DATA-DRIVEN INSIGHTS FOR UTILITY SERVICE MANAGEMENT: A STATISTICAL APPROACH

Project Report
Submitted to
The Department of Statistics,
Pondicherry University

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STAT-414 Programming in R (Lab Based)

Under the Guidance of
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Certificate

This is to certify that **Ms. A S PRAISIE JEMIMAH** and **Ms. Y Sri NIKITHA** have completed their project work as partial fulfillment of the course work of Stat 414: R-Programming (Lab based) submitted to the Department of Statistics, Pondicherry University in November 2024. They have carried out all the stages of project work right from the data collection to report making, on their own. The data that they have collected is from a real time context. No part of this work was carried out earlier in any format by any one for M.Sc./ MBA/ MTech/ etc. dissertation works or Ph.D. thesis.

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(P. Tirupathi Rao)

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Abstract

Effective utility management is integral to ensuring consistent and efficient power distribution in regions with diverse consumer demographics. This project focuses on analyzing utility management data from the Mahbubnagar Operation Circle of the Southern Power Distribution Company of Telangana Ltd. The dataset includes a variety of attributes such as consumer information, nature of supply, load, meter characteristics, and financial metrics, providing a detailed snapshot of the operational dynamics in the region. The primary objective of this study is to identify patterns, relationships, and insights that can guide better decision-making and operational optimization.

The analysis employs advanced statistical techniques, including Multiple Linear Regression (MLR) for exploring predictors of load, and Generalized Linear Models (GLM) to understand categorical variations. One-way and two-way Analysis of Variance (ANOVA) tests are used to assess the effects of categorical variables on load and financial parameters. Factor Analysis and Principal Component Analysis (PCA) simplify the complexity of the data by identifying latent dimensions, while hierarchical clustering aids in segmenting consumers based on similar attributes.

Significant findings reveal that factors such as the make and capacity of meters, along with the nature of supply, strongly influence the load and related financial metrics. The study uncovers variations among supply categories—such as agricultural, domestic, and industrial—that have a direct impact on load distribution and revenue generation. These insights are instrumental in tailoring strategies for targeted service delivery and resource allocation.

The project also highlights the importance of prescriptive statistics in modeling operational scenarios, offering actionable recommendations for improving efficiency. Predictive models for load estimation and segmentation of consumer groups enable utility managers to prioritize infrastructure upgrades and enhance customer service. The hierarchical clustering results further validate the effectiveness of data-driven approaches for identifying distinct consumer needs.

Overall, this study underscores the role of statistical and machine learning techniques in addressing key challenges in utility management. By applying these methodologies, the project demonstrates how data-driven strategies can enhance load forecasting, operational planning, and service reliability. The results are not only applicable to the study region but also serve as a model for similar utility management scenarios across other regions.

In conclusion, this project combines robust statistical methodologies with domain-specific insights to offer practical solutions for improving power distribution efficiency. The findings pave the way for further research into integrating advanced analytics with real-time operational data, ensuring sustainable and efficient utility management in the long term.

C H A P T E R 1

PREFACE

1.1. Introduction and Description of the Problem

The utility management data of Southern Power Distribution Company (SPDCL) for the Mahabubnagar operation circle, specifically the Mohamodabad section, represents a critical component of effective energy distribution and management. In today's era, ensuring uninterrupted and equitable power supply is a significant challenge for utility companies. Problems such as data inconsistency, lack of integration, and inefficient data usage in decision-making can lead to operational inefficiencies, financial losses, and consumer dissatisfaction. This study addresses these issues by analyzing the collected utility management data to enhance transparency, streamline operations, and optimize resource allocation.

1.2. Significance of the Problem Under Study

Efficient power distribution is the backbone of societal and economic development. The collected dataset has the potential to uncover patterns, improve forecasting accuracy, and identify bottlenecks in the distribution process. Addressing these problems not only benefits the utility provider but also ensures a reliable supply of electricity to consumers, fostering industrial, agricultural, and residential growth.

1.3. Relevance and Importance of the Study to Society

The insights gained from this study can significantly improve power supply reliability, reduce wastage, and enhance consumer satisfaction. In rural and semi-urban regions like Mahabubnagar, uninterrupted electricity is essential for agricultural productivity, education, and household comfort. An optimized system also reduces operational costs, making electricity affordable for the community.

1.4. Glossary

- **Nature of Supply:** Refers to the type of electricity supply, such as single-phase or three-phase.
- **Category:** Classification of consumers (e.g., domestic, industrial).
- **MF (Multiplying Factor):** A constant used to convert readings from the meter to actual usage.
- **Sec Dep (Security Deposit):** The refundable deposit paid by consumers.
- **Dev Chg (Development Charges):** One-time charges for infrastructure setup.
- **PR (Payment Receipt):** A document indicating payment confirmation.

1.5. Motivation for Selecting the Specific Topic

The increasing focus on data-driven decision-making in the power sector motivated this study. The opportunity to explore real-world data and its impact on improving electricity distribution efficiency aligns with both personal and societal interests.

1.6. Data Collection Sources

The dataset was obtained from the automated systems of the Mohammadabad section under the Mahaboobnagar operation circle of SPDCL. It includes detailed consumer information, billing details, and associated metadata from their internal system.

1.7. Data Collection Methodology

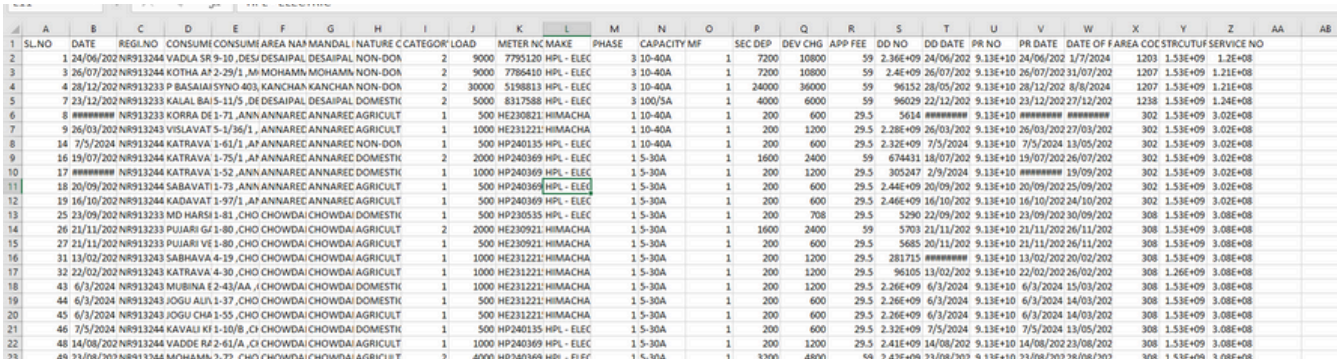
Data was systematically extracted from the SPDCL's automated system using pre-defined templates to ensure uniformity and completeness. Each variable was verified for accuracy and relevance before inclusion in the dataset.

1.8. Data Preparation Steps

- **Cleaning:** Removal of duplicate or irrelevant records.
- **Validation:** Cross-checking variables like dates and consumer numbers for consistency.
- **Coding:** Assigning numeric codes to categorical variables for analysis.
- **Integration:** Merging data from multiple sources into a unified format.

1.9. Specimen Data

Specimen data template shown here



SL.NO	DATE	REGI.NO	CONSUME	CONSUMI	AREA NA	MANDAL	NATURE C	CATEGOR	LOAD	METER NC	MAKE	PHASE	CAPACITY	MF	SEC DEP	DEV CHG	APP FEE	DD NO	DD DATE	PR NO	PR DATE	DATE OF F	AREA COC	STRCUTUF	SERVICE NO
1	24/06/202	NR913244	VADLA SR	9-10 ,DES/	DESAIPAL	DESAIPAL	NON-DOM	2	9000	7795120	HPL - ELEC	3	10-40A	1	7200	10800	59	2.36E+09	24/06/202	9.13E+10	24/06/202	1/7/2024	1203	1.53E+09	1.2E+08
3	26/07/202	NR913244	KOTHA AP	2-29/1 ,M/	MOHAMN	MOHAMN	NON-DOM	2	9000	7786410	HPL - ELEC	3	10-40A	1	7200	10800	59	2.4E+09	26/07/202	9.13E+10	26/07/202	31/07/202	1207	1.53E+09	1.21E+08
4	28/12/202	NR913233	P BASAIAI	SYNO 403,	KANCHAN	KANCHAN	NON-DOM	2	30000	5198813	HPL - ELEC	3	10-40A	1	24000	36000	59	96152	28/05/202	9.13E+10	28/12/202	8/8/2024	1207	1.53E+09	1.21E+08
7	23/12/202	NR913233	KALAL BAI	5-11/5 ,DE	DESAIPAL	DESAIPAL	DOMESTIC	2	5000	8317588	HPL - ELEC	3	100/5A	1	4000	6000	59	96029	22/12/202	9.13E+10	23/12/202	27/12/202	1238	1.53E+09	1.24E+08
8	########	NR913233	KORRA DE	1-71 ,ANN	ANNAREC	ANNAREC	AGRICULT	1	500	HE230821	HIMACHA	1	10-40A	1	200	600	29.5	5614	########	9.13E+10	########	########	302	1.53E+09	3.02E+08
9	26/03/202	NR913243	VISLAVAT	5-1/36/1 ,	ANNAREC	ANNAREC	AGRICULT	1	1000	HE231221	HIMACHA	1	10-40A	1	200	1200	29.5	2.28E+09	26/03/202	9.13E+10	26/03/202	27/03/202	302	1.53E+09	3.02E+08
14	7/5/2024	NR913244	KATRAVA	1-61/1 ,AP	ANNAREC	ANNAREC	NON-DOM	1	500	HP240135	HPL - ELEC	1	10-40A	1	200	600	29.5	2.32E+09	7/5/2024	9.13E+10	7/5/2024	13/05/202	302	1.53E+09	3.02E+08
16	19/07/202	NR913244	KATRAVA	1-75/1 ,AP	ANNAREC	ANNAREC	DOMESTIC	2	2000	HP240369	HPL - ELEC	1	5-30A	1	1600	2400	59	674431	18/07/202	9.13E+10	19/07/202	26/07/202	302	1.53E+09	3.02E+08
17	########	NR913244	KATRAVA	1-52 ,ANN	ANNAREC	ANNAREC	DOMESTIC	1	1000	HP240369	HPL - ELEC	1	5-30A	1	200	1200	29.5	305247	2/9/2024	9.13E+10	########	19/09/202	302	1.53E+09	3.02E+08
18	20/09/202	NR913244	SABAVAT	1-73 ,ANN	ANNAREC	ANNAREC	AGRICULT	1	500	HP240369	HPL - ELEC	1	5-30A	1	200	600	29.5	2.44E+09	20/09/202	9.13E+10	20/09/202	25/09/202	302	1.53E+09	3.02E+08
19	16/10/202	NR913244	KADAVAT	1-97/1 ,AP	ANNAREC	ANNAREC	AGRICULT	1	500	HP240369	HPL - ELEC	1	5-30A	1	200	600	29.5	2.46E+09	16/10/202	9.13E+10	16/10/202	24/10/202	302	1.53E+09	3.02E+08
25	23/09/202	NR913233	MD HARSI	1-81 ,CHO	CHOWDA	CHOWDA	DOMESTIC	1	500	HP230535	HPL - ELEC	1	5-30A	1	200	708	29.5	5290	22/09/202	9.13E+10	23/09/202	30/09/202	308	1.53E+09	3.08E+08
26	21/11/202	NR913233	PUJARI G/	1-80 ,CHO	CHOWDA	CHOWDA	AGRICULT	2	2000	HE230921	HIMACHA	1	5-30A	1	1600	2400	59	5703	21/11/202	9.13E+10	21/11/202	26/11/202	308	1.53E+09	3.08E+08
27	21/11/202	NR913233	PUJARI VE	1-80 ,CHO	CHOWDA	CHOWDA	AGRICULT	1	500	HE230921	HIMACHA	1	5-30A	1	200	600	29.5	5685	20/11/202	9.13E+10	21/11/202	26/11/202	308	1.53E+09	3.08E+08
31	13/02/202	NR913243	SABHAVA	4-19 ,CHO	CHOWDA	CHOWDA	AGRICULT	1	1000	HE231221	HIMACHA	1	5-30A	1	200	1200	29.5	281715	########	9.13E+10	13/02/202	20/02/202	308	1.53E+09	3.08E+08
32	22/02/202	NR913243	KATRAVA	4-30 ,CHO	CHOWDA	CHOWDA	AGRICULT	1	1000	HE231221	HIMACHA	1	5-30A	1	200	1200	29.5	96105	13/02/202	9.13E+10	22/02/202	26/02/202	308	1.26E+09	3.08E+08
43	6/3/2024	NR913243	MUBINA E	2-43/AA ,(	CHOWDA	CHOWDA	DOMESTIC	1	1000	HE231221	HIMACHA	1	5-30A	1	200	1200	29.5	2.26E+09	6/3/2024	9.13E+10	6/3/2024	15/03/202	308	1.53E+09	3.08E+08
44	6/3/2024	NR913243	JOGU ALIN	1-37 ,CHO	CHOWDA	CHOWDA	DOMESTIC	1	500	HE231221	HIMACHA	1	5-30A	1	200	600	29.5	2.26E+09	6/3/2024	9.13E+10	6/3/2024	14/03/202	308	1.53E+09	3.08E+08
45	6/3/2024	NR913243	JOGU CHA	1-55 ,CHO	CHOWDA	CHOWDA	AGRICULT	1	500	HE231221	HIMACHA	1	5-30A	1	200	600	29.5	2.26E+09	6/3/2024	9.13E+10	6/3/2024	14/03/202	308	1.53E+09	3.08E+08
46	7/5/2024	NR913244	KAVALI KI	1-10/B ,CH	CHOWDA	CHOWDA	DOMESTIC	1	500	HP240135	HPL - ELEC	1	5-30A	1	200	600	29.5	2.32E+09	7/5/2024	9.13E+10	7/5/2024	13/05/202	308	1.53E+09	3.08E+08
48	14/08/202	NR913244	VADDE RA	2-61/A ,CH	CHOWDA	CHOWDA	AGRICULT	1	1000	HP240369	HPL - ELEC	1	5-30A	1	200	1200	29.5	2.41E+09	14/08/202	9.13E+10	14/08/202	23/08/202	308	1.53E+09	3.08E+08

1.10. Preparation of Data Matrix

The data matrix was created by arranging variables as columns and consumer records as rows, ensuring every column represents a single variable, such as consumer name or service number.

1.11. Data Formatting on Excel Sheet

- Column headers were standardized to ensure clarity and brevity.
- Dates were formatted as YYYY-MM-DD.
- Numeric variables like security deposits and development charges were aligned to two decimal places.
- Categorical variables were encoded for ease of analysis.

CHAPTER 2

Exploratory Data Analysis and Descriptive Statistics

2.1. Importance of Exploratory Data Analysis (EDA)

Exploratory Data Analysis (EDA) is a crucial step in understanding the structure, content, and patterns within a dataset. It involves summarizing the main characteristics of data using statistical and graphical techniques. The significance of EDA lies in:

- **Data Familiarization:** Gaining insights into the dataset's structure, relationships, and anomalies.
- **Identifying Trends and Patterns:** Unveiling hidden trends and associations.
- **Data Validation:** Detecting inconsistencies, missing values, and outliers.
- **Guiding Further Analysis:** Providing direction for hypothesis formulation and model building.

EDA bridges the gap between raw data and actionable insights, making it indispensable in data-driven decision-making processes.

2.2. Meaning and Scope of Descriptive Statistics

Descriptive statistics involves the quantitative summarization of data to describe its main features. It encompasses measures of central tendency, dispersion, and distribution.

Scope:

- **Summarization:** Simplifying complex datasets.
- **Comparisons:** Enabling meaningful data comparisons.
- **Visualization:** Supporting effective communication of data through charts and graphs.

2.3. Need & Significance of Descriptive Statistics

Descriptive statistics is vital for:

- **Decision Support:** Providing a solid foundation for informed decisions.
- Data Simplification: Reducing large datasets into comprehensible formats.
- Performance Metrics: Offering insights into operational efficiency.
- Baseline for Analysis: Acting as the starting point for inferential statistics.

2.4. Brief Statistical Description of Descriptive Statistics

Descriptive statistics can be broadly categorized into:

- Measures of Central Tendency:
  - Mean: The average value of the dataset.
  - Median: The middle value when data is ordered.
  - Mode: The most frequently occurring value.
- Measures of Dispersion:
  - Range: The difference between the maximum and minimum values.
  - Variance: The average squared deviation from the mean.
  - Standard Deviation: A measure of data spread relative to the mean.
- Shape of Distribution:
  - Skewness: Indicates asymmetry in the data distribution.
  - Kurtosis: Describes the "peakedness" or flatness of the data distribution.

2.5. Frequency Tables

Frequency tables are a structured way to represent the distribution of data across various categories or intervals. They allow for quick identification of patterns and trends in the data.

2.6. Statistical Diagrams

Statistical diagrams visually represent data, making it easier to interpret trends, relationships, and distributions.

2.7. Results

1. Summary Statistics

- Purpose: Provides an overview of each column in the dataset.
- Output Example:
  - LOAD: Numeric column with Min: 3.0, Mean: 1092, Max: 30000.
    - Represents the serial number of records.
    - Central tendency (mean and median) and spread (min, max) are provided.
  - DATE, REGI.NO, etc.: Character columns, described by their Length, Class, and Mode.
    - No numeric summary is computed for non-numeric columns.

2. Data Structure (str())

- Purpose: Displays the structure of the dataset.

Key Points:

- 'data.frame': 322 obs. of 26 variables: Indicates that the dataset has 322 rows and 26 columns.
- Shows data types (e.g., int, chr) for each column.

Examples:

- LOAD is an integer column representing some numerical metric (e.g., power load).
- CONSUMER.NAME is a character column containing consumer names.

3. Interquartile Range (IQR)

- Purpose: Measures the spread of the middle 50% of data.
- Formula: IQR=Q3−Q1IQR = Q3 - Q1IQR=Q3−Q1 (difference between the third quartile and first quartile).

Example:

- LOAD: IQR is 500, meaning the middle 50% of load values lie within a range of 500 units.
- Columns with IQR = 0 indicate no variability in the middle 50% of the data (e.g., MF).

4. Quartile Deviation

- Purpose: Also known as Semi-Interquartile Range. It measures half of the IQR.
- Formula: QD=IQR/2QD

Example:

- LOAD: Quartile Deviation is 250, showing that the central data varies by 250 units from the median.

5. Range

- Purpose: Describes the difference between the maximum and minimum values.
- Formula: Range=Max−Min

Example:

- LOAD: Range is 30,000−3=29,99730,000 - 3 = 29,99730,000−3=29,997, indicating a large variation in load values.
- CATEGORY: Range is 3, as values vary between 1 and 4.

6. Sum

- Purpose: The total sum of all numeric values in a column.

Example:

- LOAD: Sum is 351,503, representing the cumulative load across all records.

7. Mean

- Purpose: Provides the average value.
- Formula: Mean=Sum of values/Number of values

Example:

- LOAD: Mean is 1,091.624, indicating the average load per consumer.

8. Median

- Purpose: Middle value when data is sorted in ascending order.

Example:

- LOAD: Median is 1,000, showing the central load value across all consumers.

9. Mean Deviation

- Purpose: Measures the average deviation from the mean.

Example:

- SL.NO: Mean Deviation is 230.5443, showing a considerable spread around the average.

10. Standard Deviation

- Purpose: Indicates the dispersion of data around the mean.
- Formula: SD=sqrt(Var(x))

Example:

- LOAD: SD is 1,852.035, indicating high variability in load values.

11. Deciles

- Purpose: Divides data into 10 equal parts, each representing 10% of the data.

Example:

LOAD:

- 1st Decile (10%): 3
- 9th Decile (90%): 1,000
- Indicates that 90% of loads are ≤ 1,000.

12. Octiles

Purpose: Divides data into 8 equal parts, each representing 12.5% of the data.

Example:

LOAD:

- 2nd Octile: 300
- 5th Octile: 1000

Represents finer division compared to deciles

13. Mode

Purpose: Most frequently occurring value(s).

Example:

- DATE: Mode is 6/3/2024, indicating the most common record date.
- CONSUMER.NAME: Mode is C PADMAMMA.

14. Covariance

Definition: Measures the degree to which two variables vary together. Unlike correlation, covariance is not standardized and depends on the scales of the variables.

Value Range:

- Positive: Variables tend to increase together.
- Negative: As one variable increases, the other tends to decrease.
- Near Zero: No relationship.

Formula:

- $Cov(X,Y)=\sum(Xi-\bar{X})(Yi-\bar{Y})/n-1$

Example Analysis for NSR_M:

- Covariance between LOAD and CATEGORY:
- A large positive covariance indicates that as the CATEGORY value increases, the LOAD also tends to increase.
- Covariance magnitude depends on the units, making it less interpretable than correlation.

15. Univariate Tables

These are univariate frequency tables, where each table presents the frequency distribution of a single variable (e.g., MANDAL.NAME, NATURE.OF.SPPLY, etc.). Univariate analysis focuses on understanding the distribution and characteristics of a single variable without considering relationships between multiple variables.

1. MANDAL.NAME

- Description: This table shows the distribution of various locations (Mandals or villages) and their corresponding frequencies (number of occurrences).
- Example Interpretation:
  - "AMUDALA GADDA THANDA" appears 2 times.
  - "ANNAREDDYPALLY" appears 7 times.
  - "BAPANI KUNTA THANDA" appears 1 time, and so on.
- Insight: Some areas (e.g., "CHOWDARPALLY" with 24 occurrences) might have more records, indicating more activity or relevance in the dataset compared to others.

2. NATURE.OF.SPPLY

- Description: This table shows the type of supply for various categories such as AGRICULTURAL, DOMESTIC, etc., and the frequency with which each type occurs.
- Example Interpretation:
  - "AGRICULTURAL" is noted 63 times.
  - "DOMESTIC" is noted 205 times.
  - "GENERAL PURPOSE" appears 3 times, and so on.
- Insight: The dataset likely contains a heavy focus on domestic supply, followed by agricultural.

3. CATEGORY

- Description: The table here shows the distribution of the variable CATEGORY, which might be a classification or segmentation variable.
- Example Interpretation:
  - Category 1 appears 264 times.
  - Category 2 appears 57 times.
  - Category 4 appears once.
- Insight: The majority of the entries belong to Category 1, with Category 4 being the least frequent.

4. LOAD

- Description: This table represents the frequency distribution of different LOAD values, which likely represent energy or electrical load.
- Example Interpretation:
  - A load of 3 occurs 1 time.
  - A load of 500 occurs 91 times.
  - A load of 30000 occurs 1 time.
- Insight: The dataset contains various load values, with most occurrences at 500 and 1000.

5. MAKE

- Description: The table shows the frequency distribution of equipment or device manufacturers.
- Example Interpretation:
  - "HIMACHAL ENERGY" appears 147 times.
  - "HPL - ELECTRIC" appears 175 times.
- Insight: Both manufacturers appear frequently, with similar frequencies.

6. PHASE
- Description: This table shows the distribution of phases (likely related to some electrical or operational phase).
- Example Interpretation:
  - Phase 1 occurs 316 times.
  - Phase 3 occurs 6 times.
- Insight: Phase 1 is significantly more frequent than Phase 3.

7. CAPACITY
- Description: This table shows the distribution of the capacity of equipment, such as power rating (e.g., 10-40A, 100/5A).
- Example Interpretation:
  - 10-40A appears 6 times.
  - 5-30A appears 315 times.
- Insight: A significant number of records have a capacity of 5-30A.

8. MF
- Description: The table displays the frequency of a certain category (possibly related to some model or feature).
- Example Interpretation:
  - 1 appears 322 times.
- Insight: Only a single category (1) is present in this variable.

9. SEC.DEP
- Description: This table shows the frequency of different security deposit amounts.
- Example Interpretation:
  - 200 appears 258 times.
  - 400 appears 2 times, and so on.
- Insight: A majority of the records have a security deposit of 200, with other values appearing far less frequently.

