CHAPTER 9
SUMMARY AND CONCLUSIONS

9.1 INTRODUCTION
Nowadays, energy use and its impacts are dominant themes in the political and economic discourse of most countries. Energy dependence issues influence policies ranging from those related to common daily activities (such as transportation and household tasks) to industrial production, and therefore also international markets. There is a need for general awareness that these issues do not only involve governments, but affect everyone in terms of their general activities.

In addition to carbon emission commitments, energy needs that exceed national production levels involve political, economic and operating dependences among countries. These energy constraints put countries under pressure to make improvements in the use of energy across all sectors. This includes improvements in the way in which energy is used in the residential sector, which is affected by the energy efficiency of appliances and electronic equipment. It should be kept in mind that, within the larger macroeconomic and geopolitical frame, domestic energy savings cannot be considered an exclusive responsibility of households but should involve a broader set of stakeholders. Achieving the best results in terms of saving energy will require that consumers, services (including retail sales staff) and government work together (Gaspar and Antunes, 2011).

A high percentage of in-home energy consumption is associated with the use of major household appliances. According to a study conducted by Alexander Boegle et al., the appliances of Indian households consumed about 152 Twh (Tera Watt hours) of electricity in 2008 (Boegle et al., 2010). In order to decrease this component of energy use, both an increase in energy use efficiency (through the adoption of higher efficiency class appliance models) and the promotion of more ecological consumer behaviors (through better use of electrical appliances) should be undertaken.
There has been much speculation about the explanation for the low take-up in domestic housing sector of energy-efficient products and energy efficiency measures. To ensure that appropriate policies are designed to encourage people to adopt such measures, it is important to know why they do not currently do so. Indeed, in understanding the reasons, it is possible to determine how to make energy efficiency improvements more attractive to householders. Although energy efficiency policies absorb millions of rupees a year in direct or indirect public expenditure, there are gaps in the empirical evidence needed to support the evaluation of policies or to understand the market failures that justify government intervention. This research has contributed a bit in correcting that imbalance.

9.2 INTENT AND CONTENT

The task of understanding energy-consuming behaviors presents substantial complexities. The complexities involve determining both the factors that influence energy-consuming behaviors and the nature of their influence. The potential factors include Demographic and Economic background, Possession and Awareness of energy efficient technologies, Personal/Behavioral factors, Financial factors and Government policy. The nature of influence includes relationships that predispose, circum-scribe, enable, or mediate energy-consuming behaviors. For example, positive attitudes toward energy conservation would be expected to predispose to lower energy consumption. On the other hand, climate would circumscribe the extent to which energy conservation is practical, and income would enable possible energy conserving capital investments. Further, there are family decisions, such as family size, that mediate energy consumption in the sense that although they influence consumption, the decisions are made with no direct consideration of energy consumption consequences. Finally, other factors exhibit multiple types of influence on energy consumption. For example, the family dwelling circumscribes energy consumption due to the standards of construction in practice, but to some extent can be altered if family values result in addition of environmental friendly features. In summary, a number of factors that might influence energy-consuming behaviors can be identified. Further, several types of influence can be suggested. The research reported here follows a growing body of literature and empirical work that seeks an understanding of these complexities.
The review of available literature on household energy consumption and conservation patterns in general and of Indian households in particular revealed that an attempt to capture the characteristics of energy usage and conservation patterns of Indian households from diverse perspectives has not been made hither too. In view of this, the main objective of this research work was to identify the factors influencing the choice of EETs and conservation habits in Indian urban households and then to model them, so that they can be subsequently prioritized. Additionally, it was also decided to examine significant differences in the importance of these factors at lower and higher quantiles.

To achieve this overall goal, the following specific objectives were formulated:

➢ To identify the factors influencing the choice of energy efficient technologies and conservation habits in Indian urban households.
➢ To study the relationships between the identified factors and the choices.
➢ To model the adoption of energy efficient devices and conservation habits.
➢ To examine whether there is any significant differences in the importance of the influencing factors at higher and lower quantiles and
➢ To study the implications of these findings for policy making.

