectors. Oil makes up 31% and nearly all of this is imported<sup>5</sup>. According to the Ministry of Petroleum and Natural Resources, during 2007-08 the production of gas improved from 3837 to 3973 million cubic feet per day recording a increase of 2.6% but the at the similar, the growth in utilization increased by 4.4% which out positioned the growth in production of the gas<sup>6</sup>.

Pakistan has exploited its gas treasure, which to some extent explains why gas is such a huge component in Pakistani energy mix. The Pakistan Government has still showing its keen interest to improve domestic gas production, concerning it as the country's fuel of preference. Highlighting this has been the extraordinary increase of liquefied natural gas consumption in Pakistan, which now boasts the world's largest number of gas-fueled cars<sup>7</sup>. At one time Pakistan is the first country in the world using the gas for transport proposes, but now the situation is quite critical when you say this, due to the much shortage in gas production and gas demand.

In Pakistan, during the last administrative years of Musharraf Government energy crises was being started and get worse within couple of years. After Musharraf next democratic Government of PPP showed less interest to tackle this serious problem and take no significant action to make the situation better for prosperity of an individual level to the nation level, except signing one memorandum with Iran for Gas pipeline during their last months of administration. This study focused on the problem being faced by the Pakistani vehicle owner both in terms of personal and commercial proposes during the shortage of CNG fuel.

## MATERIALS AND METHODS

This study was conducted in twin cities of Pakistan i.e. Islamabad and Rawalpindi. Total, 08 CNG stations (04 each, Islamabad and Rawalpindi) were purposively selected. With an objective to collect the opinion of those people suffering from CNG short fall, researchers visited selected CNG stations in those days when CNG was available. People who were present at CNG stations for gas filling were interviewed while using a structured interview guide. Before final data collection, a pre-testing was performed to rectify the errors. In total 150 individuals were interviewed (75 each Islamabad and Rawalpindi). SPSS17 was used for the data punching and analysis too.

## RESULTS

**Table 1: Age distribution of Respondents**

Age	Frequency	Percentage
Less than 19	1	0.70
20-35	104	69.30
36-60	42	28.00
61 and above	3	2.00
Total	150	100.00

Table 1 shows participant's distributions by age and out of total 69.30% of the respondents belong to the age group 20-35 years, in 28.00% cases respondents were in the age group 36-60 years. Only .70% respondents were less than 19 years of age and 2.00% respondents were more than 61 years old.

**Table 2: Sex distribution of respondents**

Category	Frequency	Percentage
Male	140	93.3
Female	10	6.7
Total	150	100

Table 2 shows the gender distribution of the respondents and data shows that 93.30% were men and 6.7% were women.

**Table 3: Occupational Status of respondents**

Category	Frequency	Percentage
Govt. Employee	31	20.70
Private	87	58.00
Business	17	11.30
Others	15	10.00
Total	150	100.00

Above table shows occupation of respondents and figures tells that 58.00% of the respondents were from private sector and 20.70% from government, whereas 11.30% have their own business and 10.00% with other different occupations. This data show that maximum input in this study came from the private job holders and this is very significant result to explain the level of suffering during energy crises for a private employee.

**Table 4: Impact of CNG crisis on economic status of its consumers**

Category (PKR)	Frequency	Percentage
1500 and less	11	7.30
1500-2500	36	24.00
2500-3500	45	30.00
3500 and Above	58	38.70
Total	150	100.00

Table No. 4 shows additional expenses people have to bear in absence of CNG. Results show that 100% reported an increase in travel related expenses on monthly basis. Whereas 97% reported an increase from PKR.1500 to above PKR.3500 and 7% shared an increase below PKR.1500. These figures depict a clear burden on monthly budget of an individual and ultimate bad impact on his socio economic status.

**Table 5: Impact of CNG crisis on social life**

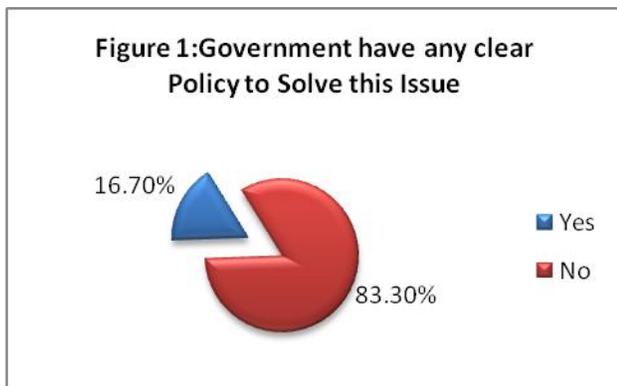
Category (PKR)	Frequency	Percentage
Make you less social	60	40.00
Delay from office	46	30.70
Restrict Outing	30	20.00
Others	14	9.30
Total	150	100.00

Above table shows effects of CNG crises on social lives of respondents. Out of total, 40.00% respondent said that due to waiting in lines they miss most of social gatherings. And uncertain availability of the fuel restricts their movement. Similarly, 30.70% cases respondent were of the view that they were not able to reach office on time, 20.00% respondents confirmed that CNG crises limits their outdoor family and social activities and 9.30% mentioned other effected activities.

**Table No. 6: Number of hours (per day) spent in a queue for gas refilling**

Category (Hours)	Frequency	Percentage
Less than 1	18	12.00
1-3	91	60.70
3-5	33	22.00
Above 5	8	5.30
Total	150	100.00

Table 6 shows number of hours being spend on CNG stations on daily basis for fuel, and out of total respondents 60.70% people wait from 1-3 hours in the line for refilling, whereas 22% reported 3 to 5 hours daily. While a wait of 05 hours daily in a line leaves very less time for other activities.



