

Energy Cost Reduction in Residential Buildings Using Solar PV Panels, Battery Storage, and Time-Shifting of Flexible Loads

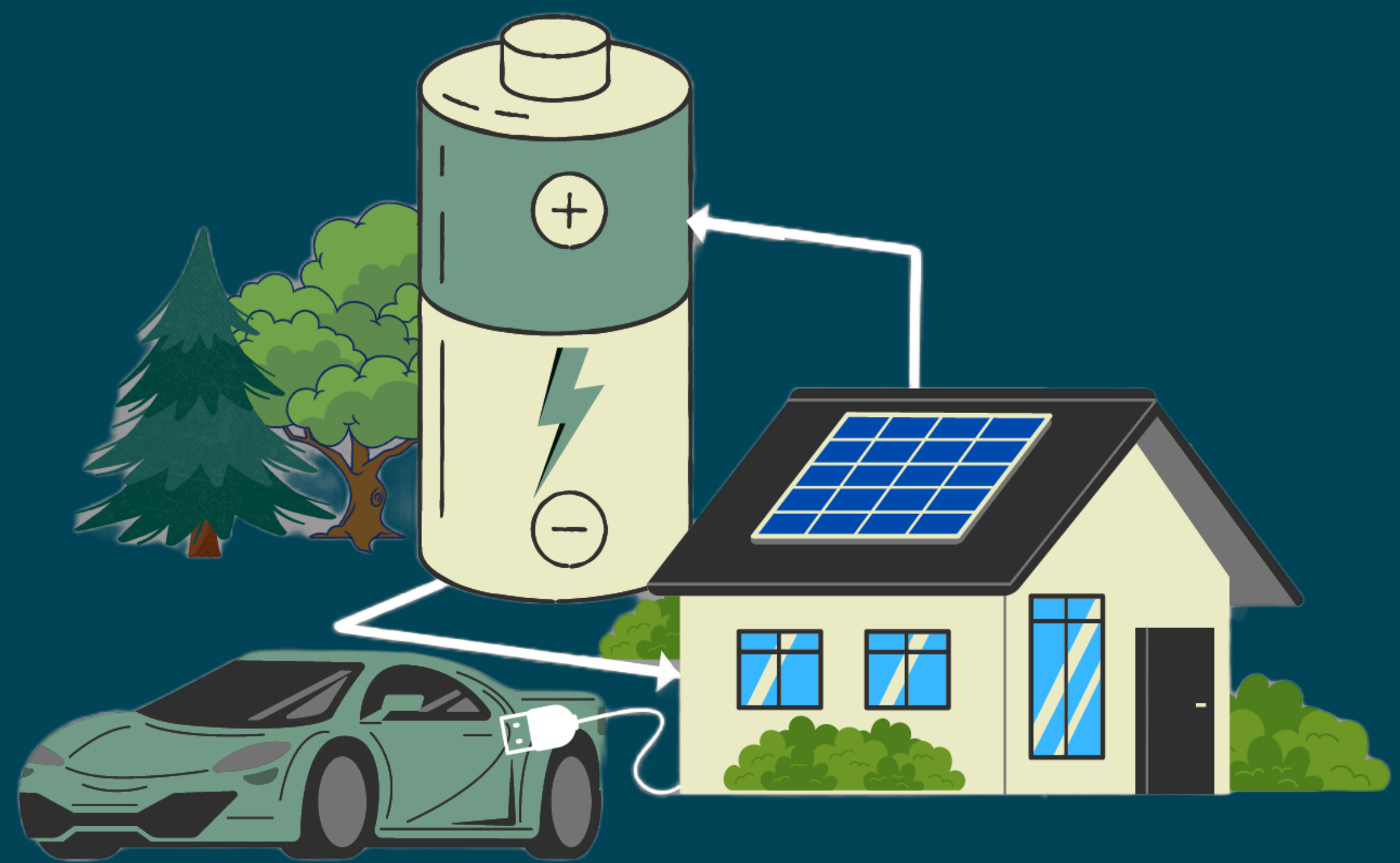
Faculty of Engineering and Science - Department of Mechanical and Marine Engineering
Synne Sulen Gjerde, Stina Birgitte Hagen Jensen and Maria Meland – Energy Technology