10. DEV.CHG
- Description: This table shows the frequency of development charges (likely related to infrastructure or utility charges).
- Example Interpretation:
  - 600 appears 80 times.
  - 708 appears 11 times, and so on.
- Insight: The development charge 600 is the most frequent, with other charges appearing less often.

11. APP.FEE
- Description: This table shows the application fee amounts.
- Example Interpretation:
  - 29.5 appears 264 times.
  - 59 appears 58 times.
- Insight: The application fee of 29.5 is more common than 59.

12. PR.DATE
- Description: This table shows the frequency of various PR.DATE (possibly the date of registration or application).
- Example Interpretation:
  - 1/11/2023 occurs 8 times.
  - 1/3/2024 occurs 2 times, and so on.
- Insight: Most records are from specific dates like 1/11/2023.

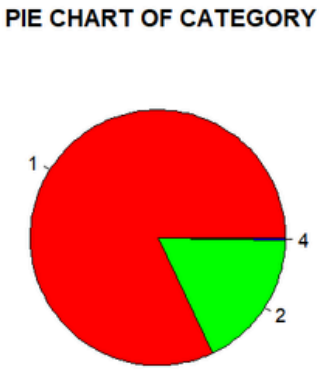
13. AREA.CODE
- Description: This table shows the frequency of various area codes (likely indicating geographical regions).
- Example Interpretation:
  - Area code 302 appears 7 times.
  - Area code 308 appears 11 times, and so on.
- Insight: The most frequent area codes are 308 and 309.

14. STRCUTURE.CODE
- Description: This table shows the frequency of different structure codes, possibly relating to infrastructure or building types.
- Example Interpretation:
  - 1257340010 appears 1 time.
  - 1527002006 appears 6 times, and so on.
- Insight: Different structure codes appear at varying frequencies, with some being quite rare.

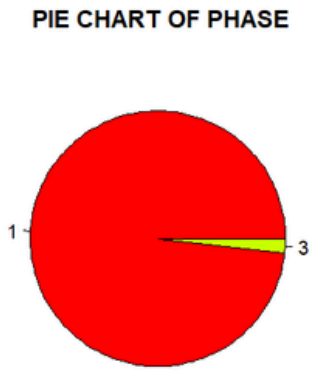
16. STATISTICAL DIAGRAMS

PIE CHARTS

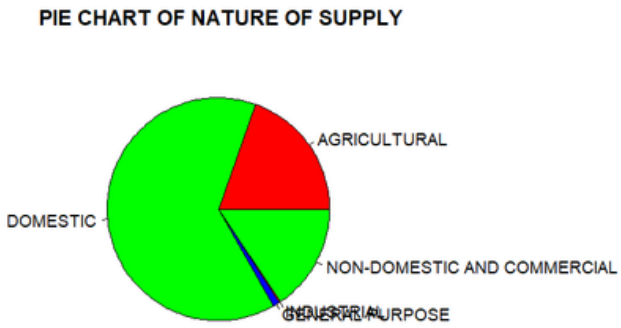
- Below is the pie chart based on the distribution of the CATEGORY column in the dataset NSR_M. *(refer annexure for code)*



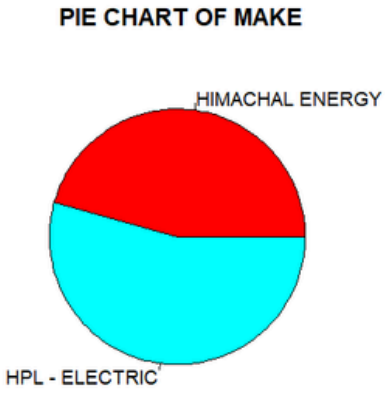
- Below is a pie chart for the PHASE column in the dataset. *(refer annexure for code)*



- Below is the pie chart for the NATURE.OF.SPPLY column. *(refer annexure for code)*

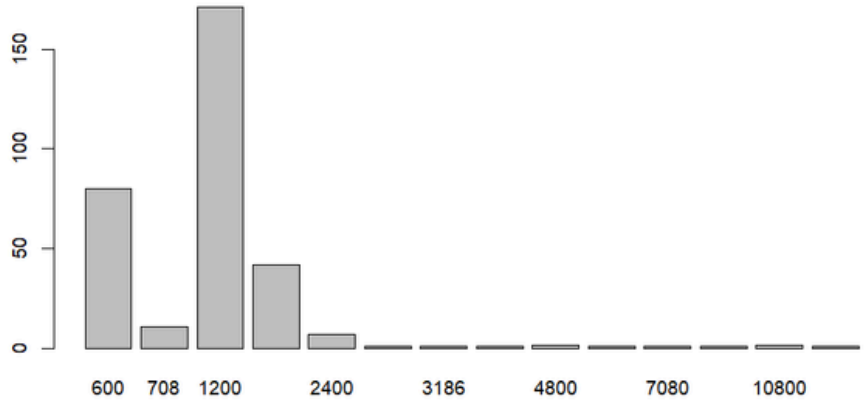


- Below is the pie chart for the MAKE column. *(refer annexure for code)*

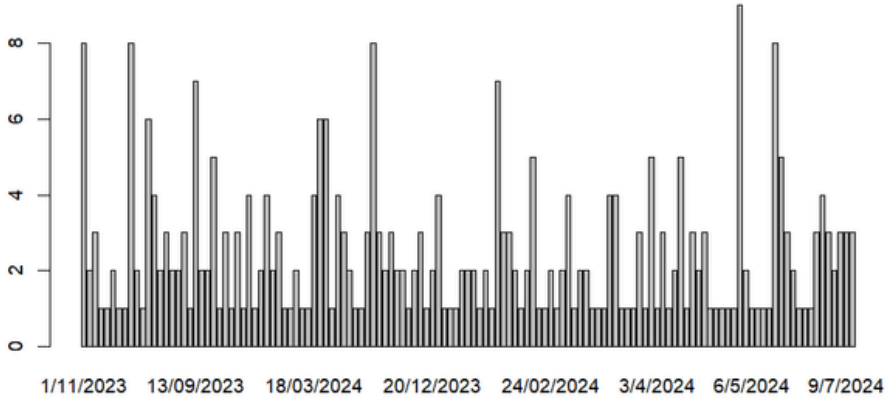


BAR PLOTS

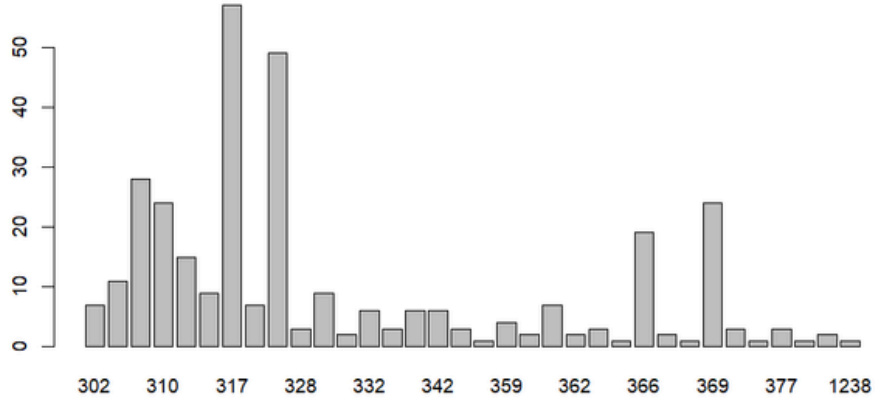
- Purpose: This bar plot shows the frequency of each unique value in the DEV.CHG column.
- Example: If DEV.CHG contains categories like "Improved," "Unchanged," and "Worsened," the bar plot will show the count of rows for each of these values as bars. *(Refer annexure for code)*



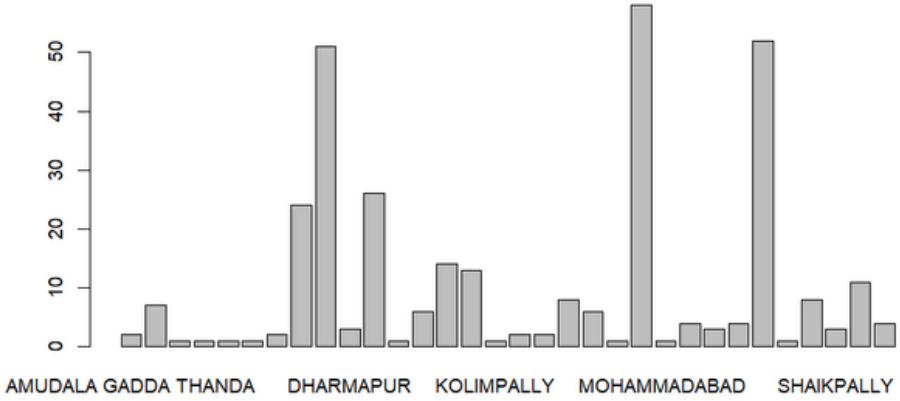
- Purpose: This bar plot visualizes the frequency of records for each unique date in the DATE column.
- Example: If DATE includes values like "2024-01-01," "2024-01-02," etc., the bar plot will have bars corresponding to how many records fall on each date.
- Caution: If the dataset contains many unique dates, the bar plot may become cluttered *(Refer annexure for code)*



- Purpose: This bar plot represents the frequency of each unique area code in the AREA.CODE column.
- Example: If AREA.CODE includes values like "123," "456," and "789," the bar plot will show how often each area code appears.*(Refer annexure for code)*



- Purpose: This bar plot displays the frequency of occurrences of each unique mandal name in the MANDAL.NAME column.
- Example: If MANDAL.NAME contains names like "Mandal1," "Mandal2," and "Mandal3," the bar plot will depict how often each name is found in the dataset.*(Refer annexure for code)*



C H A P T E R 3

Inferential & Relational Data Analysis

3.1. Predictive Statistics

Predictive statistics is a branch of statistical analysis that focuses on using historical data to predict future outcomes. It employs mathematical models, algorithms, and statistical techniques to identify patterns in data.
Relevance in Utility Management:

- Helps forecast electricity demand based on past consumption patterns.
- Assists in load management by predicting peak and off-peak hours.
- Supports decision-making in resource allocation and infrastructure planning.

3.2. Inferential Data Analysis

Inferential statistics allow us to draw conclusions about a population based on sample data. By analyzing data collected from a subset of consumers, you can generalize findings to the entire population.
Importance in Utility Management:

- Decision Support: Provides evidence-based decisions, e.g., whether new infrastructure is required.
- Significance Testing: Determines if differences in energy consumption across categories or areas are statistically significant.

3.3. Relational Data Analysis : Correlation and Regression

Correlation Analysis: Measures the strength and direction of relationships between variables.

- Example: Load vs. Category or Nature of Supply vs. Capacity.
- Use correlation coefficients (e.g., Pearson's r) to quantify relationships.

Regression Analysis: Explores how dependent variables (e.g., energy consumption) are influenced by independent variables (e.g., category, load, phase).

- Simple Regression: Predicting load based on category.
- Multiple Regression: Using multiple factors like area, mandal, and capacity to predict load.

3.4. Parameter Estimation in Regression

In regression models, parameter estimation involves calculating the coefficients (e.g., slope, intercept) that best describe the relationship between variables.
Steps for Estimation:

1. Define the regression equation
2. Use methods like Ordinary Least Squares (OLS) to minimize error and find the coefficients

Utility Management Application:

- Estimating the effect of phase or load on consumption to recommend infrastructure upgrades.

3.5. Estimation of Correlation Parameters

Correlation Coefficient Estimation: Calculates how strongly two variables are related.

- Pearson Correlation (rrr): Measures linear relationships between variables like load and capacity.
- Spearman's Rank Correlation: Useful for non-linear relationships, e.g., between mandal name and load.

Applications:

- Understanding if high-capacity meters are correlated with specific areas or categories.
- Identifying key drivers of energy usage.

3.6. Parametric Hypothesis Tests

Parametric tests assume data follows a specific distribution (e.g., normal distribution). Common tests include:

- Single Sample t-Test: Compare the mean load of a single category to a hypothesized value.
- Two-Sample t-Test: Compare average loads between two categories or mandals.

Examples in Dataset:

- Test if the average load differs between single-phase and three-phase connections.
- Compare service charges across different mandals.

3.7. Non-Parametric Hypothesis Tests

Non-parametric tests do not require data to follow a specific distribution. Common tests include:

- Mann-Whitney U Test: Compare two independent groups, e.g., load in rural vs. urban areas.
- Wilcoxon Signed-Rank Test: Compare paired data, e.g., before and after introducing a new tariff.

Utility Management Example:

- Analyze whether consumer satisfaction levels differ across mandals without assuming normality.

3.8. Results

Predictive Statistics using Arima model

This table represents the point forecasts and the confidence intervals for future values of the "category" variable based on an ARIMA model. Here's an explanation of each column:

1. Point Forecast:
   - This is the predicted value for each month, based on the ARIMA model. For example, the forecast for Nov 27 is 1.166008. This is the expected value of the "category" variable for that specific time period.
2. Lo 80 and Hi 80:
   - These columns represent the 80% confidence interval for the point forecast. The Lo 80 value is the lower bound, and the Hi 80 value is the upper bound of the confidence interval, with 80% confidence that the true value will fall within this range.
   - For Nov 27, the 80% confidence interval is from 0.6435076 (Lo 80) to 1.688508 (Hi 80).
3. Lo 95 and Hi 95:
   - These columns represent the 95% confidence interval for the point forecast. The Lo 95 value is the lower bound, and the Hi 95 value is the upper bound of the confidence interval, with 95% confidence that the true value will fall within this range.
   - For Nov 27, the 95% confidence interval is from 0.3669126 (Lo 95) to 1.965103 (Hi 95).

Example for November 2027:

- The forecast value is 1.166008 for Nov 27.
- The 80% confidence interval suggests the true value will be between 0.6435076 and 1.688508.
- The 95% confidence interval suggests the true value will be between 0.3669126 and 1.965103.

Simple linear regression model (lm) to predict the "LOAD" variable based on the "MAKE" variable.

Model Equation:
The formula for the regression model is:
$LOAD = \beta 0 + \beta 1 \times MAKE$
Where:

- Intercept (750): The predicted load when "MAKE" is not specified (i.e., the baseline value when "MAKE" is at the reference category). This means the model predicts a load of 750 when the "MAKE" is not "HPL - ELECTRIC" (the reference level).
- MAKEHPL - ELECTRIC (12,500): This coefficient represents the change in the predicted load when "MAKE" is "HPL - ELECTRIC", compared to the baseline category. In this case, the predicted load for "HPL - ELECTRIC" is 12,500 more than the baseline load of 750.

Coefficients:

- (Intercept): 750 (baseline load).
- MAKEHPL - ELECTRIC: 12,500 (increase in load for the "HPL - ELECTRIC" make compared to the reference category).

2. Predicted Values:
You used the model to make predictions for two different values of the "MAKE" variable:

- For "MAKE" = "HPL - ELECTRIC": The predicted load is 13,250. This is calculated as:
- 750+12,500=13,250750 + 12,500 = 13,250750+12,500=13,250
- So when the "MAKE" is "HPL - ELECTRIC", the model predicts a load of 13,250.
- For "MAKE" = "HIMACHAL ENERGY": The predicted load is 750. Since "HIMACHAL ENERGY" is likely the reference category for "MAKE", the predicted load is simply the intercept value of 750.

Simple linear regression model (lm) without intercept

The formula for the regression model is:
LOAD=β1×MAKEHIMACHAL ENERGY+β2×MAKEHPL - ELECTRIC
Where:

- The model is forced through the origin (no intercept) since you used 0 + MAKE. This means that the regression will estimate the load directly based on the levels of "MAKE", treating each level as a separate variable.

2. Coefficients:

- MAKEHIMACHAL ENERGY (750): The predicted load when "MAKE" is "HIMACHAL ENERGY". Since there is no intercept, this coefficient represents the exact predicted value for this category.
- MAKEHPL - ELECTRIC (13,250): The predicted load when "MAKE" is "HPL - ELECTRIC". This is the coefficient directly associated with this category, showing how much load corresponds to this make.

3. Model Interpretation:

- "MAKEHIMACHAL ENERGY": When "MAKE" is "HIMACHAL ENERGY", the predicted load is 750.
- "MAKEHPL - ELECTRIC": When "MAKE" is "HPL - ELECTRIC", the predicted load is 13,250.

In this model, both "MAKEHIMACHAL ENERGY" and "MAKEHPL - ELECTRIC" are treated as separate predictors, without a baseline category, so the predicted load is equal to the coefficient value for each specific "MAKE".

4. Why "0 + MAKE" was used:

- Using 0 + MAKE forces the model to exclude the intercept. Normally, a model includes an intercept, and one category would act as the baseline (reference category), with the other coefficients representing the difference from that reference.
- When you specify 0 + MAKE, you effectively treat each category of "MAKE" as an independent variable with its own coefficient. Therefore, there’s no "reference" category anymore, and the coefficients represent the actual predicted value for each "MAKE".

5. Practical Use:

- This model is useful when you want to treat each level of the "MAKE" variable as an individual predictor, without comparing them to a baseline category.
- It provides the direct predicted values for each category, but with no overall baseline, which may not always be appropriate depending on your analysis needs.

Conclusion:

- MAKEHIMACHAL ENERGY leads to a predicted load of 750.
- MAKEHPL - ELECTRIC leads to a predicted load of 13,250.

The key difference between this model and one with an intercept is that here, each "MAKE" category directly has its own estimated load without any reference point.

Linear regression model (lm) to predict DEV.CHG (likely the development charge) based on the AREA.CODE variable

The model equation for DEV.CHG based on AREA.CODE is:

$$DEV.CHG=\beta0+\beta1\times AREA.CODE1207+\beta2\times AREA.CODE1238+\beta3\times AREA.CODE302$$

- Intercept (10,800): This is the baseline value for DEV.CHG when the AREA.CODE is not one of the specific categories included in the model (i.e., the default or reference category).
- AREA.CODE1207 (12,600): This coefficient represents the change in DEV.CHG when AREA.CODE is 1207, compared to the baseline reference category. In other words, if the AREA.CODE is 1207, the development charge will be 12,600.
- AREA.CODE1238 (-4,800): This coefficient represents the change in DEV.CHG when AREA.CODE is 1238, compared to the reference category. If the AREA.CODE is 1238, the development charge will be -4,800.
- AREA.CODE302 (-9,900): This coefficient represents the change in DEV.CHG when AREA.CODE is 302, compared to the reference category. If the AREA.CODE is 302, the development charge will be -9,900.

2. Predicted Values:

You used the model to predict DEV.CHG for a new data point where AREA.CODE = 302.

- For AREA.CODE = 302, the predicted value of DEV.CHG is 900. This is calculated as the intercept (10,800) minus the coefficient for AREA.CODE302 (-9,900): Predicted $DEV.CHG=10,800+(-9,900)=900$

Parametric Hypothesis Tests

1. One Sample t-tests

These tests are comparing the mean of a sample to a hypothesized value.

- LOAD: The mean of LOAD (1,091.62) is significantly different from 10, with a t-statistic of 10.48 and a p-value < 2.2e-16. The confidence interval for the true mean is between 888.57 and 1,294.68.
- SEC.DEP: The mean of SEC.DEP (510.25) is significantly different from 12, with a t-statistic of 5.80 and a p-value of 1.56e-08. The confidence interval for the true mean is between 341.34 and 679.15.
- APP.FEE: The mean of SEC.DEP is significantly different from 0, with a t-statistic of 5.94 and a p-value of 7.28e-09. The confidence interval for the true mean is between 341.34 and 679.15.

2. Two Sample t-tests

These tests compare the means of two groups.

- SEC.DEP vs DEV.CHG: The means of SEC.DEP (510.25) and DEV.CHG (1,356.39) are significantly different with a t-statistic of -5.60 and a p-value of 3.33e-08. The confidence interval for the difference in means is between -1,142.89 and -549.40.
- LOAD by PHASE: The mean LOAD for Phase 1 (903.49) is significantly different from Phase 3 (11,000.00), with a t-statistic of -2.61 and a p-value of 0.04785. The confidence interval for the difference is between -20,052.30 and -140.72.
- CATEGORY by PHASE: The mean CATEGORY for Phase 1 (1.17) is significantly different from Phase 3 (2.00), with a t-statistic of -36.71 and a p-value < 2.2e-16. The confidence interval for the difference is between -0.87 and -0.78.

3. Proportion Tests

These tests assess if the proportion in a given category is different from a hypothesized value.

- NATURE.OF.SPPLY = "Domestic": The proportion of "Domestic" nature of supply is 0 (none in the sample), significantly different from 0.3, with a p-value < 2.2e-16.
- NATURE.OF.SPPLY = "AGRICULTURAL": The proportion of "Agricultural" nature of supply (0.1957) is not significantly different from 0.2, with a p-value of 0.9002. The 95% confidence interval is between 0.1546 and 0.2441.
- MAKE = "HPL - ELECTRIC": The proportion of "HPL - ELECTRIC" make (0.5435) is significantly different from 0.2, with a p-value < 2.2e-16. The 95% confidence interval is between 0.4873 and 0.5986.
- MAKE = "HIMACHAL": The proportion of "Himachal" make is 0 (none in the sample), significantly different from 0.7, with a p-value < 2.2e-16.
- MANDAL.NAME: The proportion of "MOHAMMADABAD" vs "MOKARLABAD" is compared, yielding a p-value of 0.4017. There is no significant difference between the two mandals.

4. Variance Tests

These tests compare the variances of two groups.

- LOAD vs SEC.DEP: The ratio of variances (1.45) is significantly different from 1 with a p-value of 0.001012.
- LOAD vs DEV.CHG: The ratio of variances (0.69) is significantly different from 1 with a p-value of 0.000895.
- DEV.CHG vs SEC.DEP: The ratio of variances (2.10) is significantly different from 1 with a p-value of 5.60e-11.
- DEV.CHG vs APP.FEE: The ratio of variances (38,601.74) is significantly different from 1 with a p-value < 2.2e-16.
- LOAD by PHASE: The ratio of variances (0.0018) is significantly different from 1 with a p-value < 2.2e-16.
- SEC.DEP by PHASE: The ratio of variances (0.00296) is significantly different from 1 with a p-value < 2.2e-16.

5. Correlation and Correlation Test

Correlation

- Definition: Measures the strength and direction of a linear relationship between two numeric variables.
- Value Range:
  - +1+1+1: Perfect positive correlation (as one variable increases, the other also increases).
  - −1-1−1: Perfect negative correlation (as one variable increases, the other decreases).
  - 000: No linear relationship.
- Formula:
- r=Cov(X,Y)/σXσYr
- Where:
  - Cov(X,Y): Covariance between X and Y.
  - σX,σY: Standard deviations of X and Y.
- Example Analysis for NSR_M:
  - Correlation between LOAD and CATEGORY:
    - If r≈0.8r \approx 0.8r≈0.8: Strong positive relationship (e.g., higher categories might correspond to higher loads).
    - If r≈−0.3r \approx -0.3r≈−0.3: Weak negative relationship.

Correlation tests examine the relationship between two continuous variables.

- SEC.DEP and DEV.CHG: The correlation is 0.98, with a p-value < 2.2e-16, indicating a solid positive relationship.
- SEC.DEP and APP.FEE: The correlation is 0.42, with a p-value of 3.53e-15, indicating a moderate positive relationship.
- APP.FEE and DEV.CHG: The correlation is 0.31, with a p-value of 1.94e-08, indicating a moderate positive relationship.

Non -Parametric Hypothesis Tests

1. Runs Test for Randomness

- Purpose: Tests whether a sequence of data points is random or follows a pattern.
- How It Works: Counts the number of runs (sequences of increasing or decreasing values) in the data. Deviations from the expected number of runs suggest non-randomness.

