

# Natural Gas Consumption Analysis in USA

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# About Me

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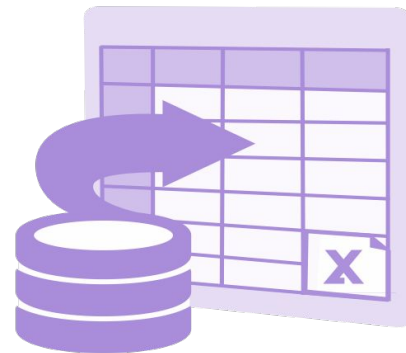
- 20' Graduated with Honor degree
  - BSc. Electronics Engineering
  - BSc. Industrial Engineering
  - Uni: Istanbul Kultur
  - Erasmus: TU Wien
- 22' MSc Graduation
  - MSc. International Management
  - Uni: Klagenfurt
  - Erasmus: TU Dortmund



# Overview

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- Dataset:
  - Natural Gas Usage Kaggle Dataset
- Tools:
  - Jupyter Notebook, Pandas
- Scope:
  - Data cleaning
  - Time Series Analysis
  - Total and Average consumption comparison throughout 2014-2024



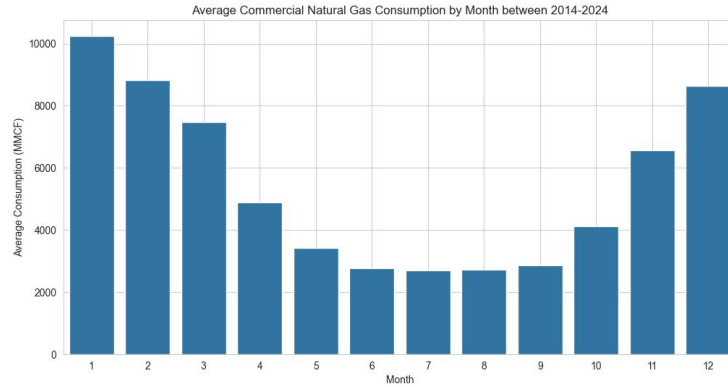
# Data Dictionary

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Column	Example Value	Description
year	2014	Calendar year of measurement
month	1	Month of the year
duoarea	SFL	State abbreviation (custom-coded by EIA)
area-name	FLORIDA	Full state name
product	EPG0	Energy product (EPG0 = Natural Gas)
product-name	Natural Gas	Full name of the product
process	VCS	Process code (e.g. VCS = commercial consumption)
process-name	Commercial Consumption	Description of the consumption process
series	N3020FL2	EIA's internal series ID for data lineage
series-description	Natural Gas Deliveries to Commercial Consumers	Full description of the time series
value	6605.0	Volume of gas consumed (in MMCF – million cubic feet)
units	MMCF	Unit of measurement (Million Cubic Feet)

# Analysis, Visualizations & Recommendations

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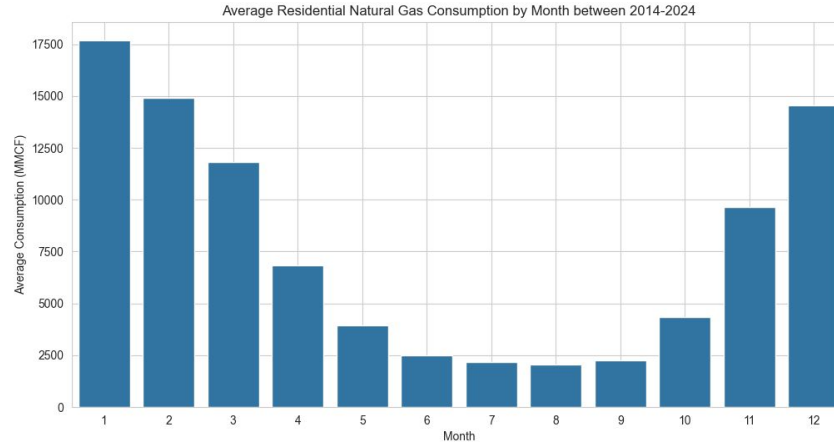
The chart shows that commercial natural gas consumption peaks in January, followed by a steady decline until August.

Consumption starts to increase again from September, reaching a secondary peak in December.

This seasonal trend suggests higher commercial heating needs during the colder months.

# Analysis, Visualizations & Recommendations

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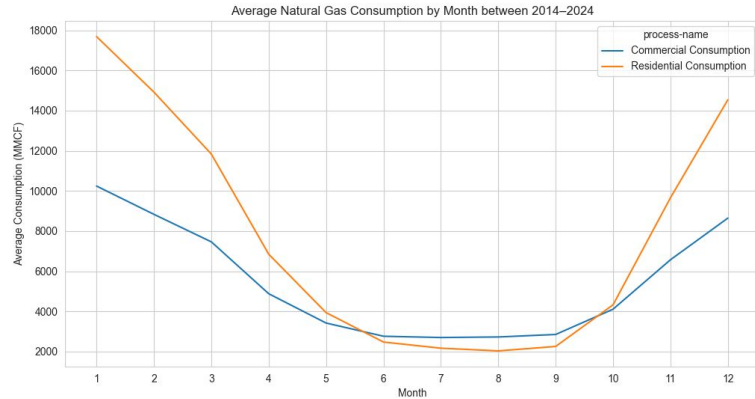
The graph shows that residential natural gas consumption is highest in January, with a sharp decline through the summer months.

Consumption hits its lowest point in July and August, then begins rising again in the fall.

This pattern reflects seasonal heating demands in households, peaking during winter.

# Analysis, Visualizations & Recommendations

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The line plot shows monthly average natural gas consumption from 2014 to 2024, comparing residential and commercial sectors.

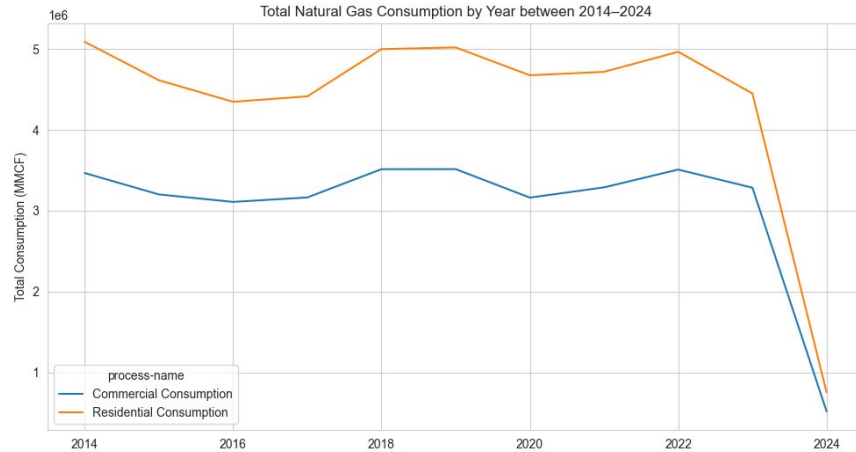
Residential consumption peaks sharply in winter months, especially in January, while it drops significantly in summer.

Commercial consumption follows a similar seasonal pattern but remains consistently lower than residential usage.



# Analysis, Visualizations & Recommendations

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The chart illustrates the annual total natural gas consumption for residential and commercial sectors from 2014 to 2024.

Residential consumption consistently exceeds commercial usage throughout the years, with both showing a noticeable drop in 2024.

This sharp decline in 2024 is likely due to incomplete data coverage, as only early months of the year may be included.

# Thank you!

## Contact



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