Node - Red is used to collect data from a smart energy meter as well as collect weather data from IBM's The Weather Company. The data collected from both the smart energy meter and The Weather Company is stored into an InfluxDB database for easy integration with Grafana.

Grafana is used as a smart home user interface to display the load demand of a building, the power generated by solar panels, as well as the voltage and current at the smart meter. The weather data is also displayed by showing the maximum temperature for the current day, the day after, and the day after that. Furthermore, a summary for the weather for three days is displayed on the interface as well.

The smart meter data was obtained from a company specialising in solar power generation.

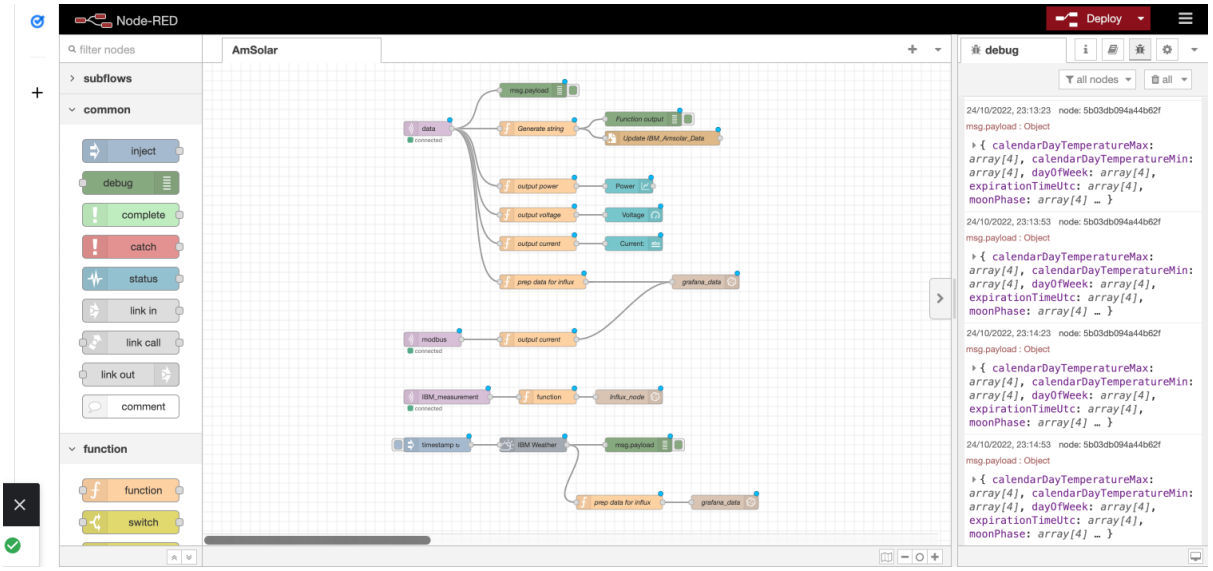
The device used to collect the data was a Raspberry Pi 4, with the instructions to generate the dashboard as follows:

Prerequisites:

- InfluxDB 1.8
- Node-Red 2.2.2
- Grafana 9.1.1

1. The Node-Red flow can be imported with the JSON file, "Node_red_flow_TransXEnergy".
2. Some smart meter and weather data has been collected and exported to the "IBM-InfluxDB-Data.csv" file. This can be imported into an InfluxDB database once it has been installed.
3. The Grafana dashboard can be imported using the "Grafana-Dashboard.json" file.

The resulting Node-Red flow and Grafana dashboard will be as follows:




Node-Red flow


Grafana Dashboard