Discussion on Use of Coal Briquettes

The discussion centers around the feasibility and challenges of using coal briquettes made from fines in rotary kilns (RK) in the context of the sponge iron industry.

1. Feasibility Concerns:

One participant suggests that briquetting coal fines for use in rotary kilns might not be feasible due to the impact of the rotating movement of the material inside the kiln.

Another participant argues that breaking of briquettes inside the kiln might not be an issue, as broken pieces could be larger than the fines and less likely to be carried away by the waste gases. The primary goal is to make use of the rejected coal fines, which would otherwise accumulate as an environmental problem.

2. Previous Experience and Practices:

Some sponge iron plants are already using RB2 coal without crushing it, with coal sizes up to 30-60 mm for injection and feed sides. This method has been effective without negatively impacting the process. In some cases, coal fines are briquetted and used, but they tend to break up in the kiln and do not remain intact as intended.

Concerns were raised about briquettes disintegrating due to high volatile matter (VM) in the coal, which could cause problems during the combustion process.

3. Specific Plant Considerations: The participants highlight differences in kiln sizes, with larger kilns (350-500 TPD) able to handle larger coal sizes (e.g., minus 30 mm coal for injection), whereas smaller kilns (100 TPD) predominantly use 0-5 mm coal, with concerns about the use of briquettes in such cases. - There are concerns about using fines (0-5 mm) for injection, and whether briquetting could successfully address this issue. Some plants are exploring whether briquettes made from coal fines (0-3/4 mm) could be used effectively.

4. Market Trends: Some suppliers are already providing coal pellets/briquettes made from fines for specific customers, but this practice is still being explored and tested in the industry.

In conclusion, while briquetting of coal fines is a potential solution, the feasibility remains uncertain, especially for smaller kilns and coal with high volatile content. The industry appears to be in the experimental phase, and further research or field visits may be required to assess its viability.