- NSR_M$LOAD *(refer annexure for code)*:
- Statistic = -2.8373, p-value = 0.004549
- Conclusion: Evidence of non-randomness.
- NSR_M$SEC.DEP and NSR_M$APP.FEE *(refer annexure for code)*:
- Statistic = NaN, p-value = NA (implies all observations are identical or there is no variation in the data).
- NSR_M$DEV.CHG *(refer annexure for code)*:
- Statistic = -6.0231, p-value = 1.711e-09
- Conclusion: Evidence of non-randomness.

2. Wilcoxon Rank Sum Test

- Purpose: Compares the distributions of two independent groups when normality cannot be assumed.
- How It Works: Ranks all observations, then compares the sums of the ranks between groups.

- LOAD ~ PHASE *(refer annexure for code)*:
- W = 0, p-value = 4.266e-07
- Conclusion: Significant difference in LOAD across phases.
- SEC.DEP ~ PHASE *(refer annexure for code)*:
- W = 0, p-value = 1.633e-09
- Conclusion: Significant difference in SEC.DEP across phases.

3. Sign Test for Median

- Purpose: Tests whether the median of a dataset is equal to a specified value.
- How It Works: Counts the number of observations above and below the hypothesized median. The test is based on the binomial distribution.

NSR_M$SEC.DEP (Tested median = 15) *(refer annexure for code)*:

- s = 322, p-value < 2.2e-16
- 95% CI: [200, 200]
- Conclusion: The true median is significantly different from 15, estimated median = 200.
- NSR_M$APP.FEE (Tested median = 1000) *(refer annexure for code)*:
- s = 0, p-value < 2.2e-16
- 95% CI: [29.5, 29.5]
- Conclusion: The true median is significantly different from 1000, estimated median = 29.5.

Regression Coefficients

Regression coefficients of a simple linear regression model where LOAD is the dependent variable and MAKE is the independent variable.
Explanation of Findings:

- Intercept ((Intercept)):
- Estimate: 750
- This is the baseline value of LOAD when MAKE is at its reference category (assumed to be the default level of MAKE in the dataset, such as the first alphabetical level).
- Standard Error: 6936.092
- Indicates the variability of the intercept estimate.
- t-value: 0.1081
- Measures how far the intercept is from 0 in terms of its standard error.
- p-value: 0.9191
- Not statistically significant (p > 0.05), meaning the intercept does not strongly suggest a baseline difference.

- Effect of MAKE (MAKEHPL - ELECTRIC):
- Estimate: 12,500
- This shows that the LOAD increases by 12,500 units when MAKE is "HPL - ELECTRIC" compared to the reference category.
- Standard Error: 8494.943
- Represents the variability of this coefficient estimate.
- t-value: 1.4715
- Measures how far the coefficient is from 0 in terms of its standard error.
- p-value: 0.2151
- Not statistically significant ($p > 0.05$), suggesting that the difference in LOAD associated with MAKE = "HPL - ELECTRIC" is not strong enough to rule out randomness.

CHAPTER 4

Advanced Data Analysis

4.1. Tests for More Than Two Samples

These tests are used when comparing more than two groups to determine if there are statistically significant differences among them.
Types of Tests:

- Parametric Tests:
  - One-way ANOVA: Analyzes differences among group means for a single factor (e.g., comparing loads across multiple areas).
  - Two-way ANOVA: Analyzes the effect of two independent factors (e.g., category and phase) and their interaction on the dependent variable.
- on-parametric Tests:
  - Kruskal-Wallis Test: Non-parametric alternative to one-way ANOVA, useful when data doesn't meet normality assumptions.
  - Friedman Test: Non-parametric alternative for repeated measures data.

Applications in Utility Management:

- Comparing mean energy consumption across multiple mandals.
- Analyzing the impact of different phases and categories on service charges.

4.2. One-Way and Two-Way Analysis of Variance

One-Way ANOVA:

- Purpose: Compare the means of more than two groups categorized by a single factor.
- Example: Analyzing if average load differs across three categories (e.g., domestic, commercial, industrial).

Steps:

1. Define null hypothesis (H0H_0H0): All group means are equal.
2. Calculate the F-statistic: Ratio of variance between groups to variance within groups.
3. Evaluate significance: Use p-values to reject or fail to reject H0H_0H0.

Two-Way ANOVA:

- Purpose: Determine the effect of two factors and their interaction on the dependent variable.
- Example: Assessing how phase (single or three) and area (urban or rural) affect energy consumption.

Steps:

- Include two factors and interaction terms in the model.
- Analyze individual and combined effects on the outcome variable.
- Use visual tools like interaction plots for interpretation.

4.3. Multiple Linear Regression (MLR)

MLR models the relationship between one dependent variable and multiple independent variables. It helps to identify how changes in predictors influence the outcome.

General Form:

$Y=\beta0+\beta1X1+\beta2X2+\ldots+\beta nXn+\epsilon Y$

Applications in Utility Management:

- Predicting load based on consumer category, phase, and capacity.
- Evaluating how various factors (e.g., mandal name, nature of supply) influence service charges.

Steps:

1. Identify dependent (e.g., load) and independent variables (e.g., category, phase).
2. Fit the regression model using least squares estimation.
3. Assess model fit using metrics like R2R^2R2, adjusted R2R^2R2, and p-values.

4.4. Estimation and Testing of Parameters in MLR

Parameter Estimation:

- Coefficients (β): Estimate the effect of each independent variable on the dependent variable.
- Use methods like Ordinary Least Squares (OLS) to minimize residuals and determine parameter values.

Testing Parameters:

- Hypothesis Tests:
  - Null Hypothesis (H0H_0H0): Parameter (βi\beta_iβi) is equal to zero (no effect).
  - Perform t-tests for each coefficient to check significance.
- Confidence Intervals: Provide a range of plausible values for each parameter estimate.

Diagnostics:

- Check for assumptions like linearity, normality, and homoscedasticity (equal variance).
- Use residual plots and variance inflation factors (VIF) to identify multicollinearity or violations.

Example in Utility Data:

- Estimate the impact of capacity and mandal name on service charges.
- Test if load significantly varies with consumer category after controlling for other factors.

4.5. Results

One-Way ANOVA

1.First ANOVA Model:

- Objective: This model tests whether the LOAD varies significantly based on the different categories in the NATURE.OF.SPPLY (Nature of Supply) variable.

ANOVA Output *(refer annexure for code)*:

- Sum of Squares:
  - NATURE.OF.SPPLY: 46,834,598
  - Residuals (Error): 1,054,206,221
- Degrees of Freedom:
  - NATURE.OF.SPPLY: 4
  - Residuals: 317
- Residual Standard Error: 1,823.615
- F-statistic: 3.521
- p-value: 0.00788

Summary Interpretation:

- F value: The F-value of 3.521 indicates that the variation in LOAD due to different NATURE.OF.SPPLY categories is greater than the variation due to residuals (errors).
- p-value: The p-value of 0.00788 is less than 0.05, which means the difference in LOAD across different categories of NATURE.OF.SPPLY is statistically significant. Thus, we can reject the null hypothesis that the means are equal and conclude that the nature of supply affects the LOAD.

2. Second ANOVA Model:

- Objective: This model tests whether LOAD varies significantly based on the different categories in the MAKE (Manufacturer) variable.

ANOVA Output *(refer annexure for code)*:

- Sum of Squares:
  - MAKE: 9,791,448
  - Residuals (Error): 1,091,249,371
- Degrees of Freedom:
  - MAKE: 1
  - Residuals: 320
- Residual Standard Error: 1,846.66
- F-statistic: 2.871
- p-value: 0.0911

Summary Interpretation:

- F value: The F-value of 2.871 indicates some difference in LOAD between the levels of MAKE, but it is not as strong as the first model.
- p-value: The p-value of 0.0911 is greater than 0.05, suggesting that the difference in LOAD based on the MAKE categories is not statistically significant at the 5% level. This means we fail to reject the null hypothesis and conclude that MAKE does not significantly affect LOAD.

One-Way ANOVA to compare the means of different categories of NATURE.OF.SPPLY (which represents different types of supply, such as Domestic, Industrial, Agricultural, etc.) on two dependent variables: LOAD and SEC.DEP.

Here's a breakdown of the output:

ANOVA Summary:

- Sum of Squares: Measures the variability. The between-group sum of squares is 1.528e+08, and the within-group sum of squares (Residuals) is 3.504e+09.
- Degrees of Freedom:
  - Between groups: 4 (there are 5 groups, hence df = 5-1 = 4).
  - Within groups: 317 (the total number of observations minus the number of groups).
- F-Statistic: The F-value is 3.456, which is the ratio of the variance between the groups to the variance within the groups.
- p-value: The p-value for the ANOVA test is 0.00879. Since this value is less than the significance level of 0.05, you can reject the null hypothesis and conclude that there is a significant difference in the means of LOAD and SEC.DEP across different NATURE.OF.SPPLY categories.

Tukey's Honest Significant Difference (HSD) Test:

This test is used to perform pairwise comparisons between the groups to identify which specific groups differ from each other.

- Key Columns in the output:
  - diff: The difference in means between the two groups being compared.
  - lwr: The lower bound of the confidence interval for the difference.
  - upr: The upper bound of the confidence interval for the difference.
  - p adj: The adjusted p-value for the pairwise comparison.

Interpretation of Tukey's HSD results:

- Significant Differences (p adj < 0.05):
  - NON-DOMESTIC AND COMMERCIAL-AGRICULTURAL vs. AGRICULTURAL: The mean difference is 2057.49, with a p-value of 0.0105, which is significant.
  - NON-DOMESTIC AND COMMERCIAL-DOMESTIC vs. DOMESTIC: The mean difference is 1827.64, with a p-value of 0.0051, which is also significant.
- Non-Significant Differences (p adj > 0.05):
  - Comparisons between DOMESTIC vs AGRICULTURAL, GENERAL PURPOSE vs AGRICULTURAL, and others show no significant difference based on their p-values being greater than 0.05.

Conclusion:

- The One-Way ANOVA has shown that there are significant differences in the means of LOAD and SEC.DEP across the different categories of NATURE.OF.SPPLY.
- The Tukey HSD test further highlights which pairs of categories are significantly different from each other. For example, Non-Domestic and Commercial supply is significantly different from Agricultural and Domestic supply types.

This analysis is helpful to understand how the LOAD and SEC.DEP values vary according to the type of supply (NATURE.OF.SPPLY).

Two-Way ANOVA

The model is also testing for an interaction effect between these two factors (i.e., whether the effect of one factor depends on the level of the other factor).
Key Results from the Output:

1. Sum of Squares:
   - MAKE: 9,791,448
   - NATURE.OF.SPPLY: 48,530,877
   - MAKE:NATURE.OF.SPPLY (Interaction): 36,312,765
   - Residuals (the unexplained variance): 1,006,405,730
2. Degrees of Freedom:
   - MAKE: 1 degree of freedom (because it is a single categorical factor with two levels).
   - NATURE.OF.SPPLY: 4 degrees of freedom (assuming there are five levels in this factor).
   - MAKE:NATURE.OF.SPPLY (Interaction): 2 degrees of freedom.
   - Residuals: 314 degrees of freedom (based on the sample size and number of factors).
3. Mean Squares:
   - Calculated by dividing the Sum of Squares by the degrees of freedom for each factor.
   - These values represent the average amount of variation attributable to each source.
4. F-Statistic:
   - MAKE: 3.055
   - NATURE.OF.SPPLY: 3.785
   - MAKE:NATURE.OF.SPPLY (Interaction): 5.665
   - F-statistics compare the variation between groups to the variation within groups.

5. P-Values:
    - MAKE: 0.08147 (indicating that MAKE is not statistically significant at the 0.05 level, but is borderline significant at 0.1).
    - NATURE.OF.SPPLY: 0.00506 (indicating that NATURE.OF.SPPLY is statistically significant at the 0.01 level).
    - MAKE:NATURE.OF.SPPLY (Interaction): 0.00383 (indicating that the interaction effect between MAKE and NATURE.OF.SPPLY is statistically significant).

Interpretation of Results:

- Main Effect of MAKE: The MAKE factor has a p-value of 0.08147, which suggests it is not statistically significant at the 0.05 level, but it could be significant at the 0.1 level. This means that the different MAKE levels might have a small impact on LOAD, but this effect is not strong enough to reject the null hypothesis at the typical 5% significance level.
- Main Effect of NATURE.OF.SPPLY: The NATURE.OF.SPPLY factor has a p-value of 0.00506, which is less than 0.01. This indicates that the different NATURE.OF.SPPLY levels have a significant effect on LOAD, meaning that the type of supply category has a clear influence on the outcome.
- Interaction Effect (MAKE:NATURE.OF.SPPLY): The interaction term has a p-value of 0.00383, which is significant ($p < 0.05$). This suggests that the effect of MAKE on LOAD depends on the level of NATURE.OF.SPPLY. In other words, the influence of MAKE might vary depending on the type of supply, and there is a significant interaction between the two factors.

Logistic Regression

GLMs extend traditional linear regression to allow for a broader range of response variable distributions and relationships between the predictors and the response variable. They are used when the dependent variable does not follow a normal distribution or when the relationship between the predictors and the response is non-linear.

1. Model 1:
This model includes an intercept and the independent variable LOAD.
Key Results *(refer annexure for code)*:

- Coefficients:
  - Intercept: 1.1213841 (This represents the baseline value of the log-odds of the dependent variable when LOAD = 0).
  - LOAD: 0.0000595 (This indicates the change in the log-odds of CATEGORY for each unit increase in LOAD).
- Deviance:
  - Null Deviance: 54.82 (The deviance of the model with only the intercept, representing the total variability in the data).
  - Residual Deviance: 50.92 (The deviance of the fitted model, representing the variability left unexplained by the model).
- AIC: 325.9 (The Akaike Information Criterion, used for model selection. Lower values indicate better model fit).

Interpretation:

- The model is suggesting that LOAD has a very small impact on the dependent variable CATEGORY, as indicated by the small coefficient value (0.0000595).
- A reduction in deviance from 54.82 (null model) to 50.92 (fitted model) suggests that including LOAD explains some variability in CATEGORY, but the effect is relatively weak.

2. Model 2:

This model excludes the intercept (specified by 0 + LOAD), meaning the relationship is forced to pass through the origin.

Key Results *(refer annexure for code)*:

- Coefficients:
  - LOAD: 0.000325 (This represents the relationship between CATEGORY and LOAD when no intercept is included).
- Deviance:
  - Null Deviance: 508 (Larger than Model 1, likely because excluding the intercept increases the overall variability in the null model).
  - Residual Deviance: 351.2 (Indicates the variability left unexplained by the model).
- AIC: 945.7 (Much higher than Model 1, suggesting poorer model fit compared to the first model).

Interpretation:

- The absence of the intercept forces the model to assume that when LOAD = 0, the predicted value of CATEGORY is also 0, which might not align well with the data.
- The higher AIC and residual deviance indicate that this model fits the data worse than Model 1.

Comparison of Models:

- Model 1 (with an intercept) performs better than Model 2 (no intercept), as indicated by lower AIC and residual deviance.
- The relationship between LOAD and CATEGORY appears weak in both models, given the small coefficients and minimal reduction in deviance.

Multiple Linear Regression

The model:

- LOAD: The dependent variable being modeled.
- MAKE, PHASE, CAPACITY: Independent variables explaining variations in LOAD.

Coefficients *(refer annexure for code)*:

(Intercept): 750

MAKEHPL - ELECTRIC: 15250

PHASE: NA

CAPACITY100/5A: -11000

- Intercept (750): Baseline value of LOAD when all predictors are at their reference levels.
- MAKEHPL - ELECTRIC (15250): Adjusts the baseline by adding 15250 when the "MAKE" is "HPL - ELECTRIC."
- PHASE (NA): Indicates an issue, possibly due to perfect multicollinearity or lack of variation in the "PHASE" variable.
- CAPACITY100/5A (-11000): Adjusts LOAD by subtracting 11000 when "CAPACITY" is "100/5A."

3. Predictions

Using predict()*(Refer annexure for code)*:

- Prediction for MAKE="HPL - ELECTRIC", PHASE=1, CAPACITY="100/5A" is 5000.
- Formula: LOAD=750+15250−11000=5000

For:

- Prediction for MAKE="HIMACHAL ENERGY", PHASE=1, CAPACITY="10-40A" is 750, as neither PHASE nor CAPACITY contribute significantly (or are missing).*(refer annexure for code)*

- Prediction from rank-deficient fit; attr(*, "non-estim") has doubtful cases
- This occurs due to collinearity or insufficient variation among predictors, causing some coefficients to become indeterminate (e.g., PHASE = NA).

5. Model Without Intercept

- Removes the intercept term, allowing coefficients to represent the absolute contribution of each level.
- Coefficients now include *(refer annexure for code)*:

MAKEHIMACHAL ENERGY: 750
MAKEHPL - ELECTRIC: 16000
PHASE: NA
CAPACITY100/5A: -11000
This approach assigns absolute values to categories of "MAKE" while excluding a baseline reference level.

Factor Analysis, PCA, and Hierarchical Clustering

1. Factor Analysis

Purpose:

Factor Analysis identifies underlying latent variables (factors) that explain correlations among observed variables.

Results Interpretation:

- Key Variables: LOAD, SEC.DEP, DEV.CHG, and APP.FEE were analyzed.
- Loadings:
  - MR1 (Factor 1): Strongly loads on LOAD, SEC.DEP, and DEV.CHG (all above 0.96).
  - MR2 (Factor 2): Strongly loads on APP.FEE (0.98).
  - MR3 (Factor 3): Minimal contribution to variance.
- Proportion Variance Explained:
  - MR1 explains 73% of variance.
  - MR2 explains an additional 26%.
  - MR3 contributes insignificantly.
- Chi-Square Test:
  - Fit indices indicate good reliability (e.g., Tucker Lewis Index = 1.004).
  - Residuals are minimal, suggesting the factors sufficiently explain the correlations.

Issues and Warnings:

- Missing values in the variable MF caused an error. Excluding MF allowed the analysis to proceed.
- Some loadings or results are highly skewed (e.g., standard deviation of residuals = 0), indicating potential data imbalance or redundancy.

2. Principal Component Analysis (PCA)

Purpose:

PCA reduces dimensionality while retaining most variance.

Setup:

- Variables used: LOAD, SEC.DEP, DEV.CHG, and APP.FEE.
- Standardization ensures comparability among variables with different scales.

Results:

- Principal Components:
  - PC1 explains 78.33% of the variance.
  - PC2 explains an additional 21.20%, capturing a combined 99.53%.
  - PC3 and PC4 are negligible, contributing <1%.
- Scree Plot: Sharp drop after PC2 confirms only 2 significant components.
- Biplot: Visualizes the contribution of variables to PC1 and PC2, showing clusters or relationships.

3. Hierarchical Clustering

Purpose:

Clustering groups similar observations based on a distance metric (e.g., Euclidean).

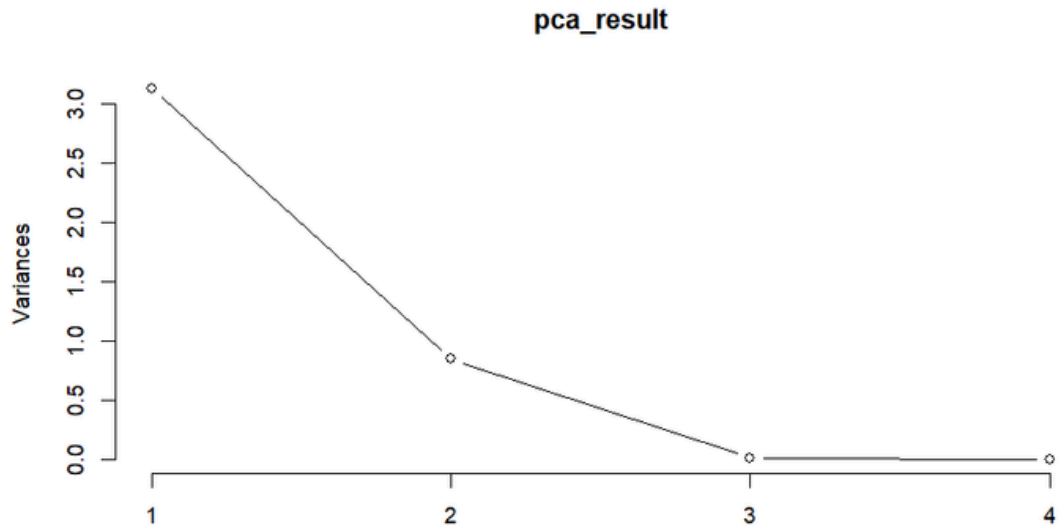
Setup:

- Distance matrix computed using Euclidean distance.
- Clustering method: Ward's method, which minimizes intra-cluster variance.

Dendrogram:

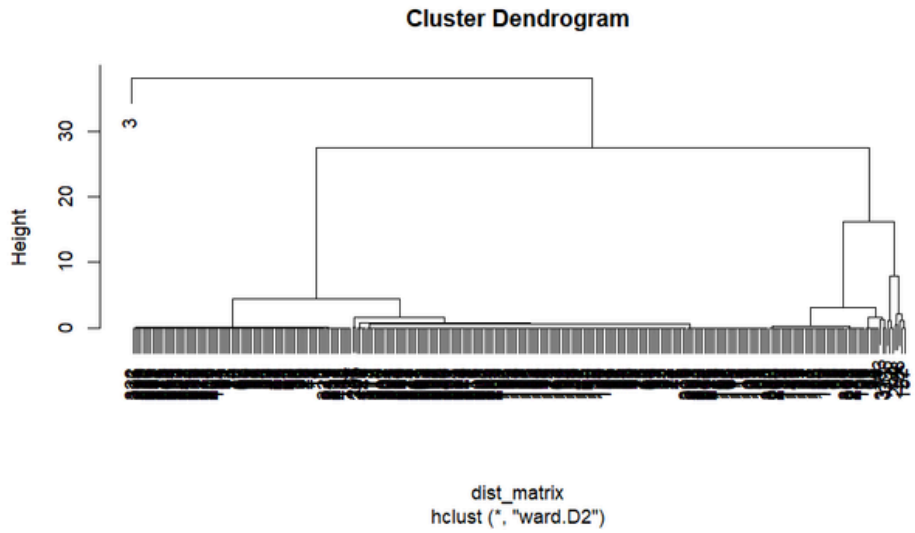
- Visualizes clusters hierarchically.
- Can be used to determine an optimal number of clusters by cutting the tree at an appropriate height.

Plot of PCA Result



The graph explains that the majority of variance is explainedby first one or two components, as there is steep drop in variance after PC1 or PC2. This indicates that these components are most important for summarizing the data.

Cluster Dendogram



C H A P T E R 5

Summary , Conclusions & Recommendations

Summary

The primary objective of the data collection was to comprehensively examine utility management practices in the Southern Power Distribution Company of Telangana Ltd. (TSSPDCL), specifically within the Mahbubnagar Operation Circle. The dataset focused on consumer behavior, electricity usage, and operational metrics, sourced from TSSPDCL's official records and databases. Information was gathered through data extraction from Management Information Systems (MIS), structured field surveys, and document reviews of scanned forms and agreements. This process ensured the inclusion of diverse variables, such as consumer identifiers, geographic details, operational attributes, meter data, financial records, and service details, providing a robust foundation for analysis.

Data preparation involved systematic cleaning, transformation, and integration to ensure quality and readiness for analysis. Missing data was handled through imputation or exclusion, and duplicates were removed using unique identifiers like SERVICE.NO. Variables were standardized, categorical fields encoded, and dates reformatted for consistency. Feature selection was employed to exclude irrelevant fields, and Principal Component Analysis (PCA) reduced redundancy and addressed multicollinearity. Validation steps ensured logical consistency and coherence between variables, enhancing the dataset's reliability.

The process also utilized advanced tools such as R and Microsoft Excel for data cleaning, transformation, and validation. Data integration merged information from multiple sources using unique keys, while feature engineering created new variables to enhance analytical insights. Consistency checks and statistical validations ensured accuracy, while tools like SQL databases supported efficient data querying and integration.

The final processed dataset was ready for statistical and predictive analyses, including regression, ANOVA, clustering, and PCA. Descriptive statistics summarized key variables, while inferential statistics and predictive models provided actionable insights. Ethical considerations, such as anonymization and regulatory compliance, safeguarded consumer privacy. Despite challenges like missing data and variability, the comprehensive methodology ensured a reliable and structured dataset for utility management analysis.

