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RESEARCH ARTICLE

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POWER SUPPLY OF RAIPUR CITY IN CHHATTISGARH, INDIA

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ABSTRACT

Now a day the entire power supply network in the Raipur city is underground. But 10 years ago all the electric lines were situated over the ground of Raipur City. Some of the key features of the smart energy system are to reduce redundancy, underground cable network, solar panels; wind powered street lights, intelligent street light management system, smart meters, and electrical charging stations. 14 numbers 33KV electrical sub-stations and all underground networks within the city have been implemented. Ring main network at sector level and city level is planned as a backup for the existing power supply.

Keyword: - Transformer, Power, Electrical, Consumers.

Introduction

Present day the power supply is an important issue in every city. Because without electricity we can't move one point to another point. The focus has been to make power supply available 24X7, reduce transmission and distribution loss. NRANVP intends to increase use of renewable energy resources and continue to achieve more in this sector. Alternative energy is also being used and the new administrative block– Mahanadi Bhawan – has a captive 1.1MW of solar power plant that provides for 25% of its electricity needs. Some of the key features of the smart energy system are to reduce redundancy, underground cable network, solar panels; wind powered street lights (pilot project), intelligent street light management system, smart meters, and electrical charging stations. 14 numbers 33KV electrical sub-stations and all underground networks within the city have been implemented. Ring main network at sector level and city level is planned as a backup for the existing power supply.

Review of Literature:

S. Sareen (2005) Published on Urban Pollution and its management.
R.C. Sharma (1988) released on Indian Urban land policy and development finance.
B.P. Chaurasia (1987) worked on Urban Land use and Planning.
F.H.W. Green (1950) Published on Bus services of Wales, England.

Objectives of the Study:

1> To highlight development of power supply of Raipur city.
2> To assess the changes of power supply of Raipur city.
3> To analyze the problems regarding Power Supply of Raipur city find out its solution.

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Source of Data:

The data is being collected from primary and secondary sources

1. Primary Sources of data: - The primary sources of data which is being collected through observation of different part of Raipur city.
2. Secondary Sources of data: - Data from the secondary sources in being collected principally from power supply office of Raipur city.
    A) District census hand book 2011.
    B) City Development and Planning office, Raipur.
    C) Power supply office, Raipur city

Methodology:

The study has been made by both primary and secondary data. The primary data include observation of different part of Raipur city and Secondary data collected from power supply office.

Raipur is connected with the National Power Grid. The power Supply is mainly from Korba power plant and Amar Kantak. The pattern of power Supply is Satisfactory with Consumption Shared among various use zones.

The city was first electrified in 1960. This city is divided in to two zones.

1) Eastern Zone
2) Western Zone

1) Eastern Zone:

Eastern zone are situated in the eastern part of the Raipur City. This zonal head office name is civilian. Here total number of transformers 926 and total consumers 74080. Here total Capacity of the transformer 115 MW. And the zonal Sub-stations names are bellow:

a) Sankarnager
b) Purnia
c) Mantralay
d) Civiline
e) Medical College
f) Rajandranagar
g) Agriculture College
h) Devendra nager
i) Jiban Bihar
j) Abanti Bihar
k) I.A.S. Colony

2) Western zone:

Western zone is situated in the western part of the Raipur City. Here zonal head office name Dangenia. The total number of transformer is 612 and total consumers 48960 and the total capacity of the Transformer 65 M.W. The zonal sub-stations name is bellow:

a) Din Dayal Upadhyanagar.
b) West Dangania.
c) Sampta.
d) Rowan Bhata.
e) Tatiband.
f) Rajkumar Collage.

The power stations and the power lines are covered the area 106 sq. km. and Length of the different types of power lines that are given bellows the table.

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Raipur City: Length of the Electric line

Name of Lines	Length in km.	%
33 kv	276.03	17.10
11 kv	367.97	22.80
L.T. Lines	970	60.10
Total	1614	100

Source: - Power Supply office, Raipur

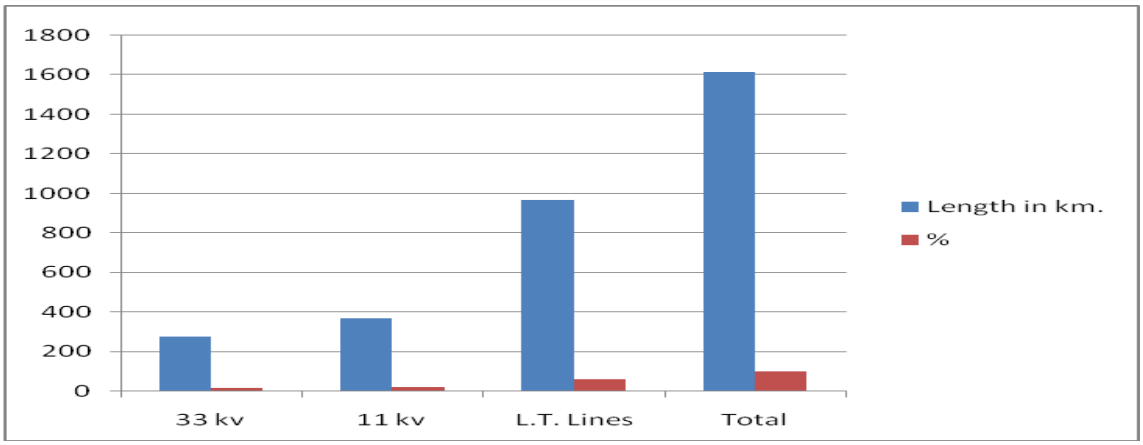

Figure 1: Chart Diagram Shows Length of Electric Line in km. of Raipur City.

