

**Title:** Stove Use Monitoring Systems (SUM)

**Folder description:** The below zipped folders have been deposited

- Phase 1.zip: Data collected from SUM during phase 1 of the study (02 July 2019 to 30 September 2019)
- Phase 2.zip: Data collected from SUM during phase 2 of the study (02 Oct 2019 to 17 Oct 2019)

**Folder structure:** The zipped folders consist of .csv files containing data for each SUM. The files are labelled as SUM\_[ID].csv, where ID refers to the unique identifier of the SUM.

**File structure:** Each .csv file contains the below data

- Timestamp: Time at which data was collected in unix time format (number of seconds since 1st January 1970). The time zone of data collection is GMT+2. The zero values denote a missing time stamp.
- Thermocouple temperature (C): Temperature measured by thermocouple within a clay stove enclosure in °C. The values range between 0-100°C. A threshold of 5°C is set.
- Si7021 temperature (C): Temperature measured by Si7021 sensor on the surface of a clay stove in °C. The values range between 0-100°C. A threshold of 5°C is set.
- Si7021 humidity (%RH): Humidity measured by Si7021 sensor on the surface of a clay stove in %RH. The values range between 0-100%RH. A threshold of 10%RH is set.
- Battery voltage (V): Voltage of battery powering the SUM in Volts. The values range between 3.3V to 4.2V. At the lower threshold, the battery must be replaced and recharged.
- Error code: Unique prime numbers corresponding to failures in device functionalities. The different error codes are shown below
  - Failure in GSM connection: 2
  - Failure in MQTT connection: 3
  - Failure in MQTT transmission: 5
  - Failure in opening the .csv file on the SD card: 7
  - Failure in writing to the .csv file on the SD card: 11
  - Failure in attaching to a GPRS connection: 13
- Sequence no.: Sequence number of the data packet. The sequence numbers are initialised to 0 at reset of a SUM and incremented by 1 for each new packet.