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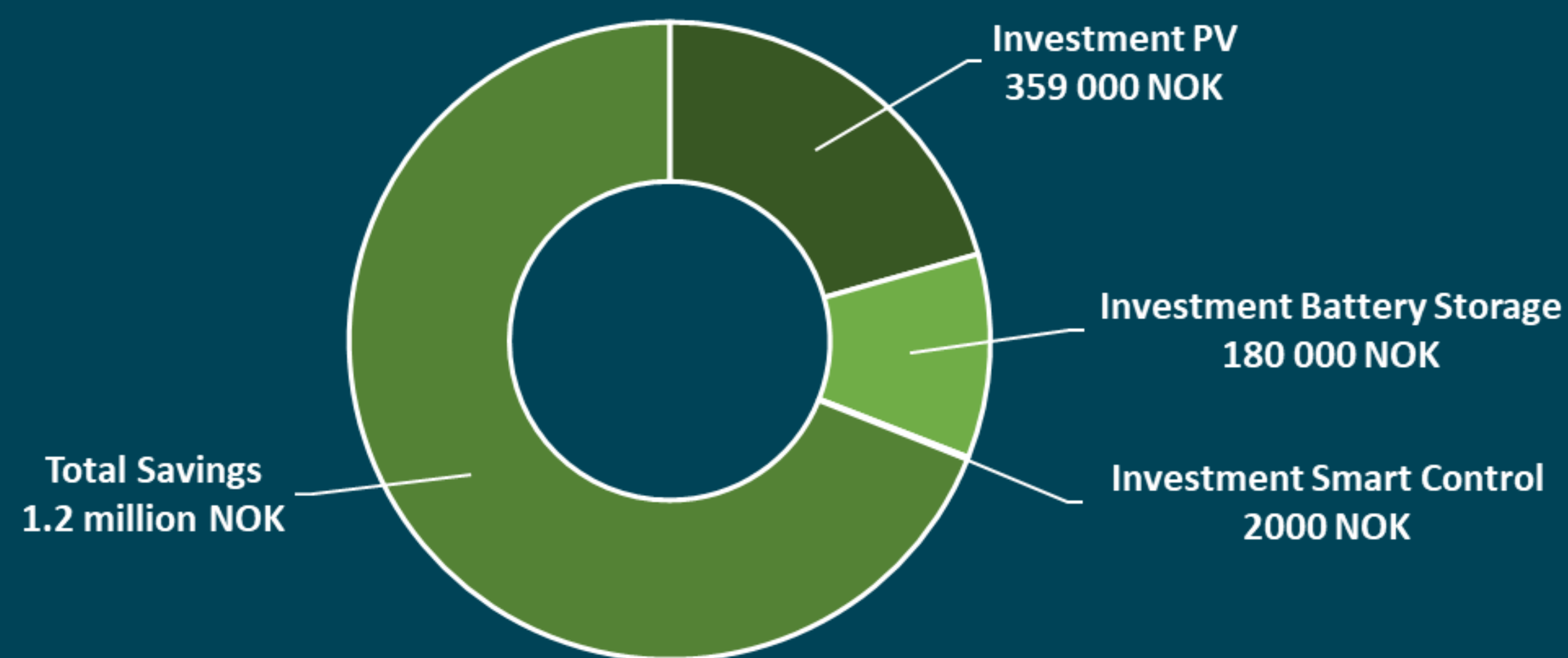
Aim: “Investigate the effects of installing a hybrid energy system with the intention of optimizing usage and reducing annual running costs; including simulations of the potential savings from time shifting flexible loads.”

Background:

Energy costs have skyrocketed in recent years, making it important to examine how and where energy is utilized. Reducing energy costs in households is a growing concern as more households strive to make ends meet.



Comparison of costs



Results:

From investigating two cases, a hybrid system will be applicable for both.

The results also show that the optimal configuration of a hybrid system, in a large family house with a roof facing south, can potentially save **1.2 million NOK!** This is over a period of 25 years.

Conclusion:

From implementing a hybrid system and shifting time of use of flexible loads in a case study, it is shown that the annual running costs can be reduced by **73.4%**.¹

¹ This number is based on the case of a large family house, with a roof facing south, over a period of 25 years.

