

CHAPTER 14

ENERGY

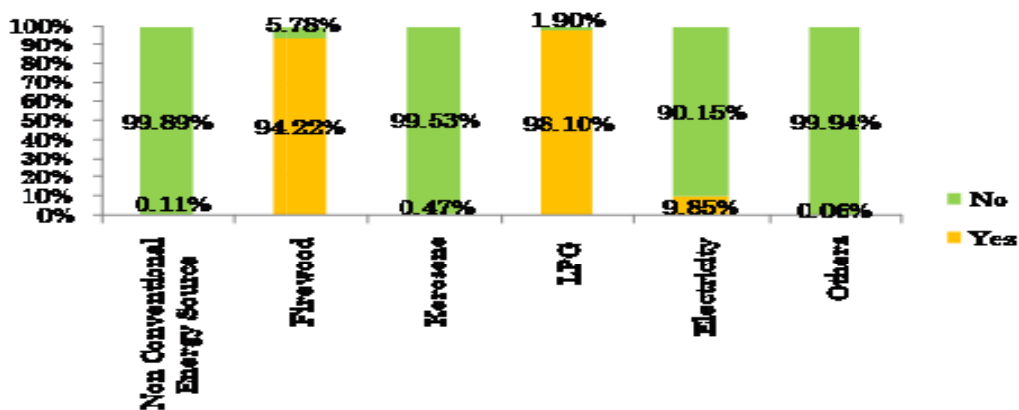
Energy is one of the most fundamental parts of our universe. It is essential to human life and all living organisms. It is the basic necessity for the economic development of a country. The forms of energy are electricity, solar energy, wind energy, nuclear energy, biomass energy (energy from plants), geothermal energy, fossil fuels (coal, oil and natural gas), hydro power, ocean energy and nuclear energy. Energy provides us with light, heat, refrigeration, communication, elevators, entertainment etc. Thus energy use can be divided into four economic sectors such as residential, commercial, transportation, and industrial. Energy supply and consumption practices are deeply

influenced by the social structures in which they take place.

The chapter deals with the existing status of energy sources and their potentials and problems in Kannur Corporation.

14.1 EXISTING STATUS

As per socio economic survey (2018), the data regarding the usage of existing energy sources for cooking uses in the Corporation area is shown in Figure.14.1 which indicates that fire wood and LPG are mainly used for cooking purposes. Also, it is clear that the conventional energy sources are less in usage.

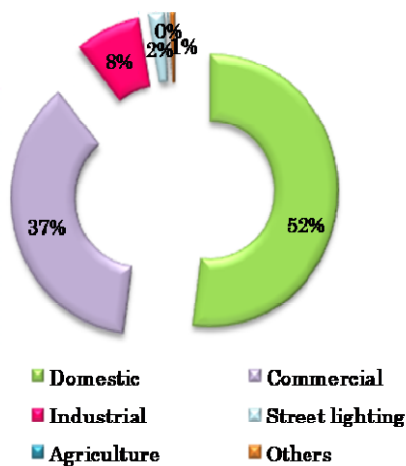


Source: Socio economic survey, 2018

Figure.14.1 Existing energy sources for cooking uses in the Corporation area

14.1.1 CONSUMPTION

The main source of power consumption in Corporation area is electricity. Electrical energy is popular because it is so easily transmitted from one place to another, and can be converted into other forms of energy easily. The survival of industrial undertakings and our social structures depends primarily upon low cost and uninterrupted supply of electrical energy. In fact, the advancement of a country is measured in terms of per capita consumption of electrical energy. Thus energy sector in the planning area is mainly handled by Kerala State Electricity Board (KSEB) which is the chief agency of the state to generate, transmit and distribute power to the consumers. Based on the purpose, the power consumption is categorized as domestic, industrial, commercial, construction, street lights and agriculture.