Data Exploration and Findings in Chapter -2

The dataset reveals several key patterns and insights. Variables such as MF, PHASE, and SEC.DEP show minimal or zero variance across a significant portion of the data, indicating homogeneity in these fields. In contrast, variables like LOAD and DEV.CHG exhibit large ranges, pointing to significant variability and potential outliers, with LOAD, for instance, reaching a maximum of 30,000 and displaying characteristics of a right-skewed distribution due to its high range, large IQR, and relatively low mean. The high frequency of specific values, such as modes in CATEGORY and LOAD, reflects recurring patterns that may signify typical operational scenarios or potential data duplication. Central tendencies, including mean, median, and mode, are consistent for many fields, indicating uniform or normal distributions. Relationships between variables also offer insights, such as the positive covariance between CATEGORY and LOAD, which suggests that higher categories (e.g., industrial or commercial consumers) are associated with increased electricity loads. Additionally, the dominance of certain values in frequency tables, such as Category 1 in CATEGORY and frequent values like 500 or 1000 in LOAD, highlights patterns in consumer behavior. Seasonal or temporal trends could also be explored using date fields like PR.DATE, which may reveal clustering of data entries on specific dates.

Data Exploration and Findings in Chapter -3

The point forecast represents the model's best estimate of future values for the "CATEGORY" variable, providing a precise predicted value. Confidence intervals complement this by accounting for uncertainty; the 80% confidence interval offers a narrower range with higher certainty about the predicted values, while the 95% confidence interval is broader, ensuring a more conservative estimate that increases the likelihood of capturing the true value. For example, the model predicts that "HPL - ELECTRIC" will have a significantly higher load (by 12,500 units) than "HIMACHAL ENERGY," with respective predicted loads of 13,250 and 750 units, demonstrating the relationship between "MAKE" and "LOAD."

In interpreting coefficients, the intercept of 10,800 indicates the baseline DEV.CHG for a reference AREA.CODE, while adjustments for other codes are reflected in their coefficients. For instance, an AREA.CODE of 1207 adds 12,600, resulting in a total DEV.CHG of 23,400, whereas an AREA.CODE of 302 decreases the charge by 9,900, leaving a predicted value of 900. These coefficients help estimate development charges for different areas relative to the baseline.

Statistical tests reveal significant findings across multiple dimensions. t-tests confirm meaningful differences in means between various groups, while proportion tests identify significant deviations in category proportions from hypothesized values. Variance tests highlight substantial differences in group variances, and correlation tests show strong positive relationships between SEC.DEP, DEV.CHG, and APP.FEE, suggesting interconnected financial patterns. This comprehensive analysis underscores the model’s ability to uncover critical patterns and insights in the dataset.

Data Exploration and Findings in Chapter -4

The regression analysis reveals that while the coefficients for the intercept and the effect of MAKEHPL - ELECTRIC on LOAD are calculated, neither is statistically significant, indicating a weak or inconclusive relationship between LOAD and MAKE. This may result from high variability or an insufficient sample size. Similarly, analysis across models shows varying levels of significance. For instance, in the first model based on NATURE.OF.SPPLY, there is a significant difference in LOAD across supply categories (p-value = 0.00788). In contrast, the second model focusing on MAKE shows no significant differences in LOAD at the 5% significance level (p-value = 0.0911).

The One-Way ANOVA confirms significant differences in the means of LOAD and SEC.DEP across different NATURE.OF.SPPLY categories. The Tukey HSD test identifies which pairs of categories differ significantly; for example, Non-Domestic and Commercial supply types differ significantly from Agricultural and Domestic types. Further analysis reveals that the main effects of NATURE.OF.SPPLY and PHASE on LOAD are statistically significant when their respective p-values are below 0.05, indicating these factors strongly influence LOAD. Additionally, a significant interaction effect between NATURE.OF.SPPLY and PHASE suggests that the influence of supply type on LOAD varies by phase.

While MAKE might have a minor effect on its own, it is not strongly significant. However, the interaction between MAKE and NATURE.OF.SPPLY is significant, emphasizing the importance of considering their combined effect on LOAD. In multiple linear regression (MLR), Model 1 (with an intercept) performs better than Model 2 (without an intercept) based on lower AIC and residual deviance. However, the relationship between LOAD and CATEGORY remains weak in both models, reflected in small coefficients and minimal reductions in deviance.

Exploratory techniques like factor analysis and PCA identified two key latent factors (MR1 and MR2) that capture most of the variance, validating the dimensionality reduction approach. Clustering further supports segmentation tasks by uncovering group structures based on data similarity, which could be leveraged for targeted analysis or operational improvements. These findings collectively highlight the complex interplay of variables in explaining LOAD and guide further refinement of predictive models.

Conclusion

The analysis of utility management data from the Southern Power Distribution Company of Telangana Ltd. (TSSPDCL) revealed significant patterns in electricity consumption across various consumer categories such as Domestic, Agricultural, and Industrial. Key variables like LOAD, SEC.DEP, and DEV.CHG played a crucial role in explaining consumption behavior, with distinct financial and technical profiles observed across different groups. While statistical techniques like ANOVA, regression, and clustering provided valuable insights into energy usage and consumer behavior, challenges like missing data, multicollinearity, and limited predictive accuracy highlight the need for further refinement in data collection and modeling.

Recommenadtions

- Improve data quality by addressing missing values and ensuring consistency in key variables, such as MF and LOAD.
- Explore additional predictors (e.g., demographic factors, geographic information) to enhance model accuracy and predictive power.
- Investigate the impact of external factors, such as weather conditions and policy changes, on consumption patterns.
- Consider incorporating time-series data to better understand seasonal and trend-based consumption behaviors.
- Tailor pricing models and resource allocation strategies based on distinct consumer clusters identified in the analysis.
- Reduce multicollinearity by revisiting variable selection or using regularization techniques like ridge or lasso regression.
- Implement more advanced machine learning techniques for improved predictive modeling and accuracy in forecasting future consumption trends.

Annexure

R code used for analysis

```
NSR_M<-read.csv("C:\\Users\\pc\\OneDrive\\Documents\\project
data\\NSR_MAHD.csv",header = TRUE)
NSR_M

attach(NSR_M)
#descriptive statistics
summary(NSR_M)
str(NSR_M)
names(NSR_M)
dim(NSR_M)
des_NSR_M<-NSR_M[,sapply(NSR_M,is.numeric)]
des_NSR_M
as.Date(DATE)
factor(PHASE)
#min
minf<-function(x){
  r<-min(x)
  return(r)
 }
 for(i in 1:13){
  res<-minf(des_NSR_M[i])
  cat("Min of",names(des_NSR_M[i]),"is",res,'\n')
 }

#max
maxf<-function(x){
 r<-max(x)
 return(r)
}
for(i in 1:13){
 res<-maxf(des_NSR_M[i])
 cat("Max of",names(des_NSR_M[i]),"is",res,'\n')
```

```
#qunatile
quaf<-function(x){
 r<-quantile(x)
 return(r)
}
for(i in 1:13){
 res<-quaf(unlist(des_NSR_M[i]))
 for(j in 1:4){
 cat(j,"th quantile of",names(des_NSR_M[i]),"is",res[j],'\n')
}
}
#idr
iqrf<-function(x){
 r<-IQR(x)
 return(r)
}
for(i in 1:13){
 res<-iqrf(unlist(des_NSR_M[i]))
 cat("Interquartile Range of",names(des_NSR_M[i]),"is",res,'\n')
}
#qda
qdaf<-function(x){
 r<-IQR(x)/2
 return(r)
}
for(i in 1:13){
 res<-qdaf(unlist(des_NSR_M[i]))
 cat("Quartile Deviation of",names(des_NSR_M[i]),"is",res,'\n')
}
```

```
#range
rangef<-function(x){
 r<-range(x)
 return(r)
}
for(i in 1:13){
 res<-rangef(s[i])
 cat("Range of",names(des_NSR_M[i]),"is",res,'\n')
}
#sum
sumf<-function(x){
 r<-sum(x)
 return(r)
}
for(i in 1:13){
 res<-sumf(des_NSR_M[i])
 cat("Sum of",names(des_NSR_M[i]),"is",res,'\n')
}

}



#mean
meanf<-function(x){
 r<-mean(x)
 return(r)
}
for(i in 1:13){
 res<-meanf(unlist(des_NSR_M[i]))
 cat("Mean of",names(des_NSR_M[i]),"is",res,'\n')


mean deviation
madf<-function(x){
 r<-mad(x)
 return(r)
}
for(i in 1:13){
 res<-madf(unlist(des_NSR_M[i]))
 cat("Mean deviation of",names(des_NSR_M[i]),"is",res,'\n')
}
```

```
#sda
sdaf<-function(x){
 r<-sd(x)
 return(r)
}
for(i in 1:13){
 res<-sdaf(unlist(des_NSR_M[i]))
 cat("Standard Deviation of",names(des_NSR_M[i]),"is",res,'\n')
}

#deciles
decff<-function(x){
 r<-quantile(x,seq(0,1,by=0.1))
 return(r)
}
for(i in 1:13){
 res<-decff(unlist(des_NSR_M[i]))
 for(j in 1:10){
 cat(j,"th Decile of",names(des_NSR_M[i]),"is",res[j],'\n')
 }
}



#octiles
octf<-function(x){
 r<-quantile(x,seq(0,1,by=0.125))
 return(r)
}
for(i in 1:13){
 res<-octf(unlist(des_NSR_M[i]))
 for(j in 1:8){
 cat(j,"th Octile of",names((des_NSR_M[i])),"is",res[j],'\n')
 }
}
```

```
#median
medianf<-function(x){
 r<-median(x)
 return(r)
}
for(i in 1:13){
 res<-medianf(unlist(des_NSR_M[i]))
 cat("Median of",names(des_NSR_M[i]),"is",res,'\n')
}


#


#mode
NSR_MM<-NSR_M[c(-1,-3,-11,-19,-26)]
getmode<- function(v){
 x<-table(v)
 y<-max(x)
 a<-names(x)[which(x==y)]
 return(a)
}
for(i in 1:21){
 res<-getmode(unlist(NSR_MM[i]))
 cat("mode of",names((NSR_MM[i])),"is",res,'\n')
}


#cv
cvfun<-function(a,b){
 cv<-cov(a,b)
 return(cv)
}
for (i in 1:12) {
 for(j in 2:13){
 res<-cvfun(unlist(des_NSR_M[i]),unlist(des_NSR_M[j]))
 cat("covariance of",names(des_NSR_M[i]),"and",names(des_NSR_M[j]),"is",res,'\n')
}
}
```

```
#cor
corfun<-function(a,b){
 cv<-cor(a,b)
 return(cv)
}
for (i in 1:12) {
 for(j in 2:13){
 res<-corfun(unlist(des_NSR_M[i]),unlist(des_NSR_M[j]))
 cat("correlation of",names(des_NSR_M[i]),"and",names(des_NSR_M[j]),"is",res,'\n')
}
}


#UNIVARIATE TABLE
NSR_UT<-NSR_MM[c(-1,-2,-3,-4,-16,-17)]
dim(NSR_UT)
utf<-function(x){
 r<-table(x)
 return(r)
}
for(i in 1:15){
 res<-utf(NSR_UT[i])
 print(res)
}

#BIVAR
NSR_BT<-NSR_MM[c(-1,-3,-7,-16,-17,-18,-19,-20,-21)]
dim(NSR_BT)
names(NSR_MM)
btf<-function(x,y){
 r<-table(x,y)
 return(r)
}
for(i in 1:11){
 for(j in 2:12)
 res<-btf(unlist(NSR_BT[i]),unlist(NSR_BT[j]))
 print(res)
}
```

```
#pie chart
pie(table(NSR_M$CATEGORY),main=" PIE CHART OF CATEGORY",col=rainbow(3))
pie(table(NSR_M$PHASE),main=" PIE CHART OF PHASE",col=rainbow(5))
pie(table(NSR_M$NATURE.OF.SPPLY),main=" PIE CHART OF NATURE OF
SUPPLY",col=rainbow(3))
pie(table(NSR_M$MAKE),main=" PIE CHART OF MAKE",col=rainbow(2),labels =
c("HIMACHAL ENERGY","HPL - ELECTRIC"))


#hist
hist(NSR_M$APP.FEE)
hist(NSR_M$SEC.DEP)

#barplot
barplot(table(NSR_M$DEV.CHG))
barplot(table(NSR_M$DATE))
barplot(table(NSR_M$AREA.CODE))
barplot(table(NSR_M$MANDAL.NAME))


#Predictive statistics
install.packages("forecast")
library(forecast)
ts_data <- ts(NSR_M$CATEGORY, frequency = 12) # Assuming monthly data
fit <- auto.arima(ts_data)
forecast(fit, h = 12)


NSR_MH<-head(NSR_M)
NSR_MH
```

```
#load prediction
lm_model <- lm(LOAD ~ NATURE.OF.SPPLY + PHASE + AREA.CODE, data = NSR_MH)
lm_model
summary(lm_model)
test_data <- data.frame(
 NATURE.OF.SPPLY = c("DOMESTIC", "NON-DOMESTIC AND COMMERCIAL",
"AGRICULTURAL", "AGRICULTURAL", "DOMESTIC",
 "NON-DOMESTIC AND COMMERCIAL"),
 PHASE = c(1, 3, 1, 2, 3,1),
 AREA.CODE = c(101, 102, 103, 104, 101, 102)

)
predicted_load<-predict(lm_model, newdata = test_data)
predicted_load
test_data$Predicted_load <- predicted_load
print(test_data)

lm_model <- lm(LOAD ~ MAKE, data = NSR_MH)
lm_model
coef(summary(lm_model))
predict(lm_model, newdata = data.frame(MAKE="HPL - ELECTRIC"))
predict(lm_model, newdata = data.frame(MAKE="HIMACHAL ENERGY"))

lm_model <- lm(LOAD ~ 0+MAKE, data = NSR_MH)
lm_model


#dev.chg
lm_model <- lm(DEV.CHG ~ as.character(AREA.CODE) , data = NSR_MH)
lm_model
predict(lm_model, newdata = data.frame(AREA.CODE=302))



#PRESCRIPTIVE
t.test(NSR_M$LOAD, mu = 10)
t.test(NSR_M$SEC.DEP, mu = 12)
t.test(NSR_M$SEC.DEP, NSR_M$DEV.CHG)
t.test(NSR_M$SEC.DEP, NSR_M$APP.CHG)
t.test(LOAD ~ PHASE, data = NSR_M)
t.test(CATEGORY ~ PHASE, data = NSR_M)
```

```
#load prediction
lm_model <- lm(LOAD ~ NATURE.OF.SPPLY + PHASE + AREA.CODE, data = NSR_MH)
lm_model
summary(lm_model)
test_data <- data.frame(
 NATURE.OF.SPPLY = c("DOMESTIC", "NON-DOMESTIC AND COMMERCIAL",
"AGRICULTURAL", "AGRICULTURAL", "DOMESTIC",
 "NON-DOMESTIC AND COMMERCIAL"),
 PHASE = c(1, 3, 1, 2, 3,1),
 AREA.CODE = c(101, 102, 103, 104, 101, 102)

)
predicted_load<-predict(lm_model, newdata = test_data)
predicted_load
test_data$Predicted_load <- predicted_load
print(test_data)

lm_model <- lm(LOAD ~ MAKE, data = NSR_MH)
lm_model
coef(summary(lm_model))
predict(lm_model, newdata = data.frame(MAKE="HPL - ELECTRIC"))
predict(lm_model, newdata = data.frame(MAKE="HIMACHAL ENERGY"))

lm_model <- lm(LOAD ~ 0+MAKE, data = NSR_MH)
lm_model


#dev.chg
lm_model <- lm(DEV.CHG ~ as.character(AREA.CODE) , data = NSR_MH)
lm_model
predict(lm_model, newdata = data.frame(AREA.CODE=302))



#PRESCRIPTIVE
t.test(NSR_M$LOAD, mu = 10)
t.test(NSR_M$SEC.DEP, mu = 12)
t.test(NSR_M$SEC.DEP, NSR_M$DEV.CHG)
t.test(NSR_M$SEC.DEP, NSR_M$APP.CHG)
t.test(LOAD ~ PHASE, data = NSR_M)
t.test(CATEGORY ~ PHASE, data = NSR_M)
```

```
prop.test(x = sum(NSR_M$NATURE.OF.SPPLY == "Domestic"), n = nrow(NSR_M), p = 0.3)
prop.test(x = sum(NSR_M$NATURE.OF.SPPLY == "AGRICULTURAL"), n =
nrow(NSR_M), p = 0.2)
prop.test(x = sum(NSR_M$MAKE == "HPL - ELECTRIC"), n = nrow(NSR_M), p = 0.2)
prop.test(x = sum(NSR_M$MAKE == "HIMACHAL"), n = nrow(NSR_M), p = 0.7)



prop.test(c(sum(NSR_M$MANDAL.NAME == "MOHAMMADABAD "),
sum(NSR_M$MANDAL.NAME == " MOKARLABAD")),
 c(nrow(NSR_M[NSR_M$MANDAL.NAME == "MOHAMMADABAD ", ]),
nrow(NSR_M[NSR_M$MANDAL.NAME == "MOKARLABAD", ])))

var.test(NSR_M$LOAD,NSR_M$SEC.DEP, alternative = "two.sided", ratio = 1)
var.test(NSR_M$LOAD,NSR_M$DEV.CHG, alternative = "two.sided", ratio = 1)
var.test(NSR_M$DEV.CHG,NSR_M$SEC.DEP)
var.test(NSR_M$DEV.CHG,NSR_M$APP.FEE)
var.test(LOAD ~ PHASE, data = NSR_M)
var.test(SEC.DEP ~ PHASE, data = NSR_M)

cor.test(NSR_M$SEC.DEP, NSR_M$DEV.CHG)
cor.test(NSR_M$SEC.DEP, NSR_M$APP.FEE)
cor.test(NSR_M$APP.FEE, NSR_M$DEV.CHG)



install.packages("randtests")
library(randtests)
runs.test(NSR_M$LOAD)
runs.test(NSR_M$SEC.DEP)
runs.test(NSR_M$APP.FEE)
runs.test(NSR_M$DEV.CHG)


wilcox.test(LOAD ~ PHASE, data = NSR_M)
wilcox.test(SEC.DEP ~ PHASE, data = NSR_M)

library(BSDA)
SIGN.test(NSR_M$SEC.DEP, md = 15)
SIGN.test(NSR_M$APP.FEE, md = 1000)
```

```
#PRESCRIPTIVE STATISTICS
anova_model <- aov(LOAD ~ NATURE.OF.SPPLY, data = NSR_M)
#PRESCRIPTIVE STATISTICS
anova_model
summary(anova_model)
anova_model <- aov(LOAD+SEC.DEP ~ NATURE.OF.SPPLY, data = NSR_M)
#PRESCRIPTIVE STATISTICS
anova_model
summary(anova_model)
anova_model <- aov(LOAD ~ MAKE*NATURE.OF.SPPLY, data = NSR_M)
#PRESCRIPTIVE STATISTICS
anova_model
summary(anova_model)

TukeyHSD(anova_model)




#logistic
glmm<-glm(CATEGORY~LOAD,data=NSR_M)
glmm

glmm1<-glm(CATEGORY~0+LOAD,data=NSR_M)
glmm1

#mlr
lm_model <- lm(LOAD ~ MAKE+PHASE+CAPACITY, data = NSR_MH)
lm_model
predict(lm_model, newdata = data.frame(MAKE="HPL -
ELECTRIC",PHASE=1,CAPACITY="100/5A"))
predict(lm_model, newdata = data.frame(MAKE="HIMACHAL
ENERGY",PHASE=1,CAPACITY="10-40A"))

lm_model <- lm(LOAD ~ 0+MAKE+PHASE+CAPACITY, data = NSR_MH)
lm_model
```

```
install.packages("psych")
library(psych)

# Select numeric columns for factor analysis
numeric_data <- NSR_M[, sapply(NSR_M, is.numeric)]

# Factor analysis with 2 factors (modify number as needed)
factor_analysis <- fa(numeric_data, nfactors = 3, rotate = "varimax")
print(factor_analysis)

names(NSR_M)
# Example: PCA on numerical data
numeric_data <- NSR_M[c(10,16,17,18)]

# Standardizing the data
scaled_data <- scale(numeric_data)

# PCA
pca_result <- prcomp(scaled_data)
summary(pca_result)

# Scree plot
plot(pca_result, type = "l")
biplot(pca_result)

dist_matrix <- dist(scaled_data, method = "euclidean")
hclust_model <- hclust(dist_matrix, method = "ward.D2")
plot(hclust_model)
```

