

## Designa ett nytänkande energisystem

Solutions and suggestions to develop the energy efficiency at Wavin

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This bachelor thesis examines four solutions for addressing how the Wavin factory in Eskilstuna can develop their production to be more energy efficient in regards to what gives resilience to the manufacturing processes and is financially advantageous. The four different scenarios are: (i) keeping the current production processes, (ii) replacing the electric boilers with biofuel boilers, (iii) installing solar cells and (iv) installing biofuel boilers and solar cells. The last three scenarios were compared to the first scenario, the current production. After comparing the results, it was shown that the most favorable solution is to implement both 2500 m<sup>2</sup> (462,5 kWp) solar cells and biofuel boilers. This is the least costly scenario over the next 25 years with total savings of 72 MSEK compared to what the existing production would cost during the same time span. This would also reduce Wavin's dependency to the power grid and the rising electricity prices. Therefore, for the Wavin site in Eskilstuna, Wavin should replace the current technical components in the production with the mentioned amount of installed solar cells and biofuel boilers. Firstly, such replacement would mean a less costly production process for the factory. Secondly, it would also mean that Wavin makes financial resources available for other investments in making Wavin a more efficient and sustainable site. Moreover, it was found that the results are more sensitive to the development of electricity prices than biofuel prices. That result indicates that implementing scenario (iv), which means being less dependent on electricity prices, could increase the savings even more in the future, hence the electricity prices are expected to rise.

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