Source: Socio Economic Survey, 2018

Figure.14.2 Monthly electrical consumption in the Corporation area

Monthly average energy consumption details of Kannur Municipal Corporation area for the year 2018 is obtained from different sections of KSEB and it is graphically shown in Figure.14.2. From the figure, it is clear that about 52% of energy is utilized for domestic purposes followed by commercial (37%) and industrial uses (8%). About 2% of electrical energy is consumed by street lights whereas only very less percentage of energy is used for agriculture and other activities. Lower value of consumption for agriculture reveals that the planning area has lower trend in agriculture activities.

14.1.2 CONNECTION AND DISTRIBUTION

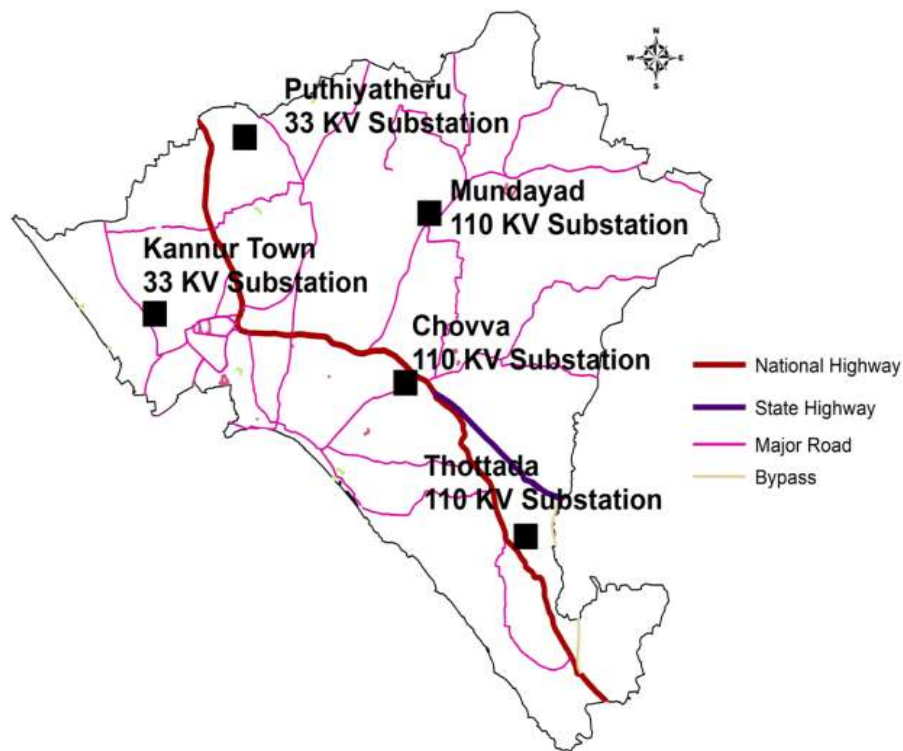
The entire Corporation area falls under the sections Kannur, Pallikkunnu, Chovva, Azhikode, Thayyil, Burnassery and Echur. The details of the sections and location of substations are given below in the Table. 14.1. Altogether, there are five sub stations that serve power transmission for the whole Corporation area among which, Azhikode is located outside the boundary. Moreover, all houses in the planning area are electrified. The location of different substations within the Corporation area is shown in Figure.14.3.

Table.14.1 Details of different sections under KSEB

KSEB Section	Kannur	Pallikunnu	Chovva	Azhikode	Thayyil	Burnassery	Echur
Number of Substations	2	1	3	1	2	3	1
Location of substation (details)	*Chovva 110 kv Substation *Mundayad 110 kv substation	*Puthiyatheru 33 kV Substation (Podikkundu- Kottali Road)	*Mundayad 110 kv substation *Chovva 110 kv substation *Thottada 33kv substation	*Azhikode 110 KV Substation	*Chovva 110kv Substation *Thottada substation	*Chovva 110 kv Substation *110 kv Substation *Kannur Town 33kv substation	*Mundayad 110 kv substation



Puthiyatheru 33 kV Substation (Podikkundu- Kottali Road)



Source: KSEB Sections

Figure.14.3 Location of different substations

14.1.3 OTHER SOURCES OF ENERGY

Other sources of energy in the Corporation area include petroleum products and solar energy panels. Kannur, Thayyil, Azhikode and Burnasserri sections are using solar panels. The use of non-conventional energy did not have much popularity and thus the use is very minimal. Some residential occupancy is using biogas plants for cooking gas. People are not aware of the vast possibilities of non-conventional energy sources and it points out the need to conduct various programmes for creating the awareness in them. The details of solar panels are given below in the

Table.14.2.

