The impact of waste heat recovery unit installation on the operation and control of the raw meal department at Norcem Brevik

Master's thesis number: 64

Introduction and background:

To reach the goals set in the Paris climate agreements the industry must act. As a step in the right direction, at Norcem in Brevik the worlds first full scale carbon capture facility in a cement plant is under construction. With a planned startup in 2024 Norcem is en route to reach their net zero emissions goal by 2030.

The carbon capture amine techology is an energy intensive process and all available waste heat from the cement plant i recovered in 3 waste heat recovery units (WHRU). One WHRU is installed in the raw meal production plant and the installation will change how the plant is operated.

Problem description and objective:

The altered operation of the raw meal production plant post WHRU installation is investigated by

- Modelling the present system and then extending the model to fit WHRU operation
- System variables are implemented in the model to se how they affect the current plant as well as the future one

The objective is to see how this installation will impact the raw meal production capacity and what operational constraints that will limit this capacity.

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