Length of the 33 KV line is 276.03 km. This is the 33 KV lines are emanated from different 132 Sub – Stations. Which are located at-

a) Birgaon
b) Rachana
c) Gudhiyari in the Raipur City

33 / 11 KV Sub stations which are 3 in number. The whole Raipur city is emergeysed by these 11 KV lines that is 68 in numbers.

The pattern of power Supply is Satisfactory with consumption shared among various uses zones. The power consumption of the city under various uses is given in Table.

Raipur City: Power Consumption, 2011

Sl. No.	Category	Power Consumption in million Unit (Yearly)	%
1.	Residential	1008	56.5
2.	Commercial	298	16.7
3.	Industrial	408	22.9
4.	Others	71	3.9
	Miscellaneous	1785	100.00

Source: - Power Supply office, Raipur

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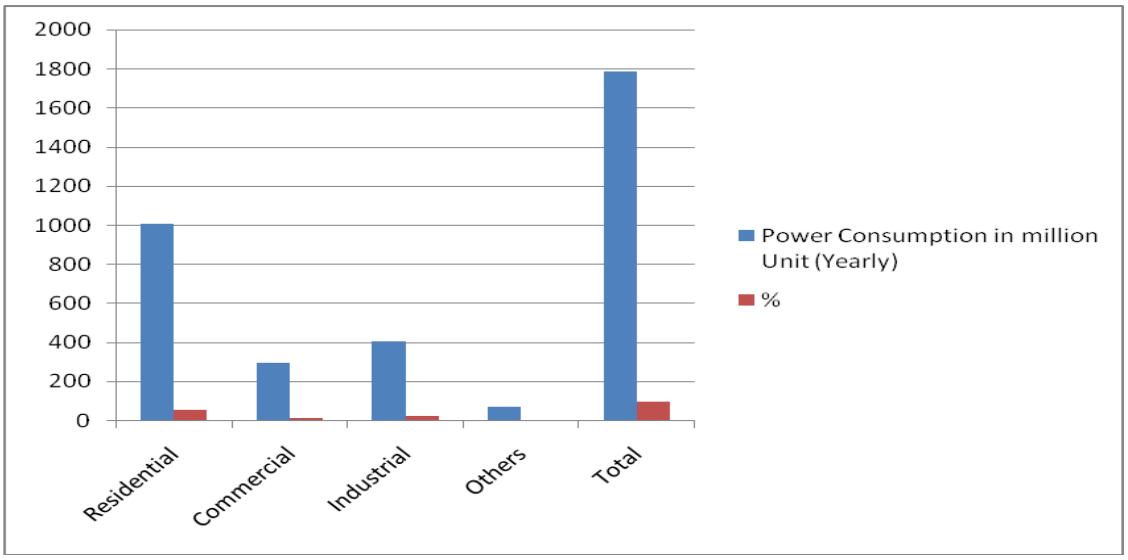

Figure 2: Chart Diagram Shows Power Consumption in Million Units (Yearly) in Raipur City

In total consumption of electric in 2011, 1785 million Unit. Consumption of power in Residential purpose, commercial purpose, Industrial purpose and others miscellaneous purpose are 56.5%, 16.7%, 22.9% and 3.9% respectively.

Problems:

Power cutting (Local Shading) is present in Slums and fringe of the city.

Prospect:

Electricity supply will be equally distributed by establishing transform problem oriented area.

Conclusion:

The total people of the Raipur city have gradually increased, and increase the entry of outside people due to environmental facility and advantage. It we minutely observed the growth rate of population, we have shown the population concentration was 461851, 1991 increasing it 651191 in 2001, but now (2011) the approximate population 10 lacks 10 thousand, In this way in future the Raipur city will be setup as a megacity if the population has increased in this way.

The environmental or non-environmental facility being increased with increasing population. The facilities of Power supply, Transport system and sanitation.

And other amenities are health, education, social and cultural institutions, Recreational. This is also the responsible factor for the rapid growth of population in Raipur city.

The State Government should take from necessary steps like power supply and others facilities in the interior portion and frieze area of Raipur city. The Government also should take to maintain the power supply system and developed the electric facility for the people. To gate the healthy and apply condition some steps should be taken from the state Government for environmental management and city planning.

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