

Handout for January 2024 Newsletter **Teaching About the Economics of Electricity in FRED®**

Purpose.

1. Create a plot of two electricity data series.
2. Change the graph's format to show each data series on a different axis.
3. Describe and discuss patterns in the evolution of electricity production and capacity utilization over time.

Pedagogical Rationale. This assignment requires that you first search for data and plot them into a graph. Next, you will add other series, change the date range in the graph, and customize the graph by formatting the Y-axis position. Lastly, you will describe and discuss patterns in the evolution of the data series. These tasks will develop your proficiency in searching for, transforming, and interpreting data.

Grading. Your grade will be determined by (a) how precisely you complete the search and transformation data tasks and (b) how accurately you interpret the data.

Steps to Search for and Transform the Data.

1. Access <https://fred.stlouisfed.org/> and search for “Industrial Production: Utilities: Electric Power Generation, Transmission, and Distribution (NAICS = 2211).”
2. Select “Annual, Index 2017=100, Not Seasonally Adjusted.”
3. Click on the orange “EDIT GRAPH” button and select the “ADD LINE” tab.
4. Search for “Capacity Utilization: Utilities: Electric Power Generation, Transmission, and Distribution (NAICS = 2211), Annual, Percent of Capacity, Seasonally Adjusted,” and click on “Add data series.”
5. Select the tab “FORMAT” and under “LINE 2” select “Y-Axis position > Right.”
6. Select line colors accessible to your users.
7. Change the date range of the graph to start at “1982-01-01” and end at “2022-01-01.”.

Writing Prompts. Answer the following questions:

1. Between 1982 and 2022, when did industrial production of electric power generation, transmission, and distribution (the blue dotted line) peak?
2. Between 1982 and 2022, when did capacity utilization of electric power generation, transmission, and distribution (the red dotted line) peak?
3. Consider the fact that renewable sources of electricity such as solar panels and windmill farms do not operate at full capacity uninterruptedly. Briefly explain how the development of renewable energy sources can help explain the growing gap between electricity production and capacity utilization.

(NOTE: You can learn more about this topic here:

<https://research.stlouisfed.org/publications/economic-synopses/2020/10/08/renewable-sources-of-electricity-where-excess-capacity-is-built-in>)