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July 23, 2025

## Junior Analyst Task – Stage 1 Interview Exercise

Welcome to the first stage of the analyst evaluation. This task will assess your ability to interpret system data, extract actionable insights, and communicate your findings clearly.

Please complete both parts of the exercise below. Use Python for your analysis and scripting. You may choose any visualization software (e.g., matplotlib, seaborn, Power BI, Excel, etc.) to present your findings.

### Part A – Data Analysis

Using the spreadsheet provided, address the following prompts:

#### Peak Generation Analysis:

1. Identify and highlight the time periods with the highest power generation.
2. Reference metrics such as PGrid, PLoad, PV voltage, and charger current.
3. Support your answer with timestamps, value ranges, and brief commentary.

#### Load Pattern Recognition:

1. Determine the time periods showing peak load demand.
2. Use relevant metrics such as PLoad and load current.
3. Describe any consistent trends or notable fluctuations in demand.



### **Load Shaving Opportunities:**

1. Recommend optimal windows for load shaving implementation.
2. Explain how generation availability, battery status, and load profile support your decision.

### **System Optimization Timing:**

1. Suggest the most effective periods to optimize system performance, such as inverter operation, battery dispatch, load increment or grid interaction.
2. Justify your reasoning with specific data points.

### **Battery Usage & Health Assessment:**

1. Evaluate battery voltage, charger current, and related parameters to comment on battery utilization and health.
2. Note any anomalies, degradation signals, or inefficiencies.

### **Bonus Insight – Analyst’s Eye:**

1. Share additional correlations, patterns, or system inefficiencies you observe that weren’t asked for directly.
2. Think beyond the data – what do you see that others might miss?

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## Part B – Video Presentation (3 Minutes)

Prepare a short recorded presentation that brings your insights to life. Your video should include:

1. A brief personal introduction – name, background, and relevant experience.
2. A walkthrough of your key findings, using charts or visual aids from your analysis.
3. Clear and structured explanation of your reasoning behind recommendations and observations.
4. A final note on any additional insights or thoughts that demonstrate systems thinking.

 **Please ensure your video:**

- **Is no longer than 3 minutes**
- **Shows you on screen for at least part of the time**
- **Uses visuals or screen recording where possible to display your data interpretation**
- **Send the video presentation to [operations@midlandafrica.com](mailto:operations@midlandafrica.com)**
- **Save your script as we may require it, if you advance to the final stage.**