

1801/1997

ELECTRICITY USE IN INDIAN AGRICULTURE : TRENDS AND DETERMINANTS

A. NARAYANAMOORTHY

**Gokhale Institute of Politics and Economics
(Deemed to be a University)
Pune - 411 004, Maharashtra**

October, 1997

278491
P00226

Contents

List of Tables	ii
List of Figures	iii
Abbreviations	iv
Abstract	1
1. Introduction	2
2. Data and Method	5
3. Trends in Electricity Use	6
4. Factors Determining Electricity Use	14
5. Factors Determining Electricity Use at State Level	23
6. Variations in Electricity Use	28
7. Measures to Control Electricity Consumption	35
8. Conclusions	41
References	43

Tables

1. Consumption of Electricity by Sectors	7
2. Growth Rates of Electricity Use by Sectors	7
3. Average and SD of the Study Related Variables	8
4. Results of Linear Trend Exercise for Electricity Consumption in Different Sectors	9
5. State-wise Electricity Consumption: Agriculture and Total	11
6. State-wise Growth Rates (per cent/annum) of Electricity Consumption: 1980-1 to 1992-3	12
7. Growth Rate of Electricity Use in Agriculture and Change in (in time) Electric Pumpsets	13
8. Results of Linear Trend Exercise for Electric Pumpsets and Groundwater Area	16
9. Factors Determining Electricity Use in Agriculture	17
10. Correlation Values for the Variables Related to Electricity Use, India: 1970-1 to 1990-1	18
11. Factors Determining Electricity Use: Simple Regression Results, India: 1970-1 to 1990-1	19
12. Trends in Electric Pumpset, PPEC and ECPHGWA in India: 1970-1 to 1990-1	21
13. Results of Linear Trend Exercise for Per Pumpset Electricity Consumption (PPEC)	23
14. State-wise Change in Electric Pumpsets	24
15. Correlation Value: Factors Determining Electricity Use (State-wise data)	25
16. Factors Determining PPEC (State-wise)	27
17. State-wise Proportion of Electric Pumpsets and Electricity Consumption	29
18. State-wise Per Pumpset Consumption of Electricity/Groundwater Area per Pumpset	31
19. ANA and BNA States Group in Electricity Consumption and Their Characteristics	33
20. Average Cost of Generation & Supply of Power:1992-3	37
21. Achievable Efficiency in Electricity Consumption in Agricultural Sector	40

Figures

1. Consumption of Electricity by Different Sectors	7a
2. State-wise Growth Rate of Electricity Use, Agriculture and Total: 1980-1 to 1992-3	13a
3. Source-wise Share of Irrigated Area to Net Irrigated Area	16a
4. Trends in Groundwater Area and Electric Pumpsets in India: 1970-1 to 1990-1	17a
5. Trends in PPEC at National Level: 1970-1 to 1990-1	21a
6. State-wise Per Pumpset Electricity Consumption: 1980-1 and 1990-1	26a
7. State-wise Share of Electric Pumpset and Electricity Consumption: 1990-1	30a