

Can solar energy be used to benefit and reduce energy consumption on a dairy farm?

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Aim of the Project

This dissertation aims to explore the feasibility, benefits, and challenges of integrating solar PV systems into an Irish dairy farm.

Research methodology

Research was carried out in order to explore how this technology is currently being used. To explore the different areas in which solar technology is currently being used in agriculture. What information is currently available and understood by the average dairy farmer? To gain this information different tools were used such as case studies to gain insights into real-life examples where solar technology has been used in this industry.

Results

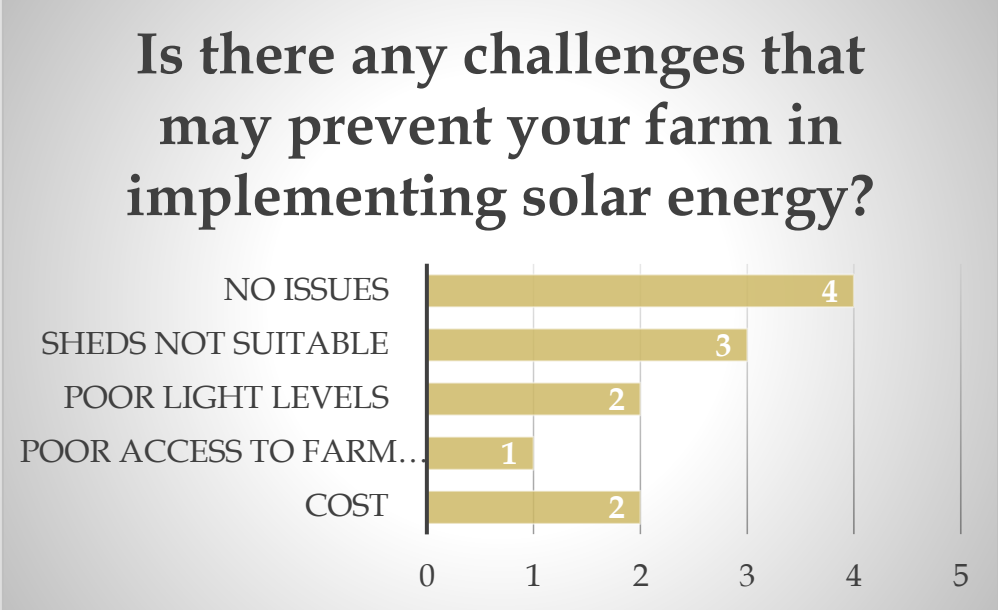
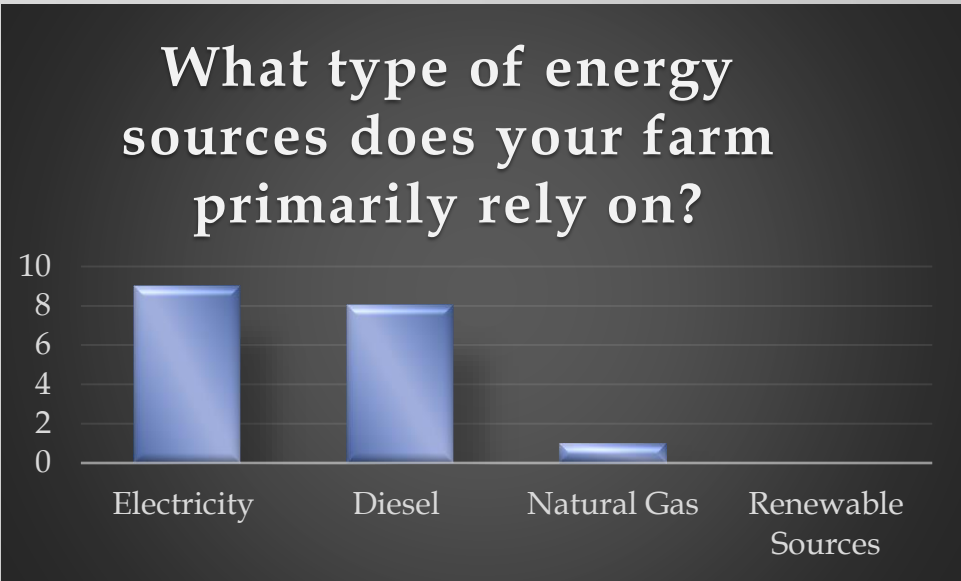


Image of Question carried out in the survey

From the professional surveys that were carried out the graph above shows concerns that the participants had in regard to implementing solar technology on their farms.



Images: Question carried out in survey

The graph above shows a question carried out in the survey that shows the common sources of energy that are used on the dairy farms out of the farmers surveyed none of the farmers use any renewable forms of electricity. The use of diesel and electricity and the highest sources of energy that are used.

Conclusion

From research carried out through case studies and interviews it is seen that solar PV technology is beneficial in regards to producing electricity and reducing a farm's overall electricity requirements. Every farm is different depending on each farm's energy use and requirements as well as each farm's maximum import capacity. Each farm is different and will require a different solar PV system but a solar PV system will improve and reduce operational costs on each farm that it is implemented onto.



Images of solar panels on the roof of a shed of a dairy farm

Objectives

- Explore the benefits of solar energy and research existing information relating to the implementation of solar energy on dairy farms.
- Learn what information is currently available regarding the use of solar energy on dairy farms. How well-informed the typical farmer is about the subject and whether they would use such a system on their farm.
- Compare the common types of solar panels used, their efficiency, and their most productive location to dairy farms.
- Compare and contrast different solar panel infrastructures currently being used in the agriculture industry in Ireland.
- Create a project plan using knowledge and experience gathered in other modules to help the average Irish dairy farmer implement solar PV system on their dairy farm.



Image of Solar panels on a shed roof

Surveys were carried out to gain insights into the current knowledge of the average Irish dairy farmer. Interviews are carried out to gain insights from experts with experience with solar technology to create a greater understanding of what is required to implement a solar PV system.

References

Solar PV Pays on Dairy Farms - Free [online] (2025) available: <https://www.farmersjournal.ie/focus/renewables/solar-pv-pays-on-dairy-farms-692068> [accessed 18 Mar 2025].