

USA Energy Consumption

(COMP3125 Individual Project)

*Note: Do not used sub-title

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dept. name of organization

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Keywords— *Energy Consumption, Primary Energy, Regression Analysis, Sector*

I. INTRODUCTION (HEADING I)

Primary energy consumption in the United States has undergone significant changes over the past several decades, driven by technological progress, economic growth, policy shifts, and evolving patterns of demand across major sectors of society. The electric power and transportation sectors have grown to represent the largest consumers of energy, reflecting increased electrification and continued dependance on motor fuels. Understanding how these sectors contribute to overall national energy use is valuable for policymakers, utility planners, and analysts working toward sustainable energy systems.

II. DATASETS

A. Source of dataset (Heading 2)

The dataset used in this project was obtained from Statista, a well-known statistical aggregation platform that compiles data from verified government, institutional, and industry sources. The specific dataset, “*Primary energy consumption in the United States from 1975 to 2024, by sector,*” is based on historical energy data originally published by the U.S. Energy Information Administration (EIA).

The dataset contains EIA-reported estimates of annual primary energy consumption measured in quadrillion British thermal units. The data was generated using national energy accounting procedures conducted by the EIA, which include the aggregation of consumption from electricity generation, transportation, industrial processes, residential use, and commercial activity. Since Statista directly reproduces these values without altering units or restructuring the data, the dataset is considered credible, consistent, and suitable for analytical use.

B. Character of the datasets

The dataset consists of 21 observations, each representing a five-year interval between 1975 and 2024. Each observation records the U.S. primary energy consumption for five major economic sectors. The dataset is structured in a tabular format with one row per year and one column per sector, along with the year variable. All values are reported in quadrillion Btu (British thermal units). Statista provided clean data; no unit conversions needed.

I will update when I get to it. Using a table to present this information is recommended for clarity. Explain whether you cleaned the data or converted any units, specifying the formulas or rules applied. If multiple datasets were combined, describe how they were merged. Additionally, mention if you created any new categories for analysis, detailing what they are and how they were generated. Providing this background ensures transparency and helps readers understand the reliability and relevance of your data.

Example: XXXX

III. METHODOLOGY

This project will employ a multiple linear regression (will add more methods here when I use them for final draft) model to examine whether total U.S. primary energy consumption can be predicted from the energy usage of the five major sectors. Multiple linear regression models the relationship between one dependent variable and several independent variables, assuming that these relationships are linear and that the errors are normally distributed with constant variance.

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A. Method A

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Note that the equation is centered using a center tab stop. Be sure that the symbols in your equation have been defined before or immediately following the equation. Use “(1)”, not “Eq. (1)” or “equation (1)”, except at the beginning of a sentence: “Equation (1) is . . .”

B. Method B

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C. Method C

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$$a + b = \gamma \tag{1}$$

Note that the equation is centered using a center tab stop. Be sure that the symbols in your equation have been defined before or immediately following the equation. Use “(1)”, not “Eq. (1)” or “equation (1)”, except at the beginning of a sentence: “Equation (1) is . . .”

An excellent style manual for science writers is [7].

IV. RESULTS

In this section, present your findings using an appropriate method, such as equations, numerical summaries, or visualizations like charts and graphs. Clearly explain all results and provide guidance on how to interpret them. If any unexpected results arise, discuss possible reasons or contributing factors. To improve clarity and organization, consider using subsections (e.g., A, B) to separate different aspects of your results.

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A. Result A

Example: XXX

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- a) Selection: Highlight all author and affiliation lines.
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B. Results B

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C. Results C

a) Positioning Figures and Tables: Place figures and tables at the top and bottom of columns. Avoid placing them in the middle of columns. Large figures and tables may span across both columns. Figure captions should be below the figures; table heads should appear above the tables. Insert figures and tables after they are cited in the text. Use the abbreviation “Fig. 1”, even at the beginning of a sentence.

Table Head	Table Column Head		
	Table column subhead	Subhead	Subhead
copy	More table copy ^a		

^a Sample of a Table footnote. (Table footnote)

Fig. 1. Example of a figure caption. (figure caption)

Figure Labels: Use 8 point Times New Roman for Figure labels. Use words rather than symbols or abbreviations when writing Figure axis labels to avoid confusing the reader. As an example, write the quantity “Magnetization”, or “Magnetization, M”, not just “M”. If including units in the label, present them within parentheses. Do not label axes only with units. In the example, write “Magnetization (A/m)” or “Magnetization {A[m(1)]}”, not just “A/m”. Do not label axes with a ratio of quantities and units. For example, write “Temperature (K)”, not “Temperature/K”.

V. DISCUSSION

Every method/project has its shortage or weakness. Please discuss the unsatisfied results in your project. And discuss the feasible suggestions of future work to revise/improve your result.

Example: xxx

VI. CONCLUSION

In this part, you should summarize your project. What important results did you find for your topic and what’s the effect of this result on the real-world?

Example: xxx

ACKNOWLEDGMENT (Heading 5)

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REFERENCES

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