There is only one electric charging station at Chovva. At present, there are 25 petrol pumps and they are widely distributed along the major road networks catering to the need of transportation, industrial and commercial sectors.

14.2 DEVELOPMENT POTENTIALS AND PROBLEMS

Now days, the consumption of energy is increasing every year which is mainly in the domestic and commercial sectors. In the Corporation area, as per 2018 data, both domestic and industrial sectors together constitute about 89 per cent of the

Table.14.2 Details of Solar Panels in the Corporation area

Sl. No.	Name of Section	Domestic	Commercial	Industrial	Street lighting	Agriculture	Others
1	Kannur	43	7	0	0	0	4
2	Thayyil	10	1	0	0	0	0
3	Azhikode	17	5	0	0	0	0
4	Burnasserri	15	6	0	0	0	0

Source: KSEB Sections

total energy consumption. Domestic use itself consumes about 52% whereas commercial sectors consume 37%.

Considering the rapid pace of urbanization, increasing affluence and a fast growing services sector, the possibilities of the demand letting up in these sectors seems to be remote. Also, the Corporation area is the administrative headquarters of the district and it contains many commercial nodes.

Since the planning area is having 17 km coastal stretch, there arises the scope of tidal power as energy source. The feasibility of the project has to be checked out. There is one electric charging station in the Corporation area.

The proposed waste to energy plant at Chelora under the State Government's initiative to set up waste-to-energy plants in seven districts will be a great achievement for the planning area. KSIDC is the

nodal agency for establishing the waste-to-energy plants. This project is similar to waste to energy plant at Jabalpur in Madhya Pradesh, The waste is being burnt at a large burner in the plant and the gas generated thus was emitted after treatment.

The street lights are not covered for the entire planning area. The rate of consumption, especially in domestic sector is increasing even though energy efficient products like LED bulbs are available in the market. It is due to the increase in number of houses and the usage of high Watt equipments like air conditioners (AC), Fridge, Washing machine etc. Even in small commercial and service centres, like ATM's, high capacity air conditions are installed which consumes more units. It results in the increased power consumption.

More electric charging stations should be established in the planning area to reduce the carbon dioxide emissions.

14.3 INFERENCE

At present, the power supply is done through 6 substations under 7 sections. In the modern world, while considering the rapid pace of urbanization, increasing affluence and a fast growing services sector, the possibilities of the demand for energy consumption is very high.

The installation and use of solar panels and bio gas plants in houses should be encouraged so that domestic consumption of electrical energy can be reduced to a great extent. For effective supply of electricity, underground cable system can be implemented. The proposed waste to energy plant at Chelora will be a great attempt by the government which can be implemented ward wise in small scale later. The 17 km coastal stretch can be utilised as tidal power. The feasibility studies should be carried out.

The wastage of energy can be reduced by bringing awareness among the public about proper utilization and conservation of electrical energy. The Corporation and K.S.E.B together can encourage the use of LED bulbs by supplying it to the consumers.

Green house technology in building makes it environmentally responsible and resource efficient throughout its life cycle by efficiently using energy, water and other resources. The Corporation should give serious consideration to find ways to decrease energy consumption. Thus it is necessary to go for modern techniques in construction to reduce heat generation and net zero energy building. To make this possible, various passive elements such as louvers, fins and extended roof coverings etc. can be added to reduce solar heat gain. Large openings at vantage locations increase ventilation and comfort to the end- user.