Literature survey and discussion with the experts resulted in identifying five major areas influencing the choice of EETs and conservation habits amongst Indian urban households. Under each area, several variables were considered, in all amounting to 32 variables. A questionnaire was then designed to capture information from households about these identified variables. Households expenditure data from NSSO statistics and ownership of assets data in the south Indian city of Mysore were used for income stratification. A pilot study of 50 households, chosen in accordance with the income stratification was conducted to validate the questionnaire and the method of administration. The results of the pilot study were used for the final design of the questionnaire and the method of administration. The targeted sample size was statistically computed. Full blown study was then launched choosing the households within the corporation limits of the Mysore city. The survey data was tabulated in the data editor using SPSS 14.0 version, so that it was available for further statistical analysis. Validity of the questionnaire was established using a panel of five experts and its reliability was estimated by Cronbach’s alpha.
As both were found to be satisfactory, the data was subjected to further statistical analysis so as to achieve the other objectives of the study.

9.3 SUMMARY OF RESEARCH FINDINGS

Preliminary statistical analysis revealed the following statistics:

- 47.8% of the households have four persons in the house.
- 61.5% live in independent multiple floor type of houses.
- 83.7% live in their own houses.
- The house size is widely spread out with a mean of 1650 square feet and a standard deviation of 1300 square feet.
- The qualification of 64.1% of heads of the households is degree.
- 43% of the households surveyed have an annual income between below ₹5 lakhs to 6.5 lakhs.
- 61% of the households have 20 to 30 energy consuming devices
- 47% of the households spend between below ₹10000 to 20000.
- Awareness about EETs is below average for 92.5% of the households.
- 91.6% of the households have very little or a few number of EETs.
- 81.5% of the households are very much satisfied with the performance of the EETs owned by them.
- Almost all the households (99.6%) want the EET to be a nicely packaged technical device.
- 90% of the households have very little awareness or not at all aware of environmental issues.
- 75% of the households have some awareness about energy consumption facts like per capita consumption in India, Consumption of household sector in India, Energy saving measures that can be employed and so on.
- 50% are not aware of and hence are not involved in any conservation habits.
About 56% of the households are found to be having a good concern about the environment.

66% of the households do not agree with the 'pride factor' associated with owning EETs.

94% of the households are ready to change their life styles in order to adopt energy efficient devices.

53% of the households disagree with the fact that technical gadgets make life interesting.

94% of the households are willing to invest in EETs.

98.5% of the households are willing to spend time to adapt to EETs.

90% of the households say that they will increase their investment in EETs proportional to the increase in their income.

88% of the households are of the opinion that the savings resulting from the use of EETs and the practice of conservation habits are quite significant.

62.3% of the households say that initial investment is not such an important factor for them.

76% of the households feel that not much of maintenance cost is involved with EETs.

60% of the households attach lot of importance for government subsidies.

77% of the households agree that government regulations are a must for achieving energy efficiency.

69% of the households are not at all satisfied with the government incentives.

68% of the households are not at all satisfied with the government efforts.

90% of the households feel that there is a need for providing product information in the form of energy labeling and the like.

53% of the households are not satisfied with the amount of information available on EETs and

55% of the households want insurance coverage for their EETs.
The first objective of the research study was to identify the factors influencing the choice of EETs and CHs in Indian urban households. The questionnaire covered information on 32 variables grouped under five areas. It was desired to reduce the number of variables to manageable proportion and identify the key factors influencing the adoption of EETs and CHs. Factor Analysis of Principal Component type, which is a data reduction technique was used for identifying a smaller set of variables explaining most of the observed variation, from a larger manifest of variables. After ascertaining the factorability of data using two statistics Barlett’s test of sphericity (significance = 0.00) and KMO index (= 0.739), the entire analysis was carried out with SPSS version 14.0. This resulted in the extraction of 10 key factors explaining 60% of the variance in the original 32 variables. The factor loadings of these factors on the variables were used for appropriately naming these factors. The ten factors were thus named as: 'Financial status,' 'Attitude towards EET', 'Awareness about energy and environment', 'Cost driven concern for environment', 'Willingness to adopt EETs', 'Dwelling characteristics', 'Attitude towards risk', 'Government efforts', 'Family size and Qualification'.

The second and third objectives of the research were to study the relationships between the identified factors and the choices and to model the adoption of EETs and CHs. The factor scores of the 10 factors obtained in factor analysis were used to model the adoption of EETs and CHs by the application of Multiple regression analysis. For modeling adoption of EETs, The 'number of EETs owned by the households' was treated as the dependent variable and the nine factors were used as the independent variables. The following regression equation was obtained:

\[ N = 2.389 + 0.336 \times F_1 + 0.088 \times F_2 + 0.230 \times F_3 + 0.118 \times F_4 + 0.201 \times F_6 \\
+ 0.068 \times F_7 - 0.054 \times F_8 + 0.111 \times F_9 - 0.057 \times F_{10} \]

where N is the Number of EETs owned by the household and F1 to F10 (without F5) are the factor scores.

