This document provides descriptions of the fields present in two datasets: **Generation Data** and **Weather Sensor Data**. Each dataset records observations related to solar plant operations at 15-minute intervals. Below, each column (field) in the datasets is defined in detail.

1. Generation Data

This dataset contains information on power generation recorded at a 15-minute interval for each inverter at the solar plant.

- **DATE_TIME**: The date and time of each observation, recorded at 15-minute intervals.
- **PLANT_ID**: A unique identifier for the plant. This ID will remain the same across the entire file as it represents a single plant.
- **SOURCE_KEY**: The unique identifier for the inverter in the plant. Each inverter has its own ID, allowing for tracking of power generation at the inverter level.
- **DC_POWER**: The amount of direct current (DC) power generated by the inverter within the 15-minute interval, measured in kilowatts (kW).
- **AC_POWER**: The amount of alternating current (AC) power generated by the inverter within the 15-minute interval, measured in kilowatts (kW).
- **DAILY_YIELD**: A cumulative sum of the power generated by the inverter for the current day, up to the specified point in time. This resets each day.
- **TOTAL_YIELD**: The cumulative power generated by the inverter since its installation, up to the specified point in time.
- **Operating_Condition: i**ndicates the operational status of the inverter at the time of observation. It can be either "Optimal" or "Suboptimal." An "Optimal" condition means the inverter is functioning efficiently within expected parameters, while "Suboptimal" suggests underperformance potentially due to equipment issues or environmental factors impacting efficiency.

2. Weather Sensor Data

This dataset provides weather-related information relevant to solar energy production, recorded every 15 minutes.

- **DATE_TIME**: The date and time of each observation, recorded at 15-minute intervals.
- **PLANT_ID**: A unique identifier for the plant, consistent across the file.
- **SOURCE_KEY**: The unique identifier for the sensor panel used for recording the environmental conditions. Since there is only one sensor panel per plant, this will remain consistent across the entire file.

- **AMBIENT_TEMPERATURE**: The ambient temperature at the plant.
- **MODULE_TEMPERATURE**: The temperature reading of a solar panel module attached to the sensor panel.
- **IRRADIATION**: The amount of solar irradiation received at the plant during the 15-minute interval, a critical factor for power generation.

Notes:

- Both datasets use **DATE_TIME** for aligning observations recorded at the same 15-minute intervals, allowing for combined analysis of generation and weather conditions.
- **PLANT_ID** remains the same for each file as they represent data from a single plant.