	S.no	DATE	REGI.NO	CONSUME	CONSUME	AREA NAM	MANDAL I	NATURE C	CATEGOR	LOAD	METER NO	MAKE	PHASE	CAPACITY	MF	SEC DEP	DEV CHG	APP FEE	DD NO	DD DATE	PR NO	PR DATE	DATE OF			
2	1	24/06/2024	NR913244	VADLA SR	9-10 ,DES/	DESAIPALI	DESAIPALI	NON-DOM	2	9000	7795120	HPL - ELECTRIC	3	10-40A	1	7200	10800	59	2361466297	24/06/2024	91303060843	24/06/2024	1/7/2024	1203	1527008008	120300398
3	3	26/07/2024	NR913244	KOTHA AN	2-29/1 ,M	MOHAMM	MOHAMM	NON-DOM	2	9000	7786410	HPL - ELECTRIC	3	10-40A	1	7200	10800	59	2396020295	26/07/2024	91303061036	26/07/2024	31/07/2024	1207	1527007006	120703335
4	4	28/12/2023	NR913233	P BASAIAH	SYNO 403,	KANCHAN	KANCHAN	NON-DOM	2	30000	5198813	HPL - ELECTRIC	3	10-40A	1	24000	36000	59	96152	28/05/2024	91304003243	28/12/2023	8/8/2024	1207	1527012017	120703336
5	7	23/12/2023	NR913233	KALAL BAI	5-11/5 ,DE	DESAIPALI	DESAIPALI	DOMESTIC	2	5000	8317588	HPL - ELECTRIC	3	100/5A	1	4000	6000	59	96029	22/12/2023	91304003139	23/12/2023	27/12/2023	1238	1527019029	123801724
6	8	3/11/2023	NR913233	KORRA DE	1-71 ,ANN	ANNARED	ANNARED	AGRICULT	1	500	HE23082135693	HIMACHAL ENERGY	1	10-40A	1	200	600	29.5	5614	2/11/2023	91304002209	3/11/2023	9/11/2023	302	1527002006	302000403
7	9	26/03/2024	NR913243	VISLAVATI	5-1/36/1 ,	ANNARED	ANNARED	AGRICULT	1	1000	HE23122158209	HIMACHAL ENERGY	1	10-40A	1	200	1200	29.5	2281431458	26/03/2024	91304005289	26/03/2024	27/03/2024	302	1527002006	302000404
8	14	7/5/2024	NR913244	KATRAVA	1-61/1 ,AN	ANNARED	ANNARED	NON-DOM	1	500	HP24013567650	HPL - ELECTRIC	1	10-40A	1	200	600	29.5	2321097792	7/5/2024	91304005557	7/5/2024	13/05/2024	302	1527002007	302000409
9	16	19/07/2024	NR913244	KATRAVA	1-75/1 ,AN	ANNARED	ANNARED	DOMESTIC	2	2000	HP24036937587	HPL - ELECTRIC	1	5-30A	1	1600	2400	59	674431	18/07/2024	91303061001	19/07/2024	26/07/2024	302	1527002006	302000411
10	17	12/9/2024	NR913244	KATRAVA	1-52 ,ANN	ANNARED	ANNARED	DOMESTIC	1	1000	HP24036938132	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	305247	2/9/2024	91303061313	12/9/2024	19/09/2024	302	1527002006	302000412
11	18	20/09/2024	NR913244	SABAVATI	1-73 ,ANN	ANNARED	ANNARED	AGRICULT	1	500	HP24036938022	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2441012104	20/09/2024	91303061356	20/09/2024	25/09/2024	302	1527002006	302000413
12	19	16/10/2024	NR913244	KADAVATI	1-97/1 ,AN	ANNARED	ANNARED	AGRICULT	1	500	HP24036938526	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2459457525	16/10/2024	91303061457	16/10/2024	24/10/2024	302	1527002006	302000414
13	25	23/09/2023	NR913233	MD HARSI	1-81 ,CHO	CHOWDAI	CHOWDAI	DOMESTIC	1	500	HP23053539375	HPL - ELECTRIC	1	5-30A	1	200	708	29.5	5290	22/09/2023	91304001253	23/09/2023	30/09/2023	308	1527007020	308000671
14	26	21/11/2023	NR913233	PUJARI GA	1-80 ,CHO	CHOWDAI	CHOWDAI	AGRICULT	2	2000	HE23092138201	HIMACHAL ENERGY	1	5-30A	1	1600	2400	59	5703	21/11/2023	91304002602	21/11/2023	26/11/2023	308	1527320031	308000672
15	27	21/11/2023	NR913233	PUJARI VE	1-80 ,CHO	CHOWDAI	CHOWDAI	AGRICULT	1	500	HE23092138201	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	5685	20/11/2023	91304002603	21/11/2023	26/11/2023	308	1527320031	308000673
16	31	13/02/2024	NR913243	SABHAVA	4-19 ,CHO	CHOWDAI	CHOWDAI	AGRICULT	1	1000	HE23122158227	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	281715	12/2/2024	91304004526	13/02/2024	20/02/2024	308	1527320031	308000677
17	32	22/02/2024	NR913243	KATRAVA	4-30 ,CHO	CHOWDAI	CHOWDAI	AGRICULT	1	1000	HE23122157781	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	96105	13/02/2024	91304004740	22/02/2024	26/02/2024	308	1257340010	308000678
18	43	6/3/2024	NR913243	MUBINA B	2-43/AA ,(	CHOWDAI	CHOWDAI	DOMESTIC	1	1000	HE23122158261	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	2262154281	6/3/2024	91304005053	6/3/2024	15/03/2024	308	1527320031	308000689
19	44	6/3/2024	NR913243	JOGU ALIV	1-37 ,CHO	CHOWDAI	CHOWDAI	DOMESTIC	1	500	HE23122158261	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	2262185448	6/3/2024	91304005055	6/3/2024	14/03/2024	308	1527007033	308000690
20	45	6/3/2024	NR913243	JOGU CHA	1-55 ,CHO	CHOWDAI	CHOWDAI	AGRICULT	1	500	HE23122158261	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	2262196346	6/3/2024	91304005055	6/3/2024	14/03/2024	308	1527308006	308000691
21	46	7/5/2024	NR913244	KAVALI KR	1-10/B ,CH	CHOWDAI	CHOWDAI	DOMESTIC	1	500	HP24013567650	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2321087393	7/5/2024	91304005557	7/5/2024	13/05/2024	308	1527320031	308000692
22	48	14/08/2024	NR913244	VADDE RA	2-61/A ,CH	CHOWDAI	CHOWDAI	AGRICULT	1	1000	HP24036938336	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2413199611	14/08/2024	91303061164	14/08/2024	23/08/2024	308	1527320031	308000694
23	49	23/08/2024	NR913244	MOHAMM	2-72 ,CHO	CHOWDAI	CHOWDAI	AGRICULT	2	4000	HP24036937756	HPL - ELECTRIC	1	5-30A	1	3200	4800	59	2421199318	23/08/2024	91303061226	23/08/2024	28/08/2024	308	1527308008	308000695
24	60	9/10/2023	NR913233	KUNTA BI	29 1 ,DES/	DESAIPALI	DESAIPALI	NON-DOM	1	500	HP23053539655	HPL - ELECTRIC	1	5-30A	1	200	708	29.5	305086	29/09/2023	91304001626	9/10/2023	13/10/2023	309	1527008008	309000347
25	61	3/11/2023	NR913233	GANGARA	8-35/1 ,DE	DESAIPALI	DESAIPALI	NON-DOM	1	1000	HE23082135646	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	5611	2/11/2023	91304002193	3/11/2023	9/11/2023	309	1527350011	309000348
26	62	1/11/2023	NR913233	MYADAM	1-43 ,NAN	NANCHAR	DESAIPALI	DOMESTIC	2	1000	HE23082135612	HIMACHAL ENERGY	1	5-30A	1	800	1200	59	519382	26/10/2023	91304002125	1/11/2023	9/11/2023	309	1527019028	309000349
27	63	18/11/2023	NR913233	SINGAM S	6-166 ,DE	DESAIPALI	DESAIPALI	NON-DOM	2	1000	HE23092138061	HIMACHAL ENERGY	1	5-30A	1	800	1200	59	5667	17/11/2023	91304002551	18/11/2023	26/11/2023	309	1527008019	309000350
28	64	7/12/2023	NR913233	ANEMONI	14-09 ,DE	DESAIPALI	DESAIPALI	DOMESTIC	1	1000	HE23092138113	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	68991	20/11/2023	91304002820	7/12/2023	13/12/2023	309	1527008019	309000351
29	65	19/12/2023	NR913233	BESTHA Y	8-77 ,DES/	DESAIPALI	DESAIPALI	DOMESTIC	2	1000	HE23092138213	HIMACHAL ENERGY	1	5-30A	1	800	1200	59	5781	16/12/2023	91304003029	19/12/2023	26/12/2023	309	1527008008	309000352
30	66	19/12/2023	NR913233	BESTHA Y	8-77 ,DES/	DESAIPALI	DESAIPALI	DOMESTIC	1	500	HE23092138214	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	5783	16/12/2023	91304003031	19/12/2023	26/12/2023	309	1527008008	309000353
31	67	20/12/2023	NR913233	BESTHA N	9-76 ,DES/	DESAIPALI	DESAIPALI	DOMESTIC	1	500	HE23092138088	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	96013	20/12/2023	91304003061	20/12/2023	26/12/2023	309	1527008008	309000354
32	68	20/12/2023	NR913233	BESTHA N	9-76 ,DES/	DESAIPALI	DESAIPALI	NON-DOM	1	500	HE23092138088	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	96014	20/12/2023	91304003062	20/12/2023	26/12/2023	309	1527008008	309000355
33	69	12/1/2024	NR913243	K KESHAV	7-66 ,DES/	DESAIPALI	DESAIPALI	DOMESTIC	1	1000	HE23102150789	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305126	5/1/2024	91304003773	12/1/2024	17/01/2024	309	1527008008	309000360
34	70	19/01/2024	NR913243	DONGALA	SYNO 458	DESAIPALI	DESAIPALI	DOMESTIC	2	2000	HE23102150897	HIMACHAL ENERGY	1	5-30A	1	1600	2400	59	96062	11/1/2024	91304003901	19/01/2024	26/01/2024	309	1527008008	309000385
35	71	16/02/2024	NR913243	SMT CHEN	8-91/1 ,DE	DESAIPALI	DESAIPALI	DOMESTIC	1	1000	HE23122157923	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305149	13/02/2024	91304004610	16/02/2024	20/02/2024	309	1527008019	309000388
36	72	1/3/2024	NR913243	ANIMONI	8-76 ,DES/	DESAIPALI	DESAIPALI	DOMESTIC	1	1000	HE23122157891	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305161	26/02/2024	91304004956	1/3/2024	12/3/2024	309	1527008008	309000389
37	73	6/3/2024	NR913243	EEDGI KUI	9-97/C ,DE	DESAIPALI	DESAIPALI	DOMESTIC	1	500	HE23122158261	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	2262147780	6/3/2024	91304005053	6/3/2024	14/03/2024	309	1527008008	309000390
38	74	11/3/2024	NR913243	KUNTA PA	9-51 ,DES/	DESAIPALI	DESAIPALI	DOMESTIC	1	1000	HP24013567170	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	305166	5/3/2024	91304005095	11/3/2024	14/03/2024	309	1527008019	309000391
39	75	13/03/2024	NR913243	K SRINIVA	9-60/1 ,DE	DESAIPALI	DESAIPALI	DOMESTIC	1	500	HE23122157875	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	2269490220	13/03/2024	91304005135	13/03/2024	18/03/2024	309	1527008019	309000392
40	76	18/03/2024	NR913243	GANGARA	8-16 ,DES/	DESAIPALI	DESAIPALI	DOMESTIC	1	1000	HE23122158051	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	96121	12/3/2024	91304005192	18/03/2024	23/03/2024	309	1527008019	309000393
41	77	7/5/2024	NR913244	GANGARA	8-15 ,DES/	DESAIPALI	DESAIPALI	DOMESTIC	1	500	HP24013567650	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2321104098	7/5/2024	91304005557	7/5/2024	13/05/2024	309	1527008008	309000394
42	78	21/05/2024	NR913244	MUDAVA	2-59 ,DES/	DESAIPALI	DESAIPALI	DOMESTIC	1	500	HP24013567017	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2334171665	21/05/2024	91303060638	21/05/2024	24/05/2024	309	1527008008	309000395
43	79	21/05/2024	NR913244	ANEMONI	8-97 ,DES/	DESAIPALI	DESAIPALI	DOMESTIC	1	500	HP24013567628	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2334178498	21/05/2024	91303060638	21/05/2024	24/05/2024	309	1527008008	309000396
44	80	21/05/2024	NR913244	J KARTHIK	1-60 ,DES/	DESAIPALI	DESAIPALI	DOMESTIC	1	500	HP24013567017	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2334168826	21/05/2024	91303060638	21/05/2024	24/05/2024	309	1527008008	309000397
45	81	11/7/2024	NR913244	BESTHA B	9-78 ,DES/	DESAIPALI	DESAIPALI	AGRICULT	1	500	HP24036936909	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2378589447	11/7/2024	91303060949	11/7/2024	18/07/2024	309	1527008008	309000399

82	14/08/2024	NR913244	BALA VAR	7-84 ,DES/	DESAIPALI	DESAIPALI	AGRICULT	1	500	HP24036937740	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2413657026	14/08/2024	91303061166	14/08/2024	23/08/2024	309	1527008008	309000400
83	16/08/2024	NR913244	DONGALA	8-52 ,DES/	DESAIPALI	DESAIPALI	AGRICULT	1	500	HP24036937740	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2415404118	16/08/2024	91303061166	16/08/2024	23/08/2024	309	1527008019	309000401
84	16/08/2024	NR913244	K NARENC	3-38 ,DES/	DESAIPALI	DESAIPALI	AGRICULT	1	500	HP24036937740	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2415397011	16/08/2024	91303061166	16/08/2024	23/08/2024	309	1527008008	309000402
85	12/9/2024	NR913244	A RAMESH	7-86 ,DES/	DESAIPALI	DESAIPALI	NON-DOM	1	500	HP24036938132	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2435083213	12/9/2024	91303061314	12/9/2024	20/09/2024	309	1527008008	309000403
86	13/09/2024	NR913244	AZEEJA BE	8-37 ,DES/	DESAIPALI	DESAIPALI	NON-DOM	1	500	HP24036938514	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2435768608	13/09/2024	91303061332	13/09/2024	21/09/2024	309	1527008008	309000404
87	26/10/2024	NR913244	MD KALAI	SYNO 383	DESAIPALI	DESAIPALI	DOMESTIC	2	1000	HP24036937234	HPL - ELECTRIC	1	5-30A	1	800	1200	59	2466022500	26/10/2024	91303061514	26/10/2024	28/10/2024	309	1527008008	309000405
88	3/11/2023	NR913233	G CHINNA	7-57/1 ,G/	GADIRYAL	GADIRYAL	DOMESTIC	1	500	HE23082135646	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	5617	2/11/2023	91304002191	3/11/2023	9/11/2023	310	1527009015	310000965
89	3/11/2023	NR913233	VIJAYA LA	2-50/1-A ,	GADIRYAL	GADIRYAL	AGRICULT	1	500	HE23082135646	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	5613	2/11/2023	91304002190	3/11/2023	9/11/2023	310	1527009015	310000966
90	19/12/2023	NR913233	GUPA RAN	1-49/2 ,G/	GADIRYAL	GADIRYAL	AGRICULT	1	500	HE23092138213	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	5789	16/12/2023	91304003022	19/12/2023	26/12/2023	310	1527009015	310000967
91	19/12/2023	NR913233	NEERATI K	7-42 ,GAD	GADIRYAL	GADIRYAL	AGRICULT	1	500	HE23092138213	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	5791	16/12/2023	91304003023	19/12/2023	26/12/2023	310	1527009015	310000968
92	19/12/2023	NR913233	ARUKALI \	4-11 ,GAD	GADIRYAL	GADIRYAL	AGRICULT	1	500	HE23092138213	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	5792	16/12/2023	91304003024	19/12/2023	26/12/2023	310	1527009015	310000969
93	19/12/2023	NR913233	KATIKE AN	3-80/1 ,G/	GADIRYAL	GADIRYAL	AGRICULT	1	500	HE23092138213	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	5790	16/12/2023	91304003025	19/12/2023	26/12/2023	310	1527009020	310000970
94	19/12/2023	NR913233	VARLA SRI	1-19 ,GAD	GADIRYAL	GADIRYAL	AGRICULT	1	500	HE23092138213	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	5793	16/12/2023	91304003026	19/12/2023	26/12/2023	310	1527009045	310000971
95	19/12/2023	NR913233	PULLI ANA	1-15 ,GAD	GADIRYAL	GADIRYAL	AGRICULT	1	500	HE23092138213	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	5794	16/12/2023	91304003028	19/12/2023	26/12/2023	310	1527009015	310000972
96	9/1/2024	NR913243	SMT VENK	6-46 ,GAD	GADIRYAL	GADIRYAL	AGRICULT	1	500	HE23102150843	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	5875	8/1/2024	91304003623	9/1/2024	16/01/2024	310	1527009015	310000973
97	12/1/2024	NR913243	EERARAM	1-51 ,GAD	GADIRYAL	GADIRYAL	AGRICULT	1	500	HE23102150789	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	5874	8/1/2024	91304003774	12/1/2024	17/01/2024	310	1527092701	310000974
98	12/1/2024	NR913243	C MOGUL	2-31 ,GAD	GADIRYAL	GADIRYAL	AGRICULT	1	500	HE23102150789	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	5872	8/1/2024	91304003775	12/1/2024	17/01/2024	310	1527009015	310000975
99	2/2/2024	NR913243	SALEEM P.	3-26 ,GAD	GADIRYAL	GADIRYAL	AGRICULT	1	1000	HE23122157878	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305133	23/01/2024	91304004267	2/2/2024	8/2/2024	310	1527009015	310000985
100	26/03/2024	NR913243	VISLAVATI	4-14 ,GAD	GADIRYAL	GADIRYAL	AGRICULT	1	1000	HE23122158209	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	2281455934	26/03/2024	91304005289	26/03/2024	27/03/2024	310	1527009015	310000987
101	16/04/2024	NR913243	SEELAM V	3-29 ,GAD	GADIRYAL	GADIRYAL	AGRICULT	1	1000	HP24013567981	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	305183	10/4/2024	91304005402	16/04/2024	25/04/2024	310	1527009020	310000988
102	16/04/2024	NR913243	SONAMM	4- 6 ,GADI	GADIRYAL	GADIRYAL	AGRICULT	1	500	HP24013567981	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2302400593	16/04/2024	91304005402	16/04/2024	25/04/2024	310	1527009036	310000989
103	16/04/2024	NR913243	TANKARI I	11-7 ,GAD	GADIRYAL	GADIRYAL	AGRICULT	1	1000	HP24013567982	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2302407424	16/04/2024	91304005402	16/04/2024	25/04/2024	310	1527009015	310000990
104	21/05/2024	NR913244	Y GOPAL	7-16/1 ,G/	GADIRYAL	GADIRYAL	AGRICULT	1	500	HP24013567017	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2334161864	21/05/2024	91303060638	21/05/2024	24/05/2024	310	1527009020	310000991
109	12/7/2024	NR913244	GUMDAL/	7-35/3 ,G/	GADIRYAL	GADIRYAL	DOMESTIC	2	2000	HP24036936909	HPL - ELECTRIC	1	5-30A	1	1600	2400	59	305209	21/06/2024	91303060972	12/7/2024	18/07/2024	310	1527009020	310000996
110	11/7/2024	NR913244	MUCCHRL	6-29 ,GAD	GADIRYAL	GADIRYAL	AGRICULT	2	1000	HP24036936909	HPL - ELECTRIC	1	5-30A	1	800	1200	59	2378608879	11/7/2024	91303060949	11/7/2024	18/07/2024	310	1527009015	310000997
111	11/7/2024	NR913244	SANDRAS	3-19/1 ,G/	GADIRYAL	GADIRYAL	AGRICULT	1	500	HP24036936909	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2378624598	11/7/2024	91303060949	11/7/2024	18/07/2024	310	1527009020	310000998
112	17/08/2024	NR913244	KOTHAPAI	1-1/40 ,G/	GADIRYAL	GADIRYAL	AGRICULT	1	1000	HP24036937334	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2416238435	17/08/2024	91303061181	17/08/2024	23/08/2024	310	1527009015	310000999
131	22/10/2024	NR913244	ERAMOLL	7-49 ,GAD	GADIRYAL	GADIRYAL	AGRICULT	1	500	HP24036936992	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2463604265	22/10/2024	91303061491	22/10/2024	28/10/2024	310	1527009015	310001018
132	22/10/2024	NR913244	CHOUDAR	2-31 ,GAD	GADIRYAL	GADIRYAL	AGRICULT	1	1000	HP24036936992	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2463611316	22/10/2024	91303061491	22/10/2024	28/10/2024	310	1527009001	310001019
133	22/10/2024	NR913244	J NARSAM	6-32 ,GAD	GADIRYAL	GADIRYAL	AGRICULT	1	500	HP24036936992	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2463606880	22/10/2024	91303061491	22/10/2024	28/10/2024	310	1527009015	310001020
137	16/12/2023	NR913233	MUDAVAT	4- 5 ,JULAI	JULAPALLY	MOHAMN	DOMESTIC	1	500	HE23092138193	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	109650	15/12/2023	91304002960	16/12/2023	20/12/2023	312	1527011067	312000775
138	2/2/2024	NR913243	GOLLA KE	1-64 ,JULA	JULAPALLY	JULAPALLY	DOMESTIC	1	1000	HE23122158069	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	96074	29/01/2024	91304004268	2/2/2024	9/2/2024	312	1527011067	312000779
139	7/2/2024	NR913243	JUNTIPALI	1-90 ,JULA	JULAPALLY	JULAPALLY	DOMESTIC	1	1000	HE23122158012	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	875149	30/01/2024	91304004385	7/2/2024	12/2/2024	312	1527011067	312000780
140	7/2/2024	NR913243	KANCHIM	1-101 ,JUL	JULAPALLY	JULAPALLY	DOMESTIC	1	1000	HE23122158012	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	96075	5/2/2024	91304004386	7/2/2024	12/2/2024	312	1527011067	312000781
141	24/02/2024	NR913243	GOLLA AN	1-78 ,JULA	JULAPALLY	JULAPALLY	DOMESTIC	1	1000	HE23122158167	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	96104	12/2/2024	91304004785	24/02/2024	26/02/2024	312	1527011067	312000782
142	2/3/2024	NR913243	K GOPAMI	3-31 ,JULA	JULAPALLY	JULAPALLY	NON-DOM	1	1000	HE23122157839	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	281735	2/3/2024	91304004974	2/3/2024	12/3/2024	312	1527011082	312000783
143	7/3/2024	NR913243	GANGARA	SYNO 148,	JULAPALLY	JULAPALLY	DOMESTIC	2	2000	HE23122157952	HIMACHAL ENERGY	1	5-30A	1	1600	2400	59	2263270908	7/3/2024	91304005063	7/3/2024	14/03/2024	312	1527011067	312000784
144	27/03/2024	NR913243	KOTHA M.	3-19 ,JULA	JULAPALLY	JULAPALLY	AGRICULT	1	1000	HP24013567309	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	281737	7/3/2024	91304005304	27/03/2024	27/03/2024	312	1527011067	312000787
148	20/05/2024	NR913244	GOLLA VE	1-78 ,JULA	JULAPALLY	JULAPALLY	DOMESTIC	1	1000	HP24013567656	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2333173707	20/05/2024	91303060635	20/05/2024	24/05/2024	312	1527011067	312000791
149	20/05/2024	NR913244	KASHIPUR	2-81 ,JULA	JULAPALLY	JULAPALLY	DOMESTIC	1	1000	HP24013567656	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2333179430	20/05/2024	91303060635	20/05/2024	24/05/2024	312	1527011067	312000792
150	19/06/2024	NR913244	SMT SWAI	1-61 ,JULA	JULAPALLY	JULAPALLY	DOMESTIC	1	1000	HP23093550324	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2357412912	19/06/2024	91303060809	19/06/2024	24/06/2024	312	1527011067	312000793
151	9/7/2024	NR913244	G RAM RE	3- 2 ,JULAI	JULAPALLY	JULAPALLY	DOMESTIC	1	1000	HP24036937021	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2376206997	9/7/2024	91303060930	9/7/2024	18/07/2024	312	1527011067	312000794
152	27/07/2024	NR913244	SMT R ESV	3 / 5 ,JULA	JULAPALLY	JULAPALLY	NON-DOM	1	1000	HP24036937712	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	788377	26/07/2024	91303061049	27/07/2024	31/07/2024	312	1527011067	312000795
153	3/8/2024	NR913244	PINJARI AI	3-36 ,JULA	JULAPALLY	JULAPALLY	AGRICULT	2	1000	HP24036937896	HPL - ELECTRIC	1	5-30A	1	800	1200	59	2402759201	3/8/2024	91303061111	3/8/2024	7/8/2024	312	1527011067	312000796
173	25/10/2024	NR913244	GANGARA	4-74 ,KOLI	KOLBAI TH	JULAPALLY	NON-DOM	1	1000	HP24036938849	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	610494	22/10/2024	91303061508	25/10/2024	28/10/2024	312	1527011088	312000816