For modeling adoption of CHs, the 'level of conservation habits of the households' was treated as the dependent variable and four factors as independent variables as only these factors were contributing significantly to the model. The resulting regression equation was:

\[ LCH = 2.867 + F_2 \times 0.223 + F_3 \times 0.251 + F_4 \times 0.716 - F_6 \times 0.092 \]
where LCH is the level of conservation habits of the households and F2, F3, F4 and F6 are the factor scores of factors 2, 3, 4 and 6 respectively.

For adoption of EETs, the multiple correlation coefficient R was 0.791 and adjusted R² 0.612, and for adoption of CHs, they were 0.733 and 0.53 respectively. Hence it can be seen that both equations show strong relationship between the observed and model predicted values. The coefficients of the factors in the two equations were taken as a measure of the strengths of their influence on the dependent variables. The factors were then ranked according to their 'B' values. Accordingly, for adoption of EETs, 'Financial status' turned out to be the most important factor and the 'Willingness to adopt EETs' the least one. For adoption of CHs 'Cost driven concern for environment' turned out to be the most important one and 'Dwelling characteristics' the least important one.

The fourth objective of this research work was to examine whether there was any significant differences in the importance of the influencing factors at higher and lower quantiles. The OLS technique which works on conditional mean frame work cannot be readily extended to non-central locations, which was required to be achieved in this objective. Hence Quantile regression technique which models conditional quantiles as functions of predictors was employed. For adoption of EETs 30%, 60% and 85% quantiles were used and for adoption of CHs 30%, 60% and 90% quantiles were used. For adoption of EETs all factors showed consistent significant differences at lower and higher quantiles except the fifth (Willingness to adopt EETs), eighth (Government efforts) and the tenth (Qualification) factors. The fifth factor was not significant at higher quantiles, eighth factor at lower quantiles and the tenth factor at all quantiles.

For adoption of CHs all four factors namely 'Cost driven concern for environment', 'Awareness about energy and environment', 'Attitude towards EETs' and 'Dwelling characteristics' showed an increasingly significant trend from lower to higher quantiles, except the 'Dwelling characteristics' which was not statistically significant at lower quantiles.
9.4 MAJOR CONTRIBUTIONS OF THE THESIS
This research work was undertaken with the overall aim of understanding the economics of energy efficiency of households in general and that of Indian households in particular. This was achieved by comprehending the energy consumption and adoption of EETs and Conservation habits of the Indian households. This study has looked at the energy efficiency and conservation attitudes of the Indian urban households from five diverse perspectives: Demographic and Economic Background, Possession and Awareness of Energy Efficient Technologies, Personal/Behavioral factors, Financial factors and Government policy. The specific objectives of the study and the methodology adopted to achieve these objectives have been explained in detail in the previous chapters. The significant contributions of this work are enlisted below:

❖ The present study has shown that in spite of the difficulties in the collection of primary data in developing countries (like heterogeneity in socio economic factors, difficulty in establishing relationship between monetary data and energy data, reliability of the income data and so on) a rigorous methodological study can still be carried out.
❖ The study has used a statistically estimated sample size of 270 households within the corporation limits of the south Indian city of Mysore. This established the fact that even when nothing is known about the population parameters, scientifically based studies can still be conducted.
❖ For income stratification, the data from NSSO and Mysore Zilla Panchayat has been used thus ensuring authenticity of data leading to credibility of the results and conclusions.
❖ The questionnaire used for the survey has received rare oral reviews from the respondents as well as from experts. So much so that, a separate chapter has been devoted for the research design, focusing mostly on questionnaire design. It is sincerely hoped that this will help triggering future research work in this area.
❖ All the statistical analyses carried out have been amply supported by the output files of SPSS version 14.0 and EasyReg softwares.
❖ Key factors influencing the adoption of EETs and CHs in Indian urban households have been identified (It is true that, this study has looked at the factors influencing adoption of EETs and CHs by surveying households in one of the south Indian cities and hence one
can argue that the conclusions cannot be generalized as applicable to the urban household sector of the country as a whole. But if one looks at the conclusions drawn about factors like the effect of Financial status, Awareness energy efficient devices, Awareness about environmental implications of energy use, Educational background, Government policies to mention a few and similar opinions being expressed by some of the studies carried out in India and abroad (as discussed under literature survey), it can be said that the results are fairly generalisable. But the results could be made more robust by carrying out similar study in a city with a different geographical location in India and comparing the two results. This can be added as the scope for further research in this area).

