# Exercise 1: To visualise wind power potential and aspects that relate to wind energy utilisation in a country of your choice.

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| A map of the north and south america  Description automatically generated | Objective: To visualize wind power potential and aspects that relate to wind energy utilization in India. Data Source: **Download Wind Data**: Energy Data Info  **Content of Data**: Wind Speed and Power Density |
| **Figure 1.1: Average Wind Speed and Power density at a Hight of 100 m** |  |

## Steps Taken:

First step is to data Importing. Second step is data analysis by using histograms to categorize wind speed. Next step is to categories to Wind Speed and Power Density [See Fig 1.1].

## Results:

Figure 1.1 shows the classification of wind speed and power density using different categories. The analysis helps identify regions suitable for wind energy projects.

# Exercise 2: Download and visualise the wind speed and power density map for Denmark.

# Exercise 3: Find potential wind energy locations in County Galway, Ireland)

# Exercise 4: Local Wind Farm Planning (Location: Lindewitt Municipality, Schleswig-Holstein).

# Exercise 5: Editing Points, Lines and Polygons

# Exercise 6: Visualise the results with colours and transparency

# Exercise 7.1: Convert (Rasterize Vector to Raster) the electric grid layer to an input raster for distance mapping. Calculate the distance from the grid in metres (r.grow.distance).

# Exercise 7.2: Make a simple noise map for a planned wind farm in priority area „PR1\_NFL\_036“

# Exercise 8: Offshore Wind Energy Planning in Sweden