Senior level .NET developer task

Main goal of this task is to develop a REST API for monitoring and managing solar power plant. **The API should allow users to:**

- Register and authenticate
- Create, read, update and delete solar power plant with following attributes:
  - Solar power plant name (optional)
  - Installed power (mandatory)
  - Date of installation (mandatory)
  - Location longitude and latitude (mandatory)
- Obtain actual or forecasted production data from a solar power plant for a specific period of time and at a preferred level of data granularity.

Each solar power plant has actual production and production forecast records with 15 minutes granularity. Based on the user API request, service should return timeseries based on following attributes:

- Timeseries type – real production or forecasted production
- Timeseries granularity – 15 minutes or 1 hour, where 1 hour granularity is equal to sum of four 15 min records within respective hour
- Timeseries timespan – span for which user would like to obtain timeseries

Requirements:

- Use .NET to build the API.
- Use a SQL database to store data and Entity Framework to interact with the database. Use Code First approach.
- Use JWT for authentication and authorization. Users should be able to create an account, log in, and receive a token that can be used to make authorized API calls.
- The application should write logs to text files, the location of the logs needs to be configurable.
- Create Seed data function that will generate historical production data for power plants in the database allowing API testing -> solar power plant data and associated timeseries can be randomly generated.
- To forecast production, use the installed power attribute of the power plant, and weather data fetched from a free online weather API -> the prediction doesn't need to make sense, just demonstrate that data from different sources is used in making it.

Deliverables:

A Visual Studio solution containing the .NET project(s)

Any additional explanations if needed

Good luck