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA
174	1/11/2023	NR913233	POTHULA	8-235 , KAI	KANCHAN	KANCHAN	DOMESTIC	2	1000	HE23082135612	HIMACHAL ENERGY	1	5-30A	1	800	1200	59	109568	8/9/2023	91304002104	1/11/2023	9/11/2023	313	1527313004	313000540	
175	2/1/2024	NR913243	KURVA BA	8-263 , KAI	KANCHAN	KANCHAN	DOMESTIC	1	500	HE23102151198	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	96053	27/12/2023	91304003325	2/1/2024	6/1/2024	313	1527012015	313000541	
176	2/1/2024	NR913243	ANEM AN	8-74 , KAN	KANCHAN	KANCHAN	DOMESTIC	1	500	HE23102151210	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	96052	27/12/2023	91304003327	2/1/2024	6/1/2024	313	1527012012	313000542	
177	2/2/2024	NR913243	A VENKAT	8-19 , KAN	KANCHAN	KANCHAN	DOMESTIC	1	500	HE23122158069	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	96050	27/12/2023	91304004269	2/2/2024	8/2/2024	313	1527012015	313000543	
178	7/3/2024	NR913243	GOLLA CH	8-39 , KAN	KANCHAN	KANCHAN	NON-DOM	1	500	HE23122157871	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	96115	7/3/2024	91304005067	7/3/2024	15/03/2024	313	1527012015	313000544	
179	25/05/2024	NR913244	SHAIK HAI	SYNO 427,	KANCHAN	KANCHAN	DOMESTIC	2	2000	HP23093550584	HPL - ELECTRIC	1	5-30A	1	1600	2400	59	2337187629	25/05/2024	91303060659	25/05/2024	29/05/2024	313	1527012002	313000545	
180	7/6/2024	NR913244	BOLLAVAI	8-97/2 , KA	KANCHAN	KANCHAN	NON-DOM	1	1000	HP23093550397	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	96156	30/05/2024	91303060753	7/6/2024	14/06/2024	313	1527024012	313000546	
181	22/06/2024	NR913244	GANGULA	SYNO 476,	KANCHAN	KANCHAN	DOMESTIC	2	1000	HP23093550467	HPL - ELECTRIC	1	5-30A	1	800	1200	59	2359870778	22/06/2024	91303060833	22/06/2024	24/06/2024	313	1527024012	313000547	
182	22/06/2024	NR913244	B NARAYA	8-97/2 , KA	KANCHAN	KANCHAN	AGRICULT	1	1000	HP23093550467	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	96168	18/06/2024	91303060833	22/06/2024	24/06/2024	313	1527024012	313000548	
184	13/09/2023	NR913233	C PADMAI	3-90/2 , M	MOHAMN	MOHAMN	DOMESTIC	1	1000	HP23053539783	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	109571	8/9/2023	91304000982	13/09/2023	23/09/2023	317	1527007006	317003248	
185	13/09/2023	NR913233	C PADMAI	3-90/2 , M	MOHAMN	MOHAMN	DOMESTIC	1	1000	HP23053539783	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	109564	8/9/2023	91304000980	13/09/2023	23/09/2023	317	1527007006	317003249	
186	13/09/2023	NR913233	C PADMAI	3-90/2 , M	MOHAMN	MOHAMN	DOMESTIC	1	1000	HP23053539783	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	109563	8/9/2023	91304000975	13/09/2023	23/09/2023	317	1527007011	317003250	
187	13/09/2023	NR913233	C PADMAI	3-90/2 , M	MOHAMN	MOHAMN	NON-DOM	1	1000	HP23053539783	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	109562	8/9/2023	91304000979	13/09/2023	23/09/2023	317	1527007011	317003251	
188	13/09/2023	NR913233	KATRAVA	5-170/5 , N	MOHAMN	MOHAMN	DOMESTIC	2	1000	HP23053539760	HPL - ELECTRIC	1	5-30A	1	800	1416	59	109574	12/9/2023	91304000985	13/09/2023	23/09/2023	317	1527007006	317003252	
189	13/09/2023	NR913233	APPAGALL	7-181/1 , N	MOHAMN	MOHAMN	DOMESTIC	1	500	HP23053539783	HPL - ELECTRIC	1	5-30A	1	200	708	29.5	5182	13/09/2023	91304000983	13/09/2023	23/09/2023	317	1527007011	317003253	
190	13/09/2023	NR913233	VADLA YA	2-245 , MC	MOHAMN	MOHAMN	NON-DOM	1	1000	HP23053539783	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	5180	13/09/2023	91304000984	13/09/2023	23/09/2023	317	1527007011	317003254	
191	15/09/2023	NR913233	P CHENNA	3-64/1 , KA	KANCHAN	KANCHAN	DOMESTIC	2	1000	HP23053539903	HPL - ELECTRIC	1	5-30A	1	800	1416	59	5197	14/09/2023	91304001036	15/09/2023	23/09/2023	317	1527007026	317003255	
192	16/09/2023	NR913233	MEDIPALL	1-24/2 , M	MOHAMN	MOHAMN	DOMESTIC	1	1000	HP23053539214	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	5190	14/09/2023	91304001096	16/09/2023	23/09/2023	317	1527007011	317003256	
193	16/09/2023	NR913233	P SATHYA	3-231 , MC	MOHAMN	MOHAMN	DOMESTIC	1	1000	HP23053539214	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	5193	14/09/2023	91304001094	16/09/2023	23/09/2023	317	1527007026	317003257	
194	16/09/2023	NR913233	P SATHYA	3-231 , MC	MOHAMN	MOHAMN	DOMESTIC	1	1000	HP23053539214	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	5191	14/09/2023	91304001095	16/09/2023	23/09/2023	317	1527007026	317003258	
195	16/09/2023	NR913233	P SATHYA	3-231 , MC	MOHAMN	MOHAMN	DOMESTIC	1	1000	HP23053539214	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	5192	14/09/2023	91304001093	16/09/2023	23/09/2023	317	1527007026	317003259	
196	22/09/2023	NR913233	G SURESH	3-244/1 , N	MOHAMN	MOHAMN	DOMESTIC	1	1000	HP23053539179	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	5247	19/09/2023	91304001202	22/09/2023	30/09/2023	317	1527007006	317003260	
197	25/09/2023	NR913233	FOUZIA BI	4-6/6 , MO	MOHAMN	MOHAMN	DOMESTIC	1	500	HP23053539554	HPL - ELECTRIC	1	5-30A	1	200	708	29.5	5313	25/09/2023	91304001298	25/09/2023	30/09/2023	317	1527007027	317003261	
198	19/09/2023	NR913233	CHINTHA	2-220 , MC	MOHAMN	MOHAMN	DOMESTIC	1	1000	HP23053539031	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	5249	19/09/2023	91304001112	19/09/2023	29/09/2023	317	1527007011	317003262	
199	10/10/2023	NR913233	VENKAT R	2-276 , MC	MOHAMN	MOHAMN	DOMESTIC	1	1000	HP23053539598	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	109585	7/10/2023	91304001665	#########	20/10/2023	317	1527007011	317003263	
200	10/10/2023	NR913233	B SRILATH	1-158/1 , K	KANCHAN	MOHAMN	DOMESTIC	1	500	HP23053539598	HPL - ELECTRIC	1	5-30A	1	200	708	29.5	109586	7/10/2023	91304001666	#########	20/10/2023	317	1527007011	317003264	
201	11/10/2023	NR913233	BESTHA L	8-194 , KAI	KANCHAN	KANCHAN	DOMESTIC	1	1000	HP23053539922	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	5444	#########	91304001695	#########	20/10/2023	317	1527007026	317003265	
202	11/10/2023	NR913233	BESTHA L	8-194 , KAI	KANCHAN	KANCHAN	DOMESTIC	1	1000	HP23053539922	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	5445	#########	91304001696	#########	20/10/2023	317	1527007026	317003266	
203	11/10/2023	NR913233	A JEMINI I	5-168 , MC	MOHAMN	MOHAMN	NON-DOM	1	1000	HP23053539922	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	5446	#########	91304001697	#########	20/10/2023	317	1527016006	317003267	
204	4/11/2023	NR913233	B SARITH	2-115/2 , N	MOHAMN	MOHAMN	NON-DOM	2	1000	HE23082135473	HIMACHAL ENERGY	1	5-30A	1	800	1200	59	154291	30/10/2023	91304002255	4/11/2023	9/11/2023	317	1527016017	317003272	
205	4/11/2023	NR913233	B SARITH	2-115/2 , N	MOHAMN	MOHAMN	DOMESTIC	2	1000	HE23082135473	HIMACHAL ENERGY	1	5-30A	1	800	1200	59	154290	30/10/2023	91304002253	4/11/2023	9/11/2023	317	1527007011	317003273	
206	4/11/2023	NR913233	A MAHALA	7-110/3 , N	MOHAMN	MOHAMN	DOMESTIC	1	1000	HE23082135473	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	281667	17/10/2023	91304002257	4/11/2023	9/11/2023	317	1527007026	317003274	
207	4/11/2023	NR913233	A MAHALA	7-110/3 , N	MOHAMN	MOHAMN	NON-DOM	1	1000	HE23082135473	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	281668	17/10/2023	91304002259	4/11/2023	9/11/2023	317	1527007006	317003275	
208	4/11/2023	NR913233	V BOJYA N	3-256/2 , N	MOHAMN	MOHAMN	NON-DOM	2	1000	HE23082135693	HIMACHAL ENERGY	1	5-30A	1	800	1200	59	154289	30/10/2023	91304002251	4/11/2023	9/11/2023	317	1527016012	317003276	
209	14/11/2023	NR913233	KOMIRED	1-47 , MOI	MOHAMN	MOHAMN	NON-DOM	2	1000	HE23082135466	HIMACHAL ENERGY	1	5-30A	1	800	1200	59	109617	14/11/2023	91304002429	14/11/2023	23/11/2023	317	1527007011	317003277	
210	22/11/2023	NR913233	BOKKA ER	2-254 , MC	MOHAMN	MOHAMN	NON-DOM	2	1000	HE23092138090	HIMACHAL ENERGY	1	5-30A	1	800	1200	59	109615	#########	91304002625	22/11/2023	26/11/2023	317	1527016015	317003278	
211	7/2/2024	NR913243	BEEJAN BI	7-104 , MC	MOHAMN	MOHAMN	NON-DOM	2	1000	HE23122158214	HIMACHAL ENERGY	1	5-30A	1	800	1200	59	5910	6/2/2024	91304004416	7/2/2024	12/2/2024	317	1527016013	317003281	
212	7/2/2024	NR913243	D YADHOJ	3-224 , MC	MOHAMN	MOHAMN	NON-DOM	2	1000	HE23122158214	HIMACHAL ENERGY	1	5-30A	1	800	1200	59	5911	6/2/2024	91304004415	7/2/2024	12/2/2024	317	1527016007	317003282	
213	7/2/2024	NR913243	ABDUL QA	5-153 , MC	MOHAMN	MOHAMN	DOMESTIC	2	1000	HE23122158215	HIMACHAL ENERGY	1	5-30A	1	800	1200	59	5909	6/2/2024	91304004417	7/2/2024	12/2/2024	317	1527007026	317003283	
214	8/2/2024	NR913243	NARSIMU	PLOTNO1	MOHAMN	MOHAMN	DOMESTIC	1	1000	HE23122158092	HIMACHAL ENERGY	1	5-30A	1	600	1200	29.5	96090	7/2/2024	91304004453	8/2/2024	12/2/2024	317	1527016015	317003284	
215	13/02/2024	NR913243	D LAXMI I	6-77 , MO	MOHAMN	MOHAMN	NON-DOM	1	1000	HE23122158227	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	96099	8/2/2024	91304004525	13/02/2024	20/02/2024	317	1527016041	317003285	
216	19/02/2024	NR913243	J ARAVINI	2-114/2 , N	MOHAMN	MOHAMN	NON-DOM	2	1000	HE23122158156	HIMACHAL ENERGY	1	5-30A	1	800	1200	59	96108	14/02/2024	91304004665	19/02/2024	23/02/2024	317	1527016015	317003286	
217	19/02/2024	NR913243	J ARAVINI	2-114/2 , N	MOHAMN	MOHAMN	AGRICULT	2	1000	HE23122158156	HIMACHAL ENERGY	1	5-30A	1	800	1200	59	96107	14/02/2024	91304004666	19/02/2024	23/02/2024	317	1527016015	317003287	
224	26/02/2024	NR913243	M HARI PI	7-138 , MC	MOHAMN	MOHAMN	DOMESTIC	1	500	HE23122157803	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	2252643623	26/02/2024	91304004819	26/02/2024	27/02/2024	317	1527016016	317003294	
225	7/3/2024	NR913243	GUTTI CH	3-203 , MC	MOHAMN	MOHAMN	NON-DOM	1	1000	HE23122157870	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	96110	14/02/2024	91304005064	7/3/2024	16/03/2024	317	1527016014	317003295	

225	7/3/2024	NR913243	GUTTI CH	3-203 ,MC	MOHAMN	MOHAMN	NON-DOM	1	1000	HE23122157870	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	96110	14/02/2024	91304005064	7/3/2024	16/03/2024	317	1527016014	317003295
226	7/3/2024	NR913243	G KESHAV	2-57 ,MOI	MOHAMN	MOHAMN	DOMESTIC	2	1000	HE23122157870	HIMACHAL ENERGY	1	5-30A	1	800	1200	59	96109	14/02/2024	91304005065	7/3/2024	14/03/2024	317	1527016006	317003296
227	18/03/2024	NR913243	J BHEEML	2-114/2 ,N	MOHAMN	MOHAMN	NON-DOM	1	1000	HE23122158051	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	96119	12/3/2024	91304005194	18/03/2024	23/03/2024	317	1527016636	317003298
228	18/03/2024	NR913243	J BHEEML	2-114/2 ,N	MOHAMN	MOHAMN	DOMESTIC	2	1000	HE23122158051	HIMACHAL ENERGY	1	5-30A	1	800	1200	59	96118	12/3/2024	91304005195	18/03/2024	23/03/2024	317	1527016636	317003299
229	18/03/2024	NR913243	PASUPULA	2-164 ,MC	MOHAMN	MOHAMN	NON-DOM	1	1000	HE23122158052	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	96120	12/3/2024	91304005193	18/03/2024	23/03/2024	317	1527016041	317003300
230	2/4/2024	NR913243	S SEETHA	5-166 ,MC	MOHAMN	MOHAMN	DOMESTIC	2	1000	HP24013567990	HPL - ELECTRIC	1	5-30A	1	800	1200	59	96123	2/4/2024	91304005351	2/4/2024	16/04/2024	317	1527016041	317003302
231	8/4/2024	NR913243	KAVALI N/	2-124 ,MC	MOHAMN	MOHAMN	DOMESTIC	1	1000	HP24013567003	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	96124	8/4/2024	91304005391	8/4/2024	15/04/2024	317	1527016006	317003303
232	16/04/2024	NR913243	SMT BUJJI	PLOTNO8	SYNO397	MOHAMN	AGRICULT	1	1000	HP24013567228	HPL - ELECTRIC	1	5-30A	1	600	1200	29.5	96126	16/04/2024	91304005408	16/04/2024	25/04/2024	317	1527016015	317003304
236	9/5/2024	NR913244	B LAXMI	8-194 ,KAI	KANCHAN	MOHAMN	NON-DOM	1	1000	HP24013567453	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2322789116	9/5/2024	91304005566	9/5/2024	17/05/2024	317	1527016062	317003308
237	9/5/2024	NR913244	B LAXMI	8-194 ,KAI	KANCHAN	MOHAMN	DOMESTIC	2	1000	HP24013567452	HPL - ELECTRIC	1	5-30A	1	800	1200	59	2322794906	9/5/2024	91304005566	9/5/2024	17/05/2024	317	1527016062	317003309
238	9/5/2024	NR913244	SERI RAM	1-26 ,MOI	MOHAMN	MOHAMN	DOMESTIC	1	1000	HP24013567452	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2322781601	9/5/2024	91304005566	9/5/2024	17/05/2024	317	1527016015	317003310
239	10/5/2024	NR913244	KOUDI BE	7-137 ,MC	MOHAMN	MOHAMN	AGRICULT	1	1000	HP24013567082	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2323828409	10/5/2024	91304005578	10/5/2024	17/05/2024	317	1527016021	317003311
247	21/06/2024	NR913244	M HARISH	1-23 ,MOI	MOHAMN	MOHAMN	DOMESTIC	1	1000	HP23093550736	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2359048134	21/06/2024	91303060815	21/06/2024	26/06/2024	317	1527016006	317003321
248	25/06/2024	NR913244	KOUDI BE	7-137 ,MC	MOHAMN	MOHAMN	NON-DOM	1	1000	HP24036936965	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2362574662	25/06/2024	91303060853	25/06/2024	28/06/2024	317	1527016016	317003323
249	4/7/2024	NR913244	PITLA CHE	3-99/1 ,M	MOHAMN	MOHAMN	DOMESTIC	2	1000	HP24036937440	HPL - ELECTRIC	1	5-30A	1	800	1200	59	2370806607	4/7/2024	91303060905	4/7/2024	12/7/2024	317	1527016006	317003324
250	16/07/2024	NR913244	P PADMAI	3-100 ,MC	MOHAMN	MOHAMN	AGRICULT	1	1000	HP24036937651	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	96167	18/06/2024	91303060986	16/07/2024	24/07/2024	317	1527016007	317003325
260	6/8/2024	NR913244	A SRINIVA	3-238 ,MC	MOHAMN	MOHAMN	DOMESTIC	1	1000	HP24036937735	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2405470965	6/8/2024	91303061125	6/8/2024	13/08/2024	317	1527016021	317003337
261	14/08/2024	NR913244	BOKKA VE	3-60 ,MOI	MOHAMN	MOHAMN	DOMESTIC	1	1000	HP24036938336	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2413216652	14/08/2024	91303061164	14/08/2024	23/08/2024	317	1527016041	317003338
262	24/08/2024	NR913244	KOMREDI	1-47 ,MOI	MOHAMN	MOHAMN	AGRICULT	1	1000	HP24036937758	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2421900454	24/08/2024	91303061232	24/08/2024	29/08/2024	317	1527016015	317003339
268	4/9/2024	NR913244	G BHARA	2-83 ,MOI	MOHAMN	MOHAMN	DOMESTIC	2	1000	HP24036937955	HPL - ELECTRIC	1	5-30A	1	800	1200	59	2429235816	4/9/2024	91303061273	4/9/2024	9/9/2024	317	1527016009	317003345
269	4/9/2024	NR913244	B RADHIK	6-53/1 ,M	MOHAMN	MOHAMN	NON-DOM	1	1000	HP24036937955	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2429239402	4/9/2024	91303061273	4/9/2024	9/9/2024	317	1527016009	317003346
270	9/9/2024	NR913244	VINOD KU	NEW HOU	MOHAMN	MOHAMN	GENERAL	2	1000	HP24036938277	HPL - ELECTRIC	1	5-30A	1	800	1200	59	2432718707	9/9/2024	91303061298	9/9/2024	19/09/2024	317	1527016062	317003347
288	18/10/2023	NR913233	KATIKA YA	3-1/1 ,MU	MUKARLA	MUKARLA	NON-DOM	2	1000	HE23082135452	HIMACHAL ENERGY	1	5-30A	1	800	1416	59	109569	8/9/2023	91304001828	18/10/2023	26/10/2023	319	1527016045	319000619
289	18/11/2023	NR913233	POTHINEI	1-3-4/5/1	MOKARLA	MOKARLA	DOMESTIC	2	4000	HE23092138085	HIMACHAL ENERGY	1	5-30A	1	3200	4800	59	5669	17/11/2023	91304002559	18/11/2023	26/11/2023	319	1527018034	319000620
290	18/11/2023	NR913233	KAVALINT	1-2/74 ,M	MUKARLA	MUKARLA	DOMESTIC	1	1000	HE23092138085	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	5662	17/11/2023	91304002561	18/11/2023	26/11/2023	319	1527018035	319000621
291	2/1/2024	NR913243	G SUNITH	1-3/64 ,M	MUKARLA	MUKARLA	DOMESTIC	1	1000	HE23102151210	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305116	27/12/2023	91304003330	2/1/2024	6/1/2024	319	1527018034	319000622
292	19/02/2024	NR913243	KAVELINT	1-54/2 ,M	MOKARLA	MOKARLA	DOMESTIC	1	1000	HE23122158073	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	96106	14/02/2024	91304004654	19/02/2024	23/02/2024	319	1527018034	319000623
293	19/02/2024	NR913243	KAVELINT	1-52/2 ,M	MOKARLA	MOKARLA	DOMESTIC	1	1000	HE23122158072	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305151	15/02/2024	91304004655	19/02/2024	23/02/2024	319	1527018034	319000624
294	27/07/2024	NR913244	SMT LAXM	1-10 ,MOI	MOKARLA	MOKARLA	AGRICULT	1	500	HP24036937711	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2396940769	27/07/2024	91303061052	27/07/2024	2/8/2024	319	1527018016	319000625
302	23/09/2023	NR913233	VADLA AC	1-28 ,NAN	NANCHAR	NANCHAR	DOMESTIC	4	3	HP23053539374	HPL - ELECTRIC	1	5-30A	1	1500	3186	59	674120	21/09/2023	91304001259	23/09/2023	4/10/2023	320	1527019002	320001693
303	15/09/2023	NR913233	BANTU LA	6-53 ,NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HP23053539903	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	305044	4/8/2023	91304001040	15/09/2023	23/09/2023	320	1527019002	320001684
304	15/09/2023	NR913233	GANGARA	1-100 ,NA	NANCHAR	NANCHAR	DOMESTIC	1	1000	HP23053539903	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	305072	4/9/2023	91304001039	15/09/2023	23/09/2023	320	1527019002	320001685
305	23/09/2023	NR913233	JAMALPUI	8-58/1 ,N/	NANCHAR	NANCHAR	DOMESTIC	1	1000	HP23053539554	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	305078	20/09/2023	91304001262	23/09/2023	30/09/2023	320	1527019005	320001686
306	23/09/2023	NR913233	KURVA RA	3-42 ,NAN	NANCHAR	NANCHAR	INDUSTRI	1	1000	HP23053539374	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	305079	21/09/2023	91304001261	23/09/2023	30/09/2023	320	1527019005	320001687
308	4/10/2023	NR913233	BOINI SRI	1-73 ,NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HE23062115224	HIMACHAL ENERGY	1	5-30A	1	200	1416	29.5	305080	25/09/2023	91304001476	4/10/2023	13/10/2023	320	1527019002	320001696
309	4/10/2023	NR913233	MASUD AI	7- 6 ,NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HE23062114821	HIMACHAL ENERGY	1	5-30A	1	200	1416	29.5	305081	26/09/2023	91304001477	4/10/2023	13/10/2023	320	1527019002	320001697
310	18/10/2023	NR913233	SEVAKU N	4-26 ,NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HE23082135591	HIMACHAL ENERGY	1	5-30A	1	200	1416	29.5	305094	#########	91304001845	18/10/2023	26/10/2023	320	1527019002	320001700
311	18/10/2023	NR913233	MOHAMN	3- 1 ,NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HE23082135591	HIMACHAL ENERGY	1	5-30A	1	200	1416	29.5	305087	4/10/2023	91304001831	18/10/2023	26/10/2023	320	1527018037	320001701
312	1/11/2023	NR913233	KUMMAR	7-59 ,NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HE23082135579	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305096	19/10/2023	91304002129	1/11/2023	9/11/2023	320	1527019002	320001712
313	6/11/2023	NR913233	LINGANAI	4-36 ,NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HE23082135473	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305102	31/10/2023	91303060365	6/11/2023	9/11/2023	320	1527019002	320001714
314	22/11/2023	NR913233	BOINI BU	8-45 ,NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HE23092138090	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305103	17/11/2023	91304002621	22/11/2023	26/11/2023	320	1527019032	320001715
315	22/11/2023	NR913233	BOINI BU	8-45 ,NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HE23092138090	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305104	17/11/2023	91304002623	22/11/2023	26/11/2023	320	1527019028	320001716
316	17/11/2023	NR913233	J BAPUJEE	6- 2 ,NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HE23092138181	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305097	24/10/2023	91304002529	17/11/2023	26/11/2023	320	1527019029	320001717
317	16/12/2023	NR913233	S VINOD K	1-47 ,NAN	NANCHAR	NANCHAR	DOMESTIC	1	2000	HE23092138193	HIMACHAL ENERGY	1	5-30A	1	400	2400	29.5	109635	15/12/2023	91304002949	16/12/2023	20/12/2023	320	1527019028	320001722
318	16/12/2023	NR913233	S VINOD K	1-47 ,NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HE23092138193	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	109641	15/12/2023	91304002950	16/12/2023	20/12/2023	320	1527019028	320001723

