Graduate Course MBA 605 (Operations Supply Chain Integration):

Research topic on: Carbon capture, utilization, and storage (CCUS)

MBA students engaged in analyzing the operations of a specific green steel company located in India. Such analysis spans over the whole semester as it is allocated 50% of the total course mark and concluded by presentation conducted in class. Details of the assignment is as below.

Kalyani FeRRESTA, India's first green steel company, is used on explaining sustainable operations, green products, green business models, etc… The case focused on environmental sustainability, ESG, and building sustainable enterprises as well as programs focused on skilling and educating students in topics such as environmental, decarbonization or organizations, and how to achieve net-net goals. It highlighted the difficulties involved in transforming hard-to-abate industries into low-carbon industries or net zero industries, it also emphasized the role of trade regulations such as CBAM and the need for green financing in developing countries for taking the planet toward a net-zero goal.

The case created awareness among MBA students about the challenges involved in reducing GHG emissions in hard-to-abate industries, using the example of a steel company. In particular, the case enables students to learn the following aspects:

1. How can organizations in hard-to-abate industries decarbonize their products and processes?
2. What qualifies as GS and what technologies are used to make it?
3. How to manage the various waste streams generated in steel production and create circularity in this industry
4. What is the outlook for Green Steel? How can various trade regulations in developed economies incentivize GS production across the globe?
5. What type of technologies are under development for GS production and what of these technologies are being pursued by steelmakers?

Students were also required to do outside reading on the technological advancements in steel production and answer the following questions:

1. Why did Kalyani Steel embark on a green journey in 2022, when other steelmakers in India weren't? Do you think it was the right strategy and time for an Indian company when there was no regulatory requirement and/or financial support from the government?
2. What strategies and technologies were being explored to decarbonize steel production by leading players in the Indian steel industry in 2023 as per the details provided in CASE A Exhibit 8? Which of these steelmakers succeeded in their journey and what is their current status of technological adoption and green steel production?
3. What method did the Green Steel (GS) Taskforce use to categorize the greenhouse gas (GHS) emissions from their steel production under Scopes 1, 2 &3 and why? Use the information provided in Exhibit 6 to compute the emissions under Scopes 1 & 2, for the crude steel produced using BF-BOF and EAF technologies and the green steel. Why did they not consider Scope 3 emission?

4. What was the strategy used to produce green steel at the Saarloha plant? What were the emission and cost differences between the crude steel produced using BF-BOF and EAF technologies and the green steel product, KALYANI FeRRESTA, as per the equipment/material/energy differences and the yield differences discussed in the case?
5. Do you think Saarloha plant will be able to drum up business for their green steel? If you were Anand Parasramka, how would you price the two green steel products and who would you target? Also, how can you assure clients that these two GS products indeed generate "near zero emissions"?
6. Goyal was in a dilemma regarding which technology he should promote for the next set of investments to expand Kalyani's steel production. What would be your advice to him, given the market scenario, technological advancements, and the regulatory landscape?