- Statistical significance between the identified factors and the choices of the households has been established.
- Adoption of EETs and CHs have been modeled using Multiple Regression Analysis.
- The factors have been ranked based upon the strength of their influence on adoption of EETs and CHs.
- Significant differences in the strengths of the influences of the factors for both adoption of EETs and CHs have been examined at lower and higher quantiles employing Quantile Regression Technique.
- Policy implications as a consequence of this study are also enumerated.

9.5 POLICY IMPLICATIONS
The conventional decision-making frameworks for EETs in reality are very complex and depend on multiple parameters rather than parameters that are purely energy related or economic. This study has shown that, a combination of factors including design, comfort, brand, functionality, reliability and environmental awareness and others are likely to influence households’ decisions regarding energy-efficient equipments and conservation habits. In this context what is happening in European markets to some extent also holds good for developing countries like India. The market transformation policies in India are progressing too slowly and need revitalizing: for instance, the decisions on energy labels are weak and very late. The most effective policy—minimum standards—is being replaced with the much weaker industry-promoted voluntary
agreements (Boardman, 2004). Working with industry is good, but not if it is at the expense of the environment.

What is needed is, for manufacturers to implement more responsible research strategies and the governments to consider a ‘permission to manufacture’ approach. Once a product is on the market and heavily advertised, it takes any policy several years to limit its consumption, by which time much of the harm has already been done.

The multiple regression analysis of adoption of EETs by households has shown that, the ‘Financial status’ is the most important factor explaining the adoption of EETs by Indian urban households. 48% of the households have an annual income of above ₹7 lakhs and 55.4% of these households have above average number of energy efficient devices. Hence, there is an urgent need on the part of the government to do away with untargeted and unscientifically based subsidies. According to the information available in the web site of, the Karnataka Renewable Energy Development Limited (www.kredltest.in), a total of ₹1,26,90,747 has been disbursed as subsidies to various individuals and organizations in the year 2012 alone. The high income group households don’t need subsidies and the only energy efficient device that most of the lower income group households have is solar water heater. None of these households have said that subsidy is the motivating factor for them but have cited savings in electricity bill and convenience as the main reasons for possessing the solar water heaters. Thus, instead of subsidies, the government can focus on improving the technology, availability, and maintainability of such energy and environment friendly devices.

The continued reliance on traditional fuels reflects the failure of energy subsidies to benefit the intended target population, while in the process introducing other distortions in the energy markets (TERI, 2002). Subsidies have been extensively used by developing member country governments in the energy sector to benefit particular classes of consumers (such as the poor, rural consumers, and residential consumers) or activities (such as irrigation, fertilizer production, and goods transportation). Such subsidies have often

- failed to benefit the target population;
• distorted the relative price of fuels, inhibiting fuel switching based on true economic
costs or the use of RE options;
• sent price signals that promote inefficient consumption;
• imposed a heavy burden on the supply system and environment;
• eroded the ability of the utility to undertake system expansion and connect new
customers without additional budget support;
• imposed a heavy and often unsustainable burden on the general tax revenues; and
• impeded the efficient development of indigenous energy resources.

'Awareness about energy and environment' and the 'Cost driven concern for environment' are the
second and the fourth most important factors explaining the adoption of EETs by the households.
As revealed by this study and also supported by other studies (Yamamoto et al., 2008, TERI,
2008), the 'awareness of households about energy consumption and environment' is very poor.
This fact and the possible reasons for the negative beta value of government efforts (as discussed
under section 7.2) indicate the need for massive information campaign about the government
efforts and economies of energy efficient devices. (Something similar on the lines of family
planning campaign that the government undertook several years back which paid rich dividends.
The fertility rate in India has come down from 5.7 in 1966 to 3.3 by 1997 and 2.7 in 2009
(Ramu, 2006)).

