Power Automate:
To streamline the data import process and ensure the data's timeliness, I utilized Power Automate. By setting up automated workflows, I was able to fetch data from external sources to grab important data, specifically websites that were able to match the countries with the continents, to update my Excel workbook regularly. This automation not only saved time but also reduced the risk of manual errors, ensuring that my analysis was always based on the most up-to-date information.

Data Cleaning:
To ensure the accuracy and consistency of the data, I performed several data cleaning steps. First, I removed any duplicate entries to avoid skewing the results. Next, I handled null cells by either removing the corresponding rows or filling them with appropriate values based on the context. Finally, I formatted the data consistently across all columns and rows by adding filters to facilitate further analysis.

Conditional Formatting
I utilized conditional formatting to highlight cells that showed zero and to offer visuals on the table showing data by continent for the year of 2000. By applying color scales, I was able to quickly identify patterns and anomalies in the electricity generation, energy intensity, and CO2 emissions data across different continents and years.

Formulas:
To derive valuable insights from the data, I employed various formulas in Excel. One of the key formulas I used was INDEX and MATCH, which allowed me to lookup and retrieve the country/continent match for every row. This formula combination proved particularly useful when comparing data across multiple categories on a bigger scale.

PivotTables and PivotCharts:
To summarize and visualize the data effectively, I created PivotTables and PivotCharts for three selected years (2000, 2010, and 2017). These tools enabled me to quickly aggregate the data by different dimensions, such as continent and year, then present the results specifically for 2010 and 2017 by taking the average of each continent and giving a percent of the total yielded value in a visually appealing manner. By using PivotTables and PivotCharts, I was able to identify trends and compare the performance of different continents across the three key metrics.