

# Hands on Exercise for Reference approach

- Task 1: Review the data provided in the excel sheet and identify any quality issues if any
- Task 2: Estimate the emissions for the time series data provided

$$CO_2 emissions = \sum_{all\ fuels} [((Apparent\ consumption * Conv\ factor * Carbon\ content) * 10^{-3} - Excluded\ carbon) * Carbon\ oxidation\ factor * 44/12]$$

$$Apparent\ consumption = Total\ Import - Total\ Export - International\ bunkering - stock$$

$$Conv\ factor = NCV\ value\ from\ the\ table\ for\ the\ respective\ fuel\ type$$

$$Carbon\ content = Carbon\ content\ value\ from\ the\ table\ for\ the\ respective\ fuel\ type$$

$$Carbon\ oxidation\ factor = 1, (assuming\ all\ are\ fuel\ are\ combusting\ at\ 100\%)$$