With regard to the Level of conservation habits, 'Cost driven concern for environment' is found
to be a very strong factor with a beta value of 0.716. This again reinforces the need for the
authorities to go in for massive information and awareness campaigns about the need to protect
our environment and reduce energy consumption, mainly by shifting to renewable energy
sources. It has been shown that behaviour affects residential energy use to the same extent as
more efficient equipment and appliances and that household behaviour may vary to such an
extent that residential energy use differs by a factor of two, even when the equipment and
appliances are identical (Linde’n et al., 2006). Hence, it is also of interest to discuss policy
instruments for behavioural change. Examples of behaviour relevant in this context is the degree
to which households bathe or take showers, turn off lights in unused rooms, fill dishwashers or
washing machines before putting them on, regulate indoor temperatures or put lids on pots when cooking their food.

To promote energy efficiency in individual behavior most often economic measures, e.g. pricing and taxing, are used. Lately, energy labeling has been developed for household technology as information to consumers. This study has shown that consumers ask for information about the relation between behavior and energy use in several functional spheres of home work; more user friendly technology; economic gratification programmes like bonus for lowering energy use. However, it is also very important to promote behaviors in line with recent trends in lifestyles, e.g. time saving behaviors, latest fashion for energy efficient technology or a cozy indoor environment. When trends in lifestyle, energy efficient technology and behaviors coincide, energy efficient behavior seems to appear almost automatically.

In order to lower energy use in households with policy measures, there is a need for development and renewal of policy instruments. There is also a need for better definitions of consumer groups. New policy measures ought to be developed and combined to a greater extent than today. Policy measures can be combined either in vertical communication processes or in horizontal communication processes, e.g. voluntary agreements.

But, energy information programs must earn public trust. Information by itself is not sufficient to bring about all or nearly all the energy-efficient investments that would save households money over the long term. Environmental claims of products should be formulated carefully without exaggeration. The related product labels should be awarded and controlled by one single independent competent body that will not be able to take advantage. This procedure increases consumers’ trust in the information source and, consequently, the credibility of environmental claims and the perceived efficacy of energy-saving purchasing behavior (Sutterlin et al., 2011). Furthermore, specific information about the high energy-saving potential of energy efficient investments compared to curtailment measures provided by trusted experts could temper existing prejudices against technological solutions and increase consumers’ willingness to adopt energy efficiency measures. With high problem awareness, the basic requirements are already present
and ensure that rational and objective arguments are well-received and, consequently, prove to be effective. The best way to target energy savers is by providing them with information about the trustworthiness of product labels and the high energy-saving potential of energy efficient products directly at the point of sale. The information can be communicated directly by the salesperson or by product brochures.

The current research as well as other studies (Sutterlin et al., 2011) have shown that cost savings is a main driver of energy-saving behavior (As discussed under section 7.2, 'Cost driven concern for Environment' is ranked IV). This could be a starting point for conservation campaigns designed to address the materialistic energy consumers that highly value materialistic possessions tend to think about energy-saving efforts in financial terms. This way of thinking is also reflected in their high adoption rate of energy efficient household appliances that offer them the benefit of energy cost savings without affecting their quality of life. Therefore, besides providing financial incentives in terms of subsidies, price reductions, or rewards it is also important to convey that energy-saving behavior and quality of life are not mutually exclusive. For example, in the case of a car purchase, it is essential that besides the emphasis on financial benefits, a new image is established that presents energy efficient cars as innovative, modern, and future-oriented and progressing on from the image of low-performing energy efficient products. As pointed out by Bernadette Sutterlin (Sutterlin et al., 2011) certain individuals seem to be more willing to pay to sustain their comfort and pleasure than to give up some of their quality of life. The most promising way to bring these consumers closer to energy-saving behavior is by designing campaigns that evoke curiosity and address consumers’ desire for pleasure and novel experiences. One possibility could be to hold events where consumers have the possibility to test-drive energy efficient cars.

