

## Assignment 2: Decision tools to use for mitigation strategies of the corporates.

This is an individual assignment. The excel sheet attached gives list of hypothetically created 55 hard to abate industry firms, scored on various decarbonization strategies. The scores range from 0-3. 0 if firm is not aware about strategy, 1 with firm is aware, 2 if firm has planned, 3 if firm has acted for particular strategy.

Use data analytics to classify firms into distinct strategic clusters based on their decarbonization actions and interpret how these groups differ in short-term and long-term investment priorities for the climate transition.

### Instructions

1. Run a Cluster Analysis
  - a. Use any suitable clustering technique (mention the reasoning behind your selection) **YOU ARE FREE TO USE ANY SOFTWARE.**
  - b. Decide the number of clusters (minimum two) based on your analysis.
  - c. Use all indicator variables (e.g., efficiency, R&D, CCUS, hydrogen, partnerships, policy) except “Total Score.”
  - d. *Note:* “Total Score” is a derived measure and should not be used for forming clusters.
2. Describe Cluster Characteristics
  - a. Summarize the key features of each cluster.
  - b. Give each cluster an intuitive label, e.g., *Efficiency Leaders, Innovation-Driven Firms, Policy Responders, Laggards.*
3. Strategic Insights
  - a. Based on your findings, recommend:
    - i. Short-term priorities (till 2035): Which strategies or areas should receive investment focus to achieve quick emission reductions?
    - ii. Long-term priorities (toward 2050): Which strategies are critical for deep decarbonization and net-zero transition?

Note: Refer to the decision tools in adaptation and mitigation study material and from mitigation slides shared for the course.

### Output Requirements

- A short report (maximum three pages) including:

- A brief note on clustering method and number of clusters chosen (must include which method of clustering is used and why)
- A table or visual summarizing cluster characteristics.
- A 300–500-word interpretation discussing:
  - Cluster profiles and performance comparison using Total Score.
  - Strategic recommendations for 2025 and 2050.
- Should include detailed analysis - software evidence (a screenshot or output showing clustering results). All the steps used in clustering and assumptions should be included in the document. (NO MARKING, IF THIS STEP IS MISSING).