Complete the exercise below and submit the following to REsurety's recruiter (ndrees@resurety.com).

- Your name and contact information
- Your answers to the questions
- Your code package in a zipped file format

Introduction:

At REsurety, we operate at the intersection of weather, power markets and financial modeling to provide intelligence to the renewable energy industry's key decision makers. In order to build the best-in-class analytical tools and models, we leverage various datasets. In this exercise, you will be working with a power price dataset for the Texas Independent Power System Operator (ERCOT) and a Generation dataset from a hypothetical wind project in Texas.

Data:

Observed Power Prices:

Time frame: 2010-12 to present
Location: The data is hosted on a publicly available website.
Description: Historical prices of power (in $/MWh) for the Real-Time market for all settlement locations in Texas.

Modeled Generation:

Time frame: 1980-01 to 2023-02
Location: The data has been provided to you in a csv format attached to this document.
Description: Modeled generation (in MWh) for a hypothetical wind project in Texas.

Questions:

1. Build an API with the following specifications:
    a. Inputs:
        i. Start and end time
        ii. Settlement location
    b. Outputs:
        i. Hourly Project Settlement as calculated based on the formula below:
            1. Settlement*i* = Price*i* * Generation*i*.
        ii. Average monthly value for Settlement, Price and Generation.
2. Submit your code including any files and instructions necessary to run the API locally. A good package will include:
    a. Unit tests
    b. Smoke tests

    c. Data validation steps
    d. Container image
3. How would you deploy this API? What technologies would you use? What criteria would you take into consideration?

Expectations:

- This exercise is designed to be completed in ~2 hours. We encourage you to make any assumptions necessary to simplify your work.
- Results should reflect your work only.