180	319	4/1/2024	NR913243	SRI BURAI	2-96 , NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HE23102150902	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	519613	4/1/2024	91304003443	4/1/2024	6/1/2024	320	1527019005	320001727
181	320	5/1/2024	NR913243	P SUNITH/	3-89 , NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HE23102150830	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305122	3/1/2024	91304003455	5/1/2024	6/1/2024	320	1527019028	320001728
182	321	5/1/2024	NR913243	B ANJILAI/	3-61 , NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HE23102150798	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305110	19/12/2023	91304003457	5/1/2024	6/1/2024	320	1527019167	320001729
183	322	5/1/2024	NR913243	KUMMAR	6-47 , NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HE23102150798	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305120	30/12/2023	91304003458	5/1/2024	6/1/2024	320	1527019055	320001730
184	323	22/01/2024	NR913243	SANDARA	4-63 , NAN	NANCHAR	NANCHAR	NON-DOM	1	1000	HE23102151168	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305131	18/01/2024	91304003993	22/01/2024	26/01/2024	320	1527019029	320001734
185	324	7/2/2024	NR913243	PULLARI V	4-49 , NAN	NANCHAR	NANCHAR	DOMESTIC	2	1000	HE23122158012	HIMACHAL ENERGY	1	5-30A	1	800	1200	59	2227199648	7/2/2024	91304004393	7/2/2024	12/2/2024	320	1527019005	320001735
186	325	15/02/2024	NR913243	KURVA MI	1-94 , NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HE23122158097	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305148	12/2/2024	91304004592	15/02/2024	20/02/2024	320	1527019005	320001736
187	326	15/02/2024	NR913243	JAMALPUI	5-95/2 , N/	NANCHAR	NANCHAR	DOMESTIC	1	1000	HE23122158097	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305147	9/2/2024	91304004593	15/02/2024	20/02/2024	320	1527019002	320001737
188	327	24/02/2024	NR913243	EDIGI RAJ	7-35 , NAN	NANCHAR	NANCHAR	AGRICULT	1	1000	HE23122158167	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	281718	19/02/2024	91304004784	24/02/2024	26/02/2024	320	1527019002	320001738
189	332	1/3/2024	NR913243	KUMMAR	9- 1 , NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HE23122158266	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305162	26/02/2024	91304004955	1/3/2024	12/3/2024	320	1527019005	320001743
190	333	2/3/2024	NR913243	GADDAM	4-40 , NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HE23122157839	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305165	2/3/2024	91304004976	2/3/2024	12/3/2024	320	1527019005	320001744
191	334	11/3/2024	NR913243	MOLLA BE	2-82 , NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HP24013567170	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	305141	5/2/2024	91304005093	11/3/2024	14/03/2024	320	1527019005	320001746
192	335	15/03/2024	NR913243	S YADAIAI	1-88 , NAN	NANCHAR	MOHAMM	DOMESTIC	1	1000	HE23122158102	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	281739	14/03/2024	91304005162	15/03/2024	18/03/2024	320	1527019002	320001749
193	336	19/03/2024	NR913243	KURVA KI	1-23 , NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HE23122158073	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305172	19/03/2024	91304005212	19/03/2024	23/03/2024	320	1527019002	320001750
194	337	19/03/2024	NR913243	G ESWARA	7- 3 , NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HE23122158073	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305171	18/03/2024	91304005213	19/03/2024	23/03/2024	320	1527019002	320001751
195	338	3/4/2024	NR913243	BANTU VE	7-62 , NAN	NANCHAR	NANCHAR	NON-DOM	1	1000	HP24013567980	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2289403359	3/4/2024	91304005364	3/4/2024	15/04/2024	320	1527019030	320001753
196	339	6/4/2024	NR913243	MUNNUR	6-93 , NAN	NANCHAR	NANCHAR	DOMESTIC	2	1000	HP24013567837	HPL - ELECTRIC	1	5-30A	1	800	1200	59	305181	4/4/2024	91304005379	6/4/2024	15/04/2024	320	1527019029	320001754
197	340	6/4/2024	NR913243	KAVERI SR	3-34/1 , N/	NANCHAR	NANCHAR	DOMESTIC	1	1000	HP24013567837	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	305182	4/4/2024	91304005381	6/4/2024	15/04/2024	320	1527019030	320001755
198	341	8/4/2024	NR913243	G GANESH	8-16/1 , N/	NANCHAR	DESAIPALI	NON-DOM	1	1000	HP24013567003	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	96125	8/4/2024	91304005390	8/4/2024	15/04/2024	320	1527019030	320001756
199	342	8/4/2024	NR913243	BURAN P	2-96 , NAN	NANCHAR	NANCHAR	DOMESTIC	2	3000	HP24013567003	HPL - ELECTRIC	1	5-30A	1	2400	3600	59	2293753402	8/4/2024	91304005387	8/4/2024	15/04/2024	320	1527019030	320001757
200	343	19/04/2024	NR913243	MUNNUR	7-56 , NAN	NANCHAR	NANCHAR	AGRICULT	1	1000	HP24013567631	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	305184	15/04/2024	91304005430	19/04/2024	25/04/2024	320	1527019002	320001758
201	345	1/5/2024	NR913244	VENKA TA	8-82 , NAN	NANCHAR	NANCHAR	DOMESTIC	2	1000	HP24013567553	HPL - ELECTRIC	1	5-30A	1	800	1200	59	305185	18/04/2024	91304005485	1/5/2024	10/5/2024	320	1527019005	320001760
202	346	1/5/2024	NR913244	B VENKAT	2-51/3 , N/	NANCHAR	NANCHAR	DOMESTIC	1	1000	HP24013567553	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	305189	29/04/2024	91304005487	1/5/2024	14/05/2024	320	1527019005	320001761
203	347	1/5/2024	NR913244	DUBAI SAI	3-29 , NAN	NANCHAR	NANCHAR	AGRICULT	1	1000	HP24013567553	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	305190	29/04/2024	91304005486	1/5/2024	14/05/2024	320	1527019005	320001762
204	349	20/05/2024	NR913244	NEELI SRII	2-80 , NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HP24013567006	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	796768	20/05/2024	91303060633	20/05/2024	24/05/2024	320	1527019032	320001764
205	350	25/05/2024	NR913244	LINGANAI	4-36 , NAN	NANCHAR	NANCHAR	AGRICULT	1	1000	HP23093550584	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	305194	23/05/2024	91303060658	25/05/2024	29/05/2024	320	1527019030	320001765
206	358	13/06/2024	NR913244	PATHIMA	7-83 , NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HP23093549867	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	305200	12/6/2024	91303060775	13/06/2024	17/06/2024	320	1527019030	320001773
207	359	25/06/2024	NR913244	BYAGARI	5-79 , NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HP24036936965	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	305203	20/06/2024	91303060850	25/06/2024	28/06/2024	320	1527019030	320001775
208	360	27/07/2024	NR913244	VADDE VE	5- 7 , NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HP24036937711	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	305228	25/07/2024	91303061048	27/07/2024	31/07/2024	320	1527019190	320001777
209	361	5/8/2024	NR913244	BYAGARI	16-89/26 , N	NANCHAR	NANCHAR	DOMESTIC	1	1000	HP24036937941	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	305237	3/8/2024	91303061118	5/8/2024	13/08/2024	320	1527019002	320001778
210	362	17/08/2024	NR913244	DOMMAR	8-20 , NAN	NANCHAR	NANCHAR	AGRICULT	1	500	HP24036937334	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2416247806	17/08/2024	91303061183	17/08/2024	23/08/2024	320	1527019005	320001779
211	372	21/09/2024	NR913244	VADDE YA	3-31 , NAN	NANCHAR	NANCHAR	AGRICULT	1	500	HP24036938666	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2441518268	21/09/2024	91303061363	21/09/2024	25/09/2024	320	1527019028	320001801
212	377	21/10/2024	NR913244	PULLARI E	2-27 , NAN	NANCHAR	NANCHAR	AGRICULT	1	1000	HP24036937300	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	305254	25/09/2024	91303061481	21/10/2024	28/10/2024	320	1527019002	320001806
213	400	15/02/2024	NR913243	MOHAMM	2- 1 , SHAI	SHAIKPALI	SHAIKPALI	DOMESTIC	1	500	HE23122158212	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	96111	14/02/2024	91304004589	15/02/2024	20/02/2024	328	1527026006	328000527
214	401	20/02/2024	NR913243	SRI RATHI	2-83/2 , SH	SHAIKPALI	SHAIKPALI	AGRICULT	1	1000	HE23122158038	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	96112	19/02/2024	91304004713	20/02/2024	23/02/2024	328	1527026006	328000528
215	403	12/7/2024	NR913244	MD MOOS	1-99 , SHAI	SHAIKPALI	SHAIKPALI	DOMESTIC	1	500	HP24036937335	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2379743762	12/7/2024	91303060977	12/7/2024	20/07/2024	328	1527026006	328000530
216	404	22/09/2023	NR913233	V BALAIAI	1-48/3 , M.	MANGAM	MANGAM	DOMESTIC	1	1000	HP23053539179	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	5248	19/09/2023	91304001206	22/09/2023	30/09/2023	330	1527330003	330000381
217	405	2/11/2023	NR913233	NALLOLLA	1-79/1 , M.	MANGAM	MANGAM	DOMESTIC	1	1000	HE23082135613	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	5609	2/11/2023	91304002173	2/11/2023	9/11/2023	330	1527028005	330000395
218	406	4/3/2024	NR913243	GUDE MA	1-21/1 , M.	MANGAM	MANGAM	DOMESTIC	1	1000	HE23122158028	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	281725	26/02/2024	91304005000	4/3/2024	12/3/2024	330	1527028005	330000396
219	407	9/7/2024	NR913244	K NARSIM	1-68/1 , M.	MANGAM	MANGAM	DOMESTIC	1	1000	HP24036937021	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2376213760	9/7/2024	91303060930	9/7/2024	18/07/2024	330	1527028006	330000397
220	408	23/07/2024	NR913244	M PADMA	1-70/1 , M.	MANGAM	MANGAM	DOMESTIC	1	1000	HP24036937977	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	281831	10/7/2024	91303061023	23/07/2024	30/07/2024	330	1527028005	330000398
221	409	1/8/2024	NR913244	SMT GOUI	1-79/2 , M.	MANGAM	MANGAM	DOMESTIC	1	1000	HP24036937744	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	281838	25/07/2024	91303061081	1/8/2024	7/8/2024	330	1527028006	330000399
222	410	23/08/2024	NR913244	EDIGI SUC	1-155 , MA	MANGAM	MANGAM	DOMESTIC	1	1000	HP24036937756	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	789442	23/08/2024	91303061228	23/08/2024	28/08/2024	330	1527028006	330000400
223	411	22/08/2024	NR913244	ANNASAR	1-10/1 , M.	MANGAM	MANGAM	AGRICULT	1	1000	HP24036937807	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	281854	20/08/2024	91303061225	22/08/2024	28/08/2024	330	1527028006	330000401

25	423	17/05/2024	NR913244	G KONDAI	3-1/98 , LIT	LINGAIPAI	LINGAIPAI	DOMESTIC	1	1000	HP24013567434	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	674391	16/05/2024	91303060618	17/05/2024	25/05/2024	331	1527319100	331000219
26	424	12/7/2024	NR913244	A BUJJI BA	4-2/61 , LIT	LINGAIPAI	LINGAIPAI	AGRICULT	1	500	HP24036937335	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2379750693	12/7/2024	91303060977	12/7/2024	18/07/2024	331	1527018051	331000220
27	427	22/09/2023	NR913233	S KISHAN	2-51 , MAN	MANGAM	MANGAM	DOMESTIC	1	1000	HP23053539873	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	5246	19/09/2023	91304001201	22/09/2023	30/09/2023	332	1527028015	332000154
28	428	1/11/2023	NR913233	S SANKRIY	2-18 , MAN	MANGAM	MANGAM	DOMESTIC	1	1000	HE23082135612	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	7782	30/10/2023	91304002109	1/11/2023	9/11/2023	332	1527028005	332000155
29	429	9/1/2024	NR913243	SABAVATI	2-16 , MAN	MANGAM	MANGAM	DOMESTIC	1	500	HE23102150915	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	5871	8/1/2024	91304003626	9/1/2024	16/01/2024	332	1527028015	332000156
30	430	7/2/2024	NR913243	S NARYA	2-20 , MAN	MANGAM	MOHAMN	DOMESTIC	1	500	HE23122158214	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	674273	6/2/2024	91304004419	7/2/2024	12/2/2024	332	1527028015	332000157
31	431	7/2/2024	NR913243	K LINGYA	1-16 , MAN	MANGAM	MANGAM	DOMESTIC	1	500	HE23122158214	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	674274	6/2/2024	91304004418	7/2/2024	12/2/2024	332	1527028015	332000158
32	432	17/02/2024	NR913243	KATRAVA	2-78/1 , M	MANGAM	MANGAM	DOMESTIC	1	1000	HE23122158085	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	674285	16/02/2024	91304004630	17/02/2024	20/02/2024	332	1527028016	332000159
33	433	1/11/2023	NR913233	PASUPULA	8-20 , DHA	DHARMAI	DHARMAI	DOMESTIC	1	500	HE23082135579	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	519374	26/10/2023	91304002126	1/11/2023	9/11/2023	337	1527030008	337000130
34	434	1/11/2023	NR913233	PASUPULA	8-25 , DHA	DHARMAI	DHARMAI	DOMESTIC	1	500	HE23082135579	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	519375	26/10/2023	91304002127	1/11/2023	9/11/2023	337	1527030005	337000131
35	442	7/3/2024	NR913243	NALLAMO	7-30 , DHA	DHARMAI	DHARMAI	AGRICULT	1	500	HE23122157870	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	96114	7/3/2024	91304005066	7/3/2024	15/03/2024	337	1527030008	337000139
36	447	22/09/2023	NR913233	CHENCHU	3-54 , KOL	KOLIMPAI	VENKATRI	DOMESTIC	1	500	HP23053539873	HPL - ELECTRIC	1	5-30A	1	200	708	29.5	5288	22/09/2023	91304001231	22/09/2023	30/09/2023	339	1527034026	339000089
37	448	22/09/2023	NR913233	CHENCHU	3-53/1 , H/	H/O KOLIN	VENKATRI	DOMESTIC	1	1000	HP23053539873	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	5286	22/09/2023	91304001228	22/09/2023	30/09/2023	339	1527034026	339000090
38	449	22/09/2023	NR913233	CHENCHU	3-55 , KOL	KOLIMPAI	VENKATRI	DOMESTIC	1	500	HP23053539873	HPL - ELECTRIC	1	5-30A	1	200	708	29.5	5295	22/09/2023	91304001229	22/09/2023	30/09/2023	339	1527034026	339000091
39	450	11/10/2023	NR913233	CHENCHU	3-53/1 , KC	KOLIMPAI	VENKATRI	DOMESTIC	1	500	HP23053539294	HPL - ELECTRIC	1	5-30A	1	200	708	29.5	5434	#########	91304001690	#########	20/10/2023	339	1527032003	339000092
40	451	11/10/2023	NR913233	CHENCHU	3-53 , KOL	KOLIMPAI	VENKATRI	DOMESTIC	1	500	HP23053539294	HPL - ELECTRIC	1	5-30A	1	200	708	29.5	5433	#########	91304001691	#########	20/10/2023	339	1527032003	339000093
41	452	10/2/2024	NR913243	G NARAYA	3-48/1 , KC	KOLIMPAI	KOLIMPAI	DOMESTIC	1	1000	HE23122158037	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	2230648333	10/2/2024	91304004489	10/2/2024	12/2/2024	339	1527032003	339000094
42	453	22/09/2023	NR913233	VADDE SA	4-26 , VEN	VENKATRI	VENKATRI	DOMESTIC	1	500	HP23053539874	HPL - ELECTRIC	1	5-30A	1	200	708	29.5	5294	22/09/2023	91304001227	22/09/2023	30/09/2023	342	1527034026	342000535
43	454	19/09/2023	NR913233	KOUDI GC	2-5/1 , VEN	VENKATRI	VENKATRI	NON-DOM	1	1000	HP23053539840	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	109572	12/9/2023	91304001109	19/09/2023	29/09/2023	342	1527034026	342000536
44	456	6/10/2023	NR913233	PYARKAM	2-43/1 , VE	VENKATRI	VENKATRI	DOMESTIC	2	1000	HP23053539759	HPL - ELECTRIC	1	5-30A	1	800	1416	59	7705	5/10/2023	91304001569	6/10/2023	13/10/2023	342	1527034026	342000538
45	457	17/10/2023	NR913233	PARKAMP	SYNO 269,	VENKATRI	VENKATRI	DOMESTIC	1	1000	HE23082135671	HIMACHAL ENERGY	1	5-30A	1	200	1416	29.5	281664	#########	91304001813	17/10/2023	26/10/2023	342	1527034026	342000539
46	458	7/11/2023	NR913233	N NARAYA	2-55 , VEN	VENKATRI	VENKATRI	AGRICULT	1	1000	HE23082135566	HIMACHAL ENERGY	1	5-30A	1	600	1200	29.5	5638	4/11/2023	91303060375	7/11/2023	14/11/2023	342	1527034026	342000544
47	466	11/7/2024	NR913244	K PADMAI	3-37 , VEN	VENKATRI	VENKATRI	AGRICULT	1	1000	HP24036936909	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2378739940	11/7/2024	91303060953	11/7/2024	18/07/2024	342	1527034027	342000554
48	470	8/1/2024	NR913243	D RAJU	8-30/1 , YE	YELKI CHE	YELKI CHE	AGRICULT	1	500	HE23102150976	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	5869	8/1/2024	91304003567	8/1/2024	16/01/2024	346	1527019007	346000075
49	472	11/7/2024	NR913244	R NAGYA	3- 6 , YELK	YELKI CHE	YELKI CHE	DOMESTIC	1	500	HP24036936909	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2378602971	11/7/2024	91303060949	11/7/2024	18/07/2024	346	1527019007	346000108
50	473	11/7/2024	NR913244	R SHANKA	8- 8 , YELK	YELKI CHE	YELKI CHE	GENERAL	1	500	HP24036936909	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2378597354	11/7/2024	91303060949	11/7/2024	18/07/2024	346	1527019007	346000109
51	477	7/6/2024	NR913244	SARA BAL	6- 9 , MOH	MOHAMN	MATAM P	DOMESTIC	1	1000	HP23093550397	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2347566655	7/6/2024	91303060754	7/6/2024	14/06/2024	357	1527311009	357000001
52	478	12/2/2024	NR913243	D SRINU	3-71/2 , M	MUNDALI	MUNDALI	DOMESTIC	1	500	HE23122158038	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	2232444774	12/2/2024	91304004505	12/2/2024	20/02/2024	359	1527018041	359000009
53	479	12/2/2024	NR913243	SMT GANG	3-71/3 , M	MUNDALI	MUNDALI	DOMESTIC	1	500	HE23122158037	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	2232448444	12/2/2024	91304004505	12/2/2024	20/02/2024	359	1527018041	359000010
54	480	4/7/2024	NR913244	DEVAVATI	1-1/6 , MU	MUNDALI	MUNDALI	DOMESTIC	1	500	HP24036937440	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2370593923	4/7/2024	91303060903	4/7/2024	12/7/2024	359	1527311009	359000011
55	481	4/7/2024	NR913244	D SHANKA	2-1/84 , M	MUNDALI	MUNDALI	DOMESTIC	1	500	HP24036937440	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2370582146	4/7/2024	91303060903	4/7/2024	12/7/2024	359	1527311009	359000012
56	482	26/10/2023	NR913233	MUDAVA	7-21 , BOR	BORING T	GUVVANI	DOMESTIC	1	1000	HE23082135618	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	281666	17/10/2023	91304001983	26/10/2023	28/10/2023	360	1527330003	360000005
57	483	9/7/2024	NR913244	MUDAVA	3-42 , BOR	BORING T	BORING T	DOMESTIC	1	1000	HP24036937021	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	305214	2/7/2024	91303060930	9/7/2024	18/07/2024	360	1527028015	360000010
58	484	19/03/2024	NR913243	K LAXMAN	7-72 , MAD	MADRA M	NANCHAR	DOMESTIC	1	1000	HE23122158073	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305170	15/03/2024	91304005211	19/03/2024	23/03/2024	361	1527028015	361000010
59	485	19/04/2024	NR913243	CHOWAN	7-72 , NAN	NANCHAR	NANCHAR	DOMESTIC	1	1000	HP24013567632	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	305169	15/03/2024	91304005429	19/04/2024	25/04/2024	361	1527028015	361000011
60	486	26/07/2024	NR913244	KISHAN CH	7-59 , GUV	GUVVANI	GUVVANI	NON-DOM	1	1000	HP24036937853	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	305226	25/07/2024	91303061041	26/07/2024	2/8/2024	361	1527028005	361000012
61	487	26/07/2024	NR913244	R ANUSHA	SYNO 73/1	GUVVANI	GUVVANI	DOMESTIC	2	1000	HP24036937853	HPL - ELECTRIC	1	5-30A	1	800	1200	59	305224	25/07/2024	91303061040	26/07/2024	30/07/2024	361	1527028006	361000013
62	488	26/07/2024	NR913244	RATHOD I	7-76 , GUV	GUVVANI	GUVVANI	DOMESTIC	1	1000	HP24036937853	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	305225	25/07/2024	91303061042	26/07/2024	30/07/2024	361	1527028015	361000014
63	489	3/8/2024	NR913244	RATHOD C	7-65 , MAD	MADRA M	MADRA M	DOMESTIC	1	1000	HP24036937895	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	305234	2/8/2024	91303061104	3/8/2024	7/8/2024	361	1527028005	361000015
64	490	3/8/2024	NR913244	GOPAL RA	7-66 , MAD	MADRA M	MADRA M	NON-DOM	1	1000	HP24036937895	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	305233	2/8/2024	91303061105	3/8/2024	7/8/2024	361	1527028005	361000016
65	491	12/1/2024	NR913243	MUDAVA	7-41/1 , GU	GUVVANI	GUVVANI	DOMESTIC	2	1000	HE23102150886	HIMACHAL ENERGY	1	5-30A	1	800	1200	59	519674	12/1/2024	91304003777	12/1/2024	17/01/2024	362	1527028015	362000010
66	492	23/09/2024	NR913244	MUDAVA	7-14/3 , GU	GUVVANI	GUVVANI	DOMESTIC	1	1000	HP24036938666	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	305250	10/9/2024	91303061375	23/09/2024	25/09/2024	362	1527018051	362000011
67	493	3/11/2023	NR913233	BOYA ANJ	7-78/1 , BC	BOYA GUI	YELKI CHE	DOMESTIC	1	500	HE23082135646	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	5621	2/11/2023	91304002186	3/11/2023	9/11/2023	363	1527019046	363000018
68	494	10/1/2024	NR913243	B NAGESH	8-00 , Boya	Boya Gudi	Boya Gudi	DOMESTIC	1	1000	HE23102150813	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305128	6/1/2024	91304003652	10/1/2024	16/01/2024	363	1527019178	363000019
69	495	2/4/2024	NR913243	B ANJILAI	7-84/1 , BC	BOYA GUI	BOYA GUI	AGRICULT	1	1000	HP24013567502	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2287707876	2/4/2024	91304005348	2/4/2024	15/04/2024	363	1527019046	363000020

