

## continuous dataset.csv

| Column name       | Description   | Unit                         |
|-------------------|---|------------------------------|
| <b>datetime</b>   | Date-time index corresponding to Panama time-zone UTC-05:00 (index) |                              |
| <b>nat_demand</b> | National electricity load (Target or Dependent variable)            | MWh                          |
| <b>T2M_toc</b>    | Temperature at 2 meters in Tocumen, Panama city                     | °C                           |
| <b>QV2M_toc</b>   | Relative humidity at 2 meters in Tocumen, Panama city               | %                            |
| <b>TQL_toc</b>    | Liquid precipitation in Tocumen, Panama city                        | liters/m <sup>2</sup>        |
| <b>W2M_toc</b>    | Wind Speed at 2 meters in Tocumen, Panama city                      | m/s                          |
| <b>T2M_san</b>    | Temperature at 2 meters in Santiago city                            | °C                           |
| <b>QV2M_san</b>   | Relative humidity at 2 meters in Santiago city                      | %                            |
| <b>TQL_san</b>    | Liquid precipitation in Santiago city                               | l/m <sup>2</sup>             |
| <b>W2M_san</b>    | Wind Speed at 2 meters in Santiago city                             | m/s                          |
| <b>T2M_dav</b>    | Temperature at 2 meters in David city                               | °C                           |
| <b>QV2M_dav</b>   | Relative humidity at 2 meters in David city                         | %                            |
| <b>TQL_dav</b>    | Liquid precipitation in David city                                  | l/m <sup>2</sup>             |
| <b>W2M_dav</b>    | Wind Speed at 2 meters in David city                                | m/s                          |
| <b>Holiday_ID</b> | Unique identification number  | integer                      |
| <b>holiday</b>    | Holiday binary indicator  | 1 = holiday, 0 = regular day |
| <b>school</b>     | School period binary indicator                                      | 1 = school, 0 = vacations    |

## train\_dataframes.xlsx and test\_dataframes.xlsx

| Column name       | Description  | Unit                         |
|-------------------|--|------------------------------|
| <b>datetime</b>   | Date-time index corresponding to Panama time-zone UTC-05:00 (index)            |                              |
| <b>week_X-2</b>   | Load lag from second previous week before forecast                             | MWh                          |
| <b>week_X-3</b>   | Load lag from third previous week before forecast                              | MWh                          |
| <b>week_X-4</b>   | Load lag from fourth previous week before forecast                             | MWh                          |
| <b>MA_X-4</b>     | Load lag moving average, from first till fourth previous weeks before forecast | MWh                          |
| <b>dayOfWeek</b>  | Day of the week, starting on Saturdays   | [1,7]                        |
| <b>weekend</b>    | Weekend binary indicator   | 1 = weekend, 0 = weekday     |
| <b>holiday</b>    | Holiday binary indicator   | 1 = holiday, 0 = regular day |
| <b>Holiday_ID</b> | Unique identification number   | integer                      |
| <b>hourOfDay</b>  | Hour of the day  | [0, 23]                      |
| <b>T2M_toc</b>    | Temperature at 2 meters in Tocumen, Panama city                                | °C                           |
| <b>DEMAND</b>     | National electricity load (Target or Dependent variable)                       | MWh                          |

## weekly pre-dispatch forecast.csv

| Column name          | Description   | Unit |
|----------------------|---|------|
| <b>datetime</b>      | Date-time index corresponding to Panama time-zone UTC-05:00 (index) |      |
| <b>load_forecast</b> | Load forecast from weekly pre-dispatch report                       | MWh  |

## Holidays identification number

| <b>Holiday_ID</b> | <b>Motive (English)</b>               |
|-------------------|---------------------------------------|
| 1                 | New Year                              |
| 2                 | Martyrs' Day                          |
| 3                 | Carnival Saturday                     |
| 4                 | Carnival Sunday                       |
| 5                 | Carnival Monday                       |
| 6                 | Carnival Tuesday                      |
| 7                 | Ash Wednesday                         |
| 8                 | Holy Thursday                         |
| 9                 | Good Friday                           |
| 10                | Holy Saturday                         |
| 11                | Resurrection Sunday                   |
| 12                | Labor Day                             |
| 13                | Foundation of Old Panama              |
| 14                | Separation of Panama from Colombia    |
| 15                | Flag Day                              |
| 16                | Patriotic Commemoration in Colón city |
| 17                | First Cry of Independence             |
| 18                | Independence of Panama from Spain     |
| 19                | Mother's Day                          |
| 20                | Christmas eve                         |
| 21                | Christmas                             |
| 22                | New Year's Eve                        |

## Train-test splits details

The following table specify the 14 dataset suggested splits according to each training/testing pair. An illustration of these splits along the dataset horizon is shown solely for the electricity load variable in the chart below.

| # | Week, month       | Date-time split  | #  | Week, month       | Date-time split  |
|---|-------------------|------------------|----|-------------------|------------------|
| 1 | Week 15, Apr 2019 | 2019-04-13 01:00 | 8  | Week 44, Nov 2019 | 2019-11-02 01:00 |
| 2 | Week 21, May 2019 | 2019-05-25 01:00 | 9  | Week 51, Dec 2019 | 2019-12-21 01:00 |
| 3 | Week 24, Jun 2019 | 2019-06-15 01:00 | 10 | Week 01, Jan 2020 | 2020-01-04 01:00 |
| 4 | Week 29, Jul 2019 | 2019-07-20 01:00 | 11 | Week 06, Feb 2020 | 2020-02-08 01:00 |
| 5 | Week 33, Aug 2019 | 2019-08-17 01:00 | 12 | Week 10, Mar 2020 | 2020-03-07 01:00 |
| 6 | Week 37, Sep 2019 | 2019-09-14 01:00 | 13 | Week 20, May 2020 | 2020-05-16 01:00 |
| 7 | Week 41, Oct 2019 | 2019-10-12 01:00 | 14 | Week 24, Jun 2020 | 2020-06-13 01:00 |

