



# Yard Emission monitoring for Sustainability

Data analysis of yard trucks

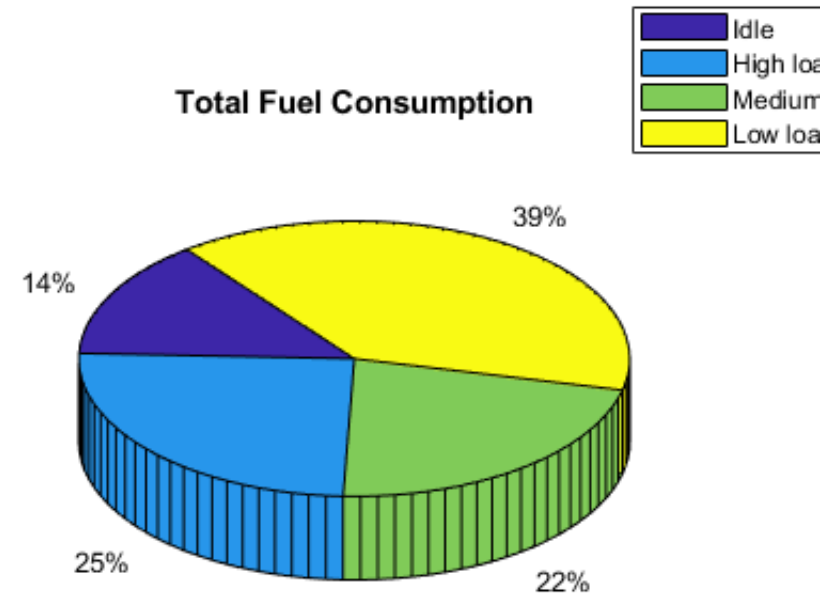
# Goal of the project

'Scale the logged data of one truck to an entire fleet of 10 trucks to estimate the total environmental impact of the trucks.'

Your work will help estimate the possible impact of electrification and or automation of the yard trucks. The environmental and possible financial gains determine whether an alternative driveline is feasible.

## Objectives

- Evaluate the dataset by performing a statistical analysis
  - Are the shifts similar, what is the variance?
  - Are emissions and fuel consumption normally distributed?
  - Is the distance travelled similar, what is the distribution?
  - Etc.
- Scale the results of your analysis to 10 trucks
- Estimate the required battery size if an electric driveline would be implemented.
- Advise on a strategy for charging.
  - Change the battery between shifts? Charge during the night?



# Data set

- Yard truck equipped with [SEMS](#) by TNO
- Truck data logged for 3500km, 90 days
- Features in this dataset:
  - Vehicle speed
  - Engine Load
  - Engine Speed
  - Engine Torque
  - Fuel Consumption
  - CO2 Flow
  - NOx Flow
  - GPS location
- In total there is 500 Mb of csv log files