Quantile regression of Adoption of EETs by households once again proved that the high income group is the one which has to be targeted in urban areas to introduce energy efficient devices. The importance of this factor increased by almost 9% at higher quantiles. This is also the case with the second most important factor, namely, 'Awareness about energy and environment'. While the government cannot do much about improving the financial status of the households, it
has a serious obligation in improving the 'Awareness about energy and environment' of the house hold. Establishing the Bureau of Energy Efficiency (BEE) was a step in the right direction, but still lot needs to be done on this front. In order to avoid the problem of Akerlof’s ‘market for lemons’ in other markets, institutional guarantees should be offered to provide quality assurance. For instance, BEE offers a wide range of safety quality certifications for various electrical appliances to provide just such an assurance. These institutional guarantees should be backed by the government or by another organization with high credibility. Government intervention should also be used to some extent to inform consumers, so as to reduce some of the information asymmetries in the market. Support for information quality is arguably an effective measure, but it requires the endorsement of strong and credible institutions over the long term.

The 'Dwelling characteristics' which is the third important factor under OLS, turned out to be important only at lower and higher quantiles, under quantile regression. The Quantile regression also revealed that the 'family size' is important only at lower and higher quantiles. This is an important indication for the manufacturers of EETs, as it indicates which households are to be targeted. The 'cost driven concern for environment', which is the fourth important factor under OLS deserves the same treatment as that of 'Awareness about energy and environment'. The quantile regression of the level of 'conservation habits' showed that the cost driven concern for environment is a very strong factor influencing the level of conservation habits especially at higher quantiles. It's beta value increased by 25%, from 0.6 at 30% quantile to 0.85 at 90% quantile. This is a clear indication for the concerned authorities and NGOs as to where they should concentrate to increase the level of conservation habits amongst the urban households.

**9.6 SCOPE FOR FURTHER WORK**

There are two paradigms of research. In one, the researcher is experientially involved with the phenomena and has the objective of understanding a particular situation. He is immersed in the phenomena psychologically and physically (Krishnaswamy et al., 2006). He approaches the problem with an open mind without having an *a priori* analytical framework. The enquiry is subjective and ethnographic. It is called ‘enquiry from within’.
The other paradigm is characterized by gathering data from the system according to a predetermined procedure and design in order to unearth knowledge in the form of generalizations. This is called ‘enquiry from outside’. Whatever might be the paradigm followed by a researcher, the research is incomplete without the addition of future scope.

This research work was carried out with the aim of understanding the behaviors of Indian urban households in adopting Energy efficient devices and Conservation habits. The primary data required for the work was collected by a survey of households within the corporation limits of the south Indian city of Mysore. Because of the limited space of a questionnaire, it was impossible to include every relevant factor. Future researchers in this area, specifically can include certain factors which were not considered in this study like – Age group of the respondents, Rebound effect, Lifestyle issues and the effect of feedback on energy consumption. Another objective which could be added to the study is “To evolve an optimal basket of EETs and services for the households based upon a techno-economic analysis”. One can also try to develop a mechanism to obtain the carbon footprint of each household.

9.7 CONCLUSION
It is modestly and sincerely believed that this research work will succeed in making the various stakeholders of household energy consumption and conservation, like the government, manufacturers of EETs and NGOs to take note of the issues concerning adoption of EETs and conservation habits by the Indian urban households. Modern economies are energy dependent and the provision of sufficient energy has been the central problem of energy sector worldwide. Indeed the magnitude of energy consumed per capita has become an indicator of a country’s modernisation and progress. Governments worldwide are driven by one simple preoccupation: increasing the supply of energy. But off late some serious doubts have arisen about the wisdom of pursuing a supply-obsessed approach. Attention is shifting towards a more balanced view that also looks at the demand side of energy. The magnitude and intensity of energy production is having deleterious impacts on the environment. Most of the environmental problems are directly related to the quality and quantity of fuel combustion (Reddy, 2000). Energy strategies have impacts on major issues related to poverty, women, population, urbanization and lifestyles. The
demand side approach recognizes the fact that social needs by energy is best achieved by treating neither energy supply nor energy consumption as ends in themselves. After all, what human beings want is not oil or coal, or even gasoline or electricity per se, but the services that those energy sources provide. So, it is essential to consider the large variety of scenarios that are feasible considering the opportunities and potentials offered by changes in demand, improvements in energy efficiency, shifts from traditional energy sources to modern energy carriers and dissemination of new, more efficient energy technologies. But the first step for doing this is to understand the factors which are influencing energy consumption and efficiency and the nature of their influences. It is humbly believed that, this study has done something in that direction. Further, it is also hoped that this study will result in a host of future researchers evincing keen interest in the energy consumption and conservation patterns and attitudes of Indian households, thereby facilitating sustainable energy management in the Residential sector of Indian economy in this new millennium.