**Figures 1:**

Figure 1 shows respondent’s opinion whether government has any clear policy to address this short fall and data shows that 83.30% respondent were of the view that Government of Pakistan has no clear agenda to solve this problem. Whereas 16.70% were of the view that government is developing policy guideline for a sustainable solution of this problem.

**Table 8: Roots of CNG short fall crisis**

Category	Frequency	Percentage
Yes	130	86.70
No	14	9.30
Others	6	4.00
Total	150	100.00

Table 8 shows opinion of respondents about misuse of gas and line losses which generated energy crises in Pakistan. In 86.70% reported that misuse and line losses are one of the major root causes in Pakistan, only 9.30% said that misuse and line losses are not the main cause whereas, 4.00% argued that some other reasons are also involve in developing this situation like theft corruption and efficiency etc.

**Table 9: Suggestion to improve CNG supply**

Category	Frequency	Percent
Control Line Losses	71	47.33
Limited CNG Station Permits	14	9.33
Serious Policy implementation	17	11.33
Explore New Gas	22	14.68
CNG for 1000cc vehicles	26	17.33
Total	150	100.00

Above table shows respondents opinion how to improve the situation, and out of total 150 respondents, 47.33% believe that effective control of line losses can make situation better in short and long terms both. And 9.33% respondent said limited issuance of permit for new CNG stations can also be helpful and 11.33% were of the view that government need to legislate doable polices and a clear roadmap for the effective implementation of the same. Whereas, 14% said that new and alternate energy sources should be explored and 17% suggested limiting CNG to vehicles under 1000cc only.

**DISCUSSION**

In Pakistan, people have no state provided social protection system, on the contrary state’s pro rich economic policies push commoners to numerous issues like poverty, high inflation rates, lack of resources, unemployment and continuously prevalent security threats etc. Another major reason of this situation is disparity between the demand and supply due to limited resources and extensive users.

As population of Pakistan is increasing day by day and no serious efforts to bring the escalating population growth down has been every done by any government. Similarly a huge number of vehicles were converted into CNG without anticipating that excessive usage and absence of new resources will generate a dearth of this energy source in future. This certainly is aftermaths of poor planning and lack of commitment. Now, the result is unavailability of required energy in any of it’s form whether its electricity, gas or water. And regular load shedding of electricity and CNG has affected person of every walk of life. Long queues of vehicles can be seen outside of any CNG stations of both cities effecting people socially, economically and physically as well.

Every government has vowed to solve the issue even the supreme court has taken some measures by cutting the commission money being received different levels and reduced the per kg price from PKR. 88 to PKR.60 but situation have become worse day by day. Now CNG in (Islamabad and Rawalpindi) is available only 04 days of a week leaving people in miserable situation for rest of 03 days. However, no government has undertaken any serious steps to bridge this widely prevalent and ever increasing gap between demand and supply and people’s troubles are on rife. 3e

Globally, energy prosperity has become very crucial to overcome fundamental social problems such as poverty, hunger, disease and illiteracy. The growing human reliance on energy has been paralleled by a string of challenges that are both local and global in nature. It is increasingly understood that ensuring availability of sufficient, affordable, and environmentally friendly energy' is one of the major challenges faced by the world in the twenty first century by the world generically and developing countries especially<sup>8</sup>.

Among the fossil fuels, gasoline is the principal fuel for light-duty vehicles to reduce travel expenses. Situation in Pakistan is similar to some extent with Iran, where fuel consumption especially that of gasoline has increased sharply with the growth rate of 10.2% for the year 2006 in comparison with that in 2005, turning into a big crisis in the recent years as seen in Pakistan now a days. A foregone conclusion strongly suggests that not only the low price of motor gasoline but also mass production of vehicles with the conventional technology, likewise, affects motor gasoline demand. Alternate fuel rate is high. If gasoline is poorly available, the ultimate effect on socio-economic life especially HH expenses definitely suffered<sup>9</sup>.

The shrinking disparity between the petrol and CNG prices coupled with greater reliance on petroleum products after unavailability of natural gas also pushed up its daily consumption/expenses during this period, along with the wastage of time while waiting too many hours to refill the fuel<sup>10</sup>.

The energy crisis requires extra, physical infrastructure despite political and social resistance. It advocate an increase in the utilization of oil, natural gas, tar sands, coal, nuclear, hydropower, solar, biomass, hydrogen, wind and other renewable. The most impending energy issues for are not related to the environment, but to social welfare. Although, the immediate environmental ramifications of current practices are not on the scale of the current social needs<sup>11</sup>.

## CONCLUSION

Based on the above given findings, it can be concluded that this shortfall of CNG has left a significant bad impact on common men's personal and social lives, their business and on overall economy of the country. All this has happened mainly due to poor planning and inability of the relevant departments to anticipate the consequences nation is facing due to establishment unnecessary and more than required number of CNG stations in the length and breadth of the country. This poor decision has affected the country's industry and its electricity producing companies too because of these CNG stations both these pillars of economic growth of country are not being provided due share of CNG and whole economy of the country is facing a huge setback.

Moreover, lack of political will and commitment of the concerned departments to solve administrative and management issues like control of line losses, checking theft, and reducing corruption etc. has aggravated the condition.

However, situation can be still controlled through taking effective and efficient measures like control of line losses, reducing number of CNG stations, exploring new gas reservoirs, limiting CNG for under 1000cc vehicles and above all clear policies to implement all these suggestions. Above all, a strong political will and commitment to solve this conundrum for an improved life of common citizens, a better environment and prosperous Pakistan is the need of the hour.

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