



## TECH2C JUNIOR / MID FULLSTACK ENGINEER - CHALLENGE

### Context & Goal

Tech2C is developing a platform that allows members of an Industry Association to track their carbon footprint, using data from various sources. One of these sources is an Excel file exported annually by DGEG (Direção-Geral de Energia e Geologia), which contains energy consumption and emissions data for companies in different sectors.

Your task is to develop a solution that extracts relevant indicators from the provided DGEG Excel file and displays them in a simple web interface.

### What You Need to Do

1. Extract data from an Excel file (provided as an example).
2. Process the data and compute at least 3 relevant indicators, such as:
  - Total CO<sub>2</sub> emissions per year
  - Average energy consumption per company
  - Top 5 companies with the highest emissions
3. Display the extracted indicators in a simple web interface.

### Tech Stack

- You can choose any programming languages and frameworks you are most comfortable with.
- Your solution should have:

✅ A backend to process the Excel file (Node.js, Python, Java, PHP, etc.).

✅ A frontend to display the data (React, Vue.js, Angular, plain HTML+JS, etc.).

### Deliverables

- A GitHub repository with:
  1. Your code for the backend and frontend.
  2. A short README file explaining how to run the project.
- A brief document explaining:
  1. Your approach to extracting and processing data.
  2. The chosen tech stack and why you selected it.



**Bonus (Not Required but Valued)**

- Add a simple graph or chart to visualize one of the indicators.
- Implement basic error handling (e.g., invalid Excel files).
- Make the solution dockerized for easier setup.

**Your work will be assessed based on:**

- ✓ Code organization & best practices
- ✓ Correct data extraction & processing
- ✓ Clarity of documentation
- ✓ Frontend usability & design (basic but functional)

**Time to complete: 5 days**