500	8/10/2024	NR913244	KATRAVA	4-151 ,BAI	BAPANI KI	BAPANI KI	NON-DOM	1	500	HP24036938231	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2454056585	8/10/2024	91303061428	8/10/2024	15/10/2024	365	1527034001	365000010		
501	11/10/2023	NR913233	K GOPAL	1-12 ,PEDI	PEDDA TH	CHOWDAI	DOMESTIC	2	1000	HP23053539923	HPL - ELECTRIC	1	5-30A	1	800	1416	59	5435	#########	91304001694	#########	20/10/2023	366	1527028015	366000041		
502	13/12/2023	NR913233	K RAJ KUM	3-04 ,PEDI	PEDDA TH	PEDDA TH	DOMESTIC	1	500	HE23092138221	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	29298	#########	91304002882	13/12/2023	19/12/2023	366	1527007003	366000042		
503	13/12/2023	NR913233	KATRAVA	4-016 ,PEI	PEDDA TH	PEDDA TH	DOMESTIC	1	1000	HE23092138220	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	29301	#########	91304002881	13/12/2023	19/12/2023	366	1527007003	366000043		
504	6/1/2024	NR913243	NANKU BA	2-88/3 ,PE	PEDDA TH	PEDDA TH	DOMESTIC	1	500	HE23102150818	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	5844	5/1/2024	91304003512	6/1/2024	10/1/2024	366	1527028006	366000044		
505	22/02/2024	NR913243	K THULSIR	3-35 ,PEDI	PEDDA TH	PEDDA TH	DOMESTIC	1	1000	HE23122157781	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305155	21/02/2024	91304004748	22/02/2024	26/02/2024	366	1527019072	366000045		
506	6/3/2024	NR913243	K SHANKA	3-11 ,PEDI	PEDDA TH	PEDDA TH	DOMESTIC	1	1000	HE23122157905	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305156	22/02/2024	91304005051	6/3/2024	14/03/2024	366	1527028006	366000046		
507	6/3/2024	NR913243	KATRAVA	2-79 ,PEDI	PEDDA TH	PEDDA TH	DOMESTIC	1	500	HE23122158262	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	2262169745	6/3/2024	91304005054	6/3/2024	14/03/2024	366	1527028006	366000047		
508	6/3/2024	NR913243	KATRAVA	1-42 ,PEDI	PEDDA TH	PEDDA TH	DOMESTIC	1	500	HE23122158261	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	2262208983	6/3/2024	91304005056	6/3/2024	14/03/2024	366	1527028005	366000048		
509	6/5/2024	NR913244	K BUJJI BA	3-050 ,PEI	PEDDA TH	CHOWDAI	DOMESTIC	1	1000	HP24013567690	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	281768	3/5/2024	91304005546	6/5/2024	13/05/2024	367	1527007036	366000049		
510	23/05/2024	NR913244	KATRAVA	3-60/1 ,PE	PEDDA TH	CHOWDAI	DOMESTIC	1	1000	HP24013567117	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2335797002	23/05/2024	91303060650	23/05/2024	27/05/2024	366	1527007036	366000050		
511	23/05/2024	NR913244	KATRAVA	3-60 ,PEDI	PEDDA TH	CHOWDAI	DOMESTIC	1	1000	HP24013567118	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2335787827	23/05/2024	91303060650	23/05/2024	27/05/2024	366	1527007036	366000051		
512	11/6/2024	NR913244	V RAGYA	2-69/1 ,PE	PEDDA TH	CHOWDAI	DOMESTIC	1	1000	HP23093550326	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2350991241	11/6/2024	91303060763	11/6/2024	17/06/2024	366	1527007036	366000052		
513	24/07/2024	NR913244	KATRAVA	3-47 ,PEDI	PEDDA TH	CHOWDAI	DOMESTIC	1	500	HP24036937977	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2393892352	24/07/2024	91303061024	24/07/2024	31/07/2024	366	1527007036	366000053		
514	14/08/2024	NR913244	K CHEENA	3-092/3 ,P	PEDDA TH	CHOWDAI	DOMESTIC	1	500	HP24036938336	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2413630138	14/08/2024	91303061166	14/08/2024	23/08/2024	366	1527007036	366000054		
515	24/08/2024	NR913244	K HAREESI	1-51 ,PEDI	PEDDA TH	CHOWDAI	DOMESTIC	1	1000	HP24036936871	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2421882781	24/08/2024	91303061232	24/08/2024	28/08/2024	366	1527007036	366000055		
516	24/08/2024	NR913244	KATRAVA	1-53 ,PEDI	PEDDA TH	CHOWDAI	DOMESTIC	1	500	HP24036936870	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2421888770	24/08/2024	91303061232	24/08/2024	28/08/2024	366	1527007036	366000056		
517	24/08/2024	NR913244	KATRAVA	2-53 ,PEDI	PEDDA TH	CHOWDAI	DOMESTIC	1	500	HP24036937758	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2421893072	24/08/2024	91303061232	24/08/2024	28/08/2024	366	1527007036	366000057		
518	2/9/2024	NR913244	K CHATRI	3-42 ,PEDI	PEDDA TH	CHOWDAI	DOMESTIC	1	500	HP24036936919	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2427865408	2/9/2024	91303061263	2/9/2024	10/9/2024	366	1527007036	366000058		
519	13/09/2024	NR913244	K CHAMPL	2-64 ,PEDI	PEDDA TH	CHOWDAI	DOMESTIC	1	1000	HP24036938514	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	305238	6/8/2024	91303061325	13/09/2024	19/09/2024	366	1527007036	366000059		
520	16/10/2024	NR913244	K LALLI BA	3-092/A ,F	PEDDA TH	PEDDA TH	DOMESTIC	1	500	HP24036938526	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2459466040	16/10/2024	91303061457	16/10/2024	24/10/2024	366	1527007036	366000060		
521	6/3/2024	NR913243	S LAXMAN	3-100 ,GU	GUNGYA I	GUNGYA I	DOMESTIC	1	500	HE23122158261	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	2262161586	6/3/2024	91304005053	6/3/2024	14/03/2024	367	1527009030	367000008		
522	24/07/2024	NR913244	VISLAVATI	4-87 ,KUCI	KUCHAMI	CHOWDAI	NON-DOM	1	500	HP24036937977	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2393871278	24/07/2024	91303061024	24/07/2024	31/07/2024	368	1527310166	368000008		
523	8/9/2023	NR913233	HIRA NAR	8-36/6 ,N/	NANCHAR	DESAIPALI	DOMESTIC	2	5000	7796292	HPL - ELECTRIC	3	5-30A	1	4000	7080	59	5156	8/9/2023	91304000860	8/9/2023	20/09/2023	369	1527327019	369001688		
524	8/9/2023	NR913233	NAKKA CH	9-27 ,NAN	NANCHAR	DESAIPALI	DOMESTIC	1	1000	HP23053539759	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	5149	8/9/2023	91304000861	8/9/2023	20/09/2023	369	1527019006	369001689		
525	8/9/2023	NR913233	NAKKA CH	9-27 ,NAN	NANCHAR	DESAIPALI	DOMESTIC	1	1000	HP23053539759	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	5148	8/9/2023	91304000862	8/9/2023	20/09/2023	369	1527019028	369001690		
526	8/9/2023	NR913233	NAKKA CH	9-27 ,NAN	NANCHAR	DESAIPALI	DOMESTIC	1	1000	HP23053539759	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	5147	8/9/2023	91304000863	8/9/2023	20/09/2023	369	1527019005	369001691		
527	23/09/2023	NR913233	DONGALI	SYNO 452	DESAIPALI	DESAIPALI	NON-DOM	1	2000	HP23053539374	HPL - ELECTRIC	1	5-30A	1	400	2832	29.5	5279	22/09/2023	91304001252	23/09/2023	30/09/2023	369	1527019005	369001692		
528	9/10/2023	NR913233	BALU SHA	SYNO 453,	NANCHAR	DESAIPALI	DOMESTIC	2	1000	HP23053539940	HPL - ELECTRIC	1	5-30A	1	800	1416	59	281650	3/10/2023	91304001617	9/10/2023	13/10/2023	369	1527019005	369001695		
529	11/10/2023	NR913233	D LAXMI	9-84 ,NAN	NANCHAR	DESAIPALI	DOMESTIC	1	1000	HP23053539294	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	5447	#########	91304001692	#########	20/10/2023	369	1527019028	369001698		
530	11/10/2023	NR913233	SRI CHENI	6-89/31 ,N	NANCHAR	DESAIPALI	DOMESTIC	1	1000	HP23053539922	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	5448	#########	91304001693	#########	20/10/2023	369	1527019005	369001699		
531	18/10/2023	NR913233	SMT KRISI	5-85/10 ,N	NANCHAR	DESAIPALI	NON-DOM	1	1000	HE23082135452	HIMACHAL ENERGY	1	5-30A	1	200	1416	29.5	5483	17/10/2023	91304001837	18/10/2023	26/10/2023	369	1527019028	369001702		
532	18/10/2023	NR913233	SMT KRISI	5-85/10 ,N	NANCHAR	DESAIPALI	NON-DOM	2	1000	HE23082135452	HIMACHAL ENERGY	1	5-30A	1	800	1416	59	5478	17/10/2023	91304001838	18/10/2023	26/10/2023	369	1527019028	369001703		
533	18/10/2023	NR913233	T ANANTH	1-17 ,NAN	NANCHAR	DESAIPALI	DOMESTIC	2	1000	HE23082135591	HIMACHAL ENERGY	1	5-30A	1	800	1416	59	5479	17/10/2023	91304001842	18/10/2023	26/10/2023	369	1527019029	369001704		
534	1/11/2023	NR913233	GANGARA	8-16 ,NAN	NANCHAR	DESAIPALI	DOMESTIC	1	1000	HE23082135580	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	109601	30/10/2023	91304002107	1/11/2023	9/11/2023	369	1527019028	369001710		
535	1/11/2023	NR913233	GANGARA	8-16 ,NAN	NANCHAR	DESAIPALI	NON-DOM	1	1000	HE23082135768	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	109600	30/10/2023	91304002106	1/11/2023	9/11/2023	369	1527019029	369001711		
536	2/11/2023	NR913233	DEPOT MA	TSRTC BU	NANCHAR	NANCHAR	NON-DOM	2	8000	7796485	HPL - ELECTRIC	3	5-30A	1	6400	9600	59	469823	19/10/2023	91304002180	2/11/2023	9/11/2023	369	1527019029	369001713		
537	18/11/2023	NR913233	MOHAMM	8-43 ,DES/	DESAIPALI	DESAIPALI	DOMESTIC	2	1000	HE23092138061	HIMACHAL ENERGY	1	5-30A	1	800	1200	59	5668	17/11/2023	91304002552	18/11/2023	26/11/2023	369	1527019032	369001718		
538	18/11/2023	NR913233	DONGALA	9-85 ,DES/	DESAIPALI	DESAIPALI	DOMESTIC	1	1000	HE23092138086	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	5661	17/11/2023	91304002556	18/11/2023	26/11/2023	369	1527019030	369001719		
539	18/11/2023	NR913233	MYADAM	C/9-92 ,DE	DESAIPALI	DESAIPALI	DOMESTIC	1	1000	HE23092138085	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	5657	17/11/2023	91304002560	18/11/2023	26/11/2023	369	1527019029	369001720		
540	6/12/2023	NR913233	K CHANDF	SYNO 380	NANCHAR	DESAIPALI	NON-DOM	1	1000	HE23092138107	HIMACHAL ENERGY	1	5-30A	1	600	1200	29.5	5809	5/12/2023	91304002809	6/12/2023	13/12/2023	369	1527019029	369001721		
541	6/3/2024	NR913243	SHASHI KU	3-142/1 ,N	NANCHAR	DESAIPALI	NON-DOM	2	1000	HE23122158261	HIMACHAL ENERGY	1	5-30A	1	800	1200	59	2262140570	6/3/2024	91304005053	6/3/2024	14/03/2024	369	1527019028	369001745		
542	13/03/2024	NR913243	DR APARN	SYNO 413,	414/A1	NANCHAR	DOMESTIC	2	1000	HE23122157875	HIMACHAL ENERGY	1	5-30A	1	2400	1200	59	2269495329	13/03/2024	91304005135	13/03/2024	18/03/2024	369	1527019028	369001747		
543	13/03/2024	NR913243	YERUKALI	8-50 ,NAN	NANCHAR	DESAIPALI	DOMESTIC	1	1000	HE23122157809	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	19892	29/02/2024	91304005134	13/03/2024	18/03/2024	369	1527019028	369001748		
544	14/08/2024	NR913244	VADDE VE	1-16 ,NAN	NANCHAR	DESAIPALI	AGRICULT	1	1000	HP24036938336	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2413206262	14/08/2024	91303061164	14/08/2024	23/08/2024	369	1527019028	369001780		

509	6/5/2024	NR913244	K BUJJI BA	3-050 ,PEI	PEDDA TH	CHOWDAI	DOMESTIC	1	1000	HP24013567690	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	281768	3/5/2024	91304005546	6/5/2024	13/05/2024	367	1527007036	366000049		
510	23/05/2024	NR913244	KATRAVA	3-60/1 ,PE	PEDDA TH	CHOWDAI	DOMESTIC	1	1000	HP24013567117	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2335797002	23/05/2024	91303060650	23/05/2024	27/05/2024	366	1527007036	366000050		
511	23/05/2024	NR913244	KATRAVA	3-60 ,PEDI	PEDDA TH	CHOWDAI	DOMESTIC	1	1000	HP24013567118	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2335787827	23/05/2024	91303060650	23/05/2024	27/05/2024	366	1527007036	366000051		
512	11/6/2024	NR913244	V RAGYA	2-69/1 ,PE	PEDDA TH	CHOWDAI	DOMESTIC	1	1000	HP23093550326	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2350991241	11/6/2024	91303060763	11/6/2024	17/06/2024	366	1527007036	366000052		
513	24/07/2024	NR913244	KATRAVA	3-47 ,PEDI	PEDDA TH	CHOWDAI	DOMESTIC	1	500	HP24036937977	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2393892352	24/07/2024	91303061024	24/07/2024	31/07/2024	366	1527007036	366000053		
514	14/08/2024	NR913244	K CHEENA	3-092/3 ,P	PEDDA TH	CHOWDAI	DOMESTIC	1	500	HP24036938336	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2413630138	14/08/2024	91303061166	14/08/2024	23/08/2024	366	1527007036	366000054		
515	24/08/2024	NR913244	K HAREESI	1-51 ,PEDI	PEDDA TH	CHOWDAI	DOMESTIC	1	1000	HP24036936871	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2421882781	24/08/2024	91303061232	24/08/2024	28/08/2024	366	1527007036	366000055		
516	24/08/2024	NR913244	KATRAVA	1-53 ,PEDI	PEDDA TH	CHOWDAI	DOMESTIC	1	500	HP24036936870	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2421888770	24/08/2024	91303061232	24/08/2024	28/08/2024	366	1527007036	366000056		
517	24/08/2024	NR913244	KATRAVA	2-53 ,PEDI	PEDDA TH	CHOWDAI	DOMESTIC	1	500	HP24036937758	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2421893072	24/08/2024	91303061232	24/08/2024	28/08/2024	366	1527007036	366000057		
518	2/9/2024	NR913244	K CHATRI	3-42 ,PEDI	PEDDA TH	CHOWDAI	DOMESTIC	1	500	HP24036936919	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2427865408	2/9/2024	91303061263	2/9/2024	10/9/2024	366	1527007036	366000058		
519	13/09/2024	NR913244	K CHAMPL	2-64 ,PEDI	PEDDA TH	CHOWDAI	DOMESTIC	1	1000	HP24036938514	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	305238	6/8/2024	91303061325	13/09/2024	19/09/2024	366	1527007036	366000059		
520	16/10/2024	NR913244	K LALLI BA	3-092/A ,F	PEDDA TH	PEDDA TH	DOMESTIC	1	500	HP24036938526	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2459466040	16/10/2024	91303061457	16/10/2024	24/10/2024	366	1527007036	366000060		
521	6/3/2024	NR913243	S LAXMAN	3-100 ,GU	GUNGYA I	GUNGYA I	DOMESTIC	1	500	HE23122158261	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	2262161586	6/3/2024	91304005053	6/3/2024	14/03/2024	367	1527009030	367000008		
522	24/07/2024	NR913244	VISLAVATI	4-87 ,KUCI	KUCHAMI	CHOWDAI	NON-DOM	1	500	HP24036937977	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2393871278	24/07/2024	91303061024	24/07/2024	31/07/2024	368	1527310166	368000008		
523	8/9/2023	NR913233	HIRA NAR	8-36/6 ,NA	NANCHAR	DESAIPALI	DOMESTIC	2	5000	7796292	HPL - ELECTRIC	3	5-30A	1	4000	7080	59	5156	8/9/2023	91304000860	8/9/2023	20/09/2023	369	1527327019	369001688		
524	8/9/2023	NR913233	NAKKA CH	9-27 ,NAN	NANCHAR	DESAIPALI	DOMESTIC	1	1000	HP23053539759	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	5149	8/9/2023	91304000861	8/9/2023	20/09/2023	369	1527019006	369001689		
525	8/9/2023	NR913233	NAKKA CH	9-27 ,NAN	NANCHAR	DESAIPALI	DOMESTIC	1	1000	HP23053539759	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	5148	8/9/2023	91304000862	8/9/2023	20/09/2023	369	1527019028	369001690		
526	8/9/2023	NR913233	NAKKA CH	9-27 ,NAN	NANCHAR	DESAIPALI	DOMESTIC	1	1000	HP23053539759	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	5147	8/9/2023	91304000863	8/9/2023	20/09/2023	369	1527019005	369001691		
527	23/09/2023	NR913233	DONGALI	SYNO 452	DESAIPALI	DESAIPALI	NON-DOM	1	2000	HP23053539374	HPL - ELECTRIC	1	5-30A	1	400	2832	29.5	5279	22/09/2023	91304001252	23/09/2023	30/09/2023	369	1527019005	369001692		
528	9/10/2023	NR913233	BALU SHA	SYNO 453,	NANCHAR	DESAIPALI	DOMESTIC	2	1000	HP23053539940	HPL - ELECTRIC	1	5-30A	1	800	1416	59	281650	3/10/2023	91304001617	9/10/2023	13/10/2023	369	1527019005	369001695		
529	11/10/2023	NR913233	D LAXMI	9-84 ,NAN	NANCHAR	DESAIPALI	DOMESTIC	1	1000	HP23053539294	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	5447	##########	91304001692	##########	20/10/2023	369	1527019028	369001698		
530	11/10/2023	NR913233	SRI CHENI	6-89/31 ,N	NANCHAR	DESAIPALI	DOMESTIC	1	1000	HP23053539922	HPL - ELECTRIC	1	5-30A	1	200	1416	29.5	5448	##########	91304001693	##########	20/10/2023	369	1527019005	369001699		
531	18/10/2023	NR913233	SMT KRISI	5-85/10 ,N	NANCHAR	DESAIPALI	NON-DOM	1	1000	HE23082135452	HIMACHAL ENERGY	1	5-30A	1	200	1416	29.5	5483	17/10/2023	91304001837	18/10/2023	26/10/2023	369	1527019028	369001702		
532	18/10/2023	NR913233	SMT KRISI	5-85/10 ,N	NANCHAR	DESAIPALI	NON-DOM	2	1000	HE23082135452	HIMACHAL ENERGY	1	5-30A	1	800	1416	59	5478	17/10/2023	91304001838	18/10/2023	26/10/2023	369	1527019028	369001703		
533	18/10/2023	NR913233	T ANANTH	1-17 ,NAN	NANCHAR	DESAIPALI	DOMESTIC	2	1000	HE23082135591	HIMACHAL ENERGY	1	5-30A	1	800	1416	59	5479	17/10/2023	91304001842	18/10/2023	26/10/2023	369	1527019029	369001704		
534	1/11/2023	NR913233	GANGARA	8-16 ,NAN	NANCHAR	DESAIPALI	DOMESTIC	1	1000	HE23082135580	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	109601	30/10/2023	91304002107	1/11/2023	9/11/2023	369	1527019028	369001710		
535	1/11/2023	NR913233	GANGARA	8-16 ,NAN	NANCHAR	DESAIPALI	NON-DOM	1	1000	HE23082135768	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	109600	30/10/2023	91304002106	1/11/2023	9/11/2023	369	1527019029	369001711		
536	2/11/2023	NR913233	DEPOT MA	TSRTC BU	NANCHAR	NANCHAR	NON-DOM	2	8000	7796485	HPL - ELECTRIC	3	5-30A	1	6400	9600	59	469823	19/10/2023	91304002180	2/11/2023	9/11/2023	369	1527019029	369001713		
537	18/11/2023	NR913233	MOHAMM	8-43 ,DES	DESAIPALI	DESAIPALI	DOMESTIC	2	1000	HE23092138061	HIMACHAL ENERGY	1	5-30A	1	800	1200	59	5668	17/11/2023	91304002552	18/11/2023	26/11/2023	369	1527019032	369001718		
538	18/11/2023	NR913233	DONGALA	9-85 ,DES	DESAIPALI	DESAIPALI	DOMESTIC	1	1000	HE23092138086	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	5661	17/11/2023	91304002556	18/11/2023	26/11/2023	369	1527019030	369001719		
539	18/11/2023	NR913233	MYADAM	C/9-92 ,DE	DESAIPALI	DESAIPALI	DOMESTIC	1	1000	HE23092138085	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	5657	17/11/2023	91304002560	18/11/2023	26/11/2023	369	1527019029	369001720		
540	6/12/2023	NR913233	K CHANDF	SYNO 380	NANCHAR	DESAIPALI	NON-DOM	1	1000	HE23092138107	HIMACHAL ENERGY	1	5-30A	1	600	1200	29.5	5809	5/12/2023	91304002809	6/12/2023	13/12/2023	369	1527019029	369001721		
541	6/3/2024	NR913243	SHASHI KU	3-142/1 ,N	NANCHAR	DESAIPALI	NON-DOM	2	1000	HE23122158261	HIMACHAL ENERGY	1	5-30A	1	800	1200	59	2262140570	6/3/2024	91304005053	6/3/2024	14/03/2024	369	1527019028	369001745		
542	13/03/2024	NR913243	DR APARN	SYNO 413, 414/A1	NANCHAR	DESAIPALI	DOMESTIC	2	1000	HE23122157875	HIMACHAL ENERGY	1	5-30A	1	2400	1200	59	2269495329	13/03/2024	91304005135	13/03/2024	18/03/2024	369	1527019028	369001747		
543	13/03/2024	NR913243	YERUKALI	8-50 ,NAN	NANCHAR	DESAIPALI	DOMESTIC	1	1000	HE23122157809	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	19892	29/02/2024	91304005134	13/03/2024	18/03/2024	369	1527019028	369001748		
544	14/08/2024	NR913244	VADDE VE	1-16 ,NAN	NANCHAR	DESAIPALI	AGRICULT	1	1000	HP24036938336	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2413206262	14/08/2024	91303061164	14/08/2024	23/08/2024	369	1527019028	369001780		
548	9/9/2024	NR913244	KARUPAKI	7-81/2 ,N/	NANCHAR	NANCHAR	DOMESTIC	1	1000	HP24036938277	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2432763943	9/9/2024	91303061298	9/9/2024	19/09/2024	369	1527019005	369001792		
549	9/9/2024	NR913244	KARUPAKI	7-81/2 ,N/	NANCHAR	NANCHAR	DOMESTIC	1	1000	HP24036937912	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	2432758924	9/9/2024	91303061298	9/9/2024	19/09/2024	369	1527019005	369001793		
550	9/1/2024	NR913243	KOTHA GC	1-4/46 ,AN	AMUDALA	GADIRYAL	DOMESTIC	1	500	HE23102150914	HIMACHAL ENERGY	1	5-30A	1	200	600	29.5	5873	8/1/2024	91304003624	9/1/2024	16/01/2024	370	1527009001	370000020		
551	20/02/2024	NR913243	LAVUDYA	4-65/1 ,AN	AMUDALA	GADIRYAL	DOMESTIC	1	1000	HE23122158038	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	305154	19/02/2024	91304004714	20/02/2024	23/02/2024	370	1527009001	370000021		
552	26/03/2024	NR913243	P MANIKI	4-57 ,AM	AMUDALA	AMUDALA	DOMESTIC	1	1000	HE23122158209	HIMACHAL ENERGY	1	5-30A	1	200	1200	29.5	281742	18/03/2024	91304005289	26/03/2024	27/03/2024	370	1527009001	370000022		
553	26/03/2024	NR913243	V PENTAI/	4-87 ,BAN	BANDA KL	AMUDALA	DOMESTIC	1	1000	HP24013567309	HPL - ELECTRIC	1	5-30A	1	200	1200	29.5	305168	15/03/2024	91304005290	26/03/2024	27/03/2024	371	1527009023	371000018		
554	19/09/2023	NR913233	M CHENN	1-187 ,CHI	CHINNAIP	CHINNAIP	NON-DOM	1	500	HP23053539840	HPL - ELECTRIC	1	5-30A	1	200	708	29.5	109570	8/9/2023	91304001110	19/09/2023	29/09/2023	377	1527037007	377000488		
555	22/01/2024	NR913243	P VIJAYA L	SYNO 104	CHINNAIP	MOHAMN	DOMESTIC	2	1000	HE23102151167	HIMACHAL ENERGY	1	5-30A	1	2400	1200	59	96065	20/01/2024	91304003990	22/01/2024	26/01/2024	377	1527037023	377000490		
556	22/05/2024	NR913244	V SUVARN	5-20 ,CHI	CHINNAIP	CHINNAIP	GENERAL	1	500	HP24013567584	HPL - ELECTRIC	1	5-30A	1	200	600	29.5	2335022652	22/05/2024	91303060647	22/05/2024	25/05/2024	377	1527026031	377000491		

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