

Table of Contents

1. Proposed Research Title	Page 1
2. Abstract	Page 1
3. Introduction and background	Page 1
4. Aims and Objectives	Page 2
5. Literature Review	Page 2
a. Introduction	
b. Methodology	
6. Data Analysis	Page 3
7. Conclusion	Page 3
8. Bibliography	Page 3

1. Proposed Research Title

When do solar panels become cost effective to the end user?

2. Project Overview

The research is aiming to assess at what point will the consumer see a financial saving from the installation of a solar power system. Through the analysis of secondary data, I will be looking to establish the saving point within the lifetime of a solar panel system.

3. Introduction and background

The researcher is beginning to become involved in more environmentally and economical forms of building. Solar panels are an environmentally friendly and cost effective way of generating energy and can be used in the domestic setting. However, it is not well understood and advertised that the cost effectiveness of solar panels is influenced by various factors. A major factor that contributes to how cost effective solar panels are to the consumer is how long it takes to offset the initial costs associated with buying and installing the solar panel system. This research will analyse the costs benefits to the end user, how it will effect their day-to-day lives and when the system becomes beneficial to the household.

It is widely believed and advertised that having solar panels installed at home will save you money on your household bills. What I am looking to review is how this equates when you offset the initial costs put forward from the purchase, set-up and installation of the system itself.

Solar panels are marketed as a way to save money on energy bills. However, when delving further into information online, it becomes clear that some systems only become financially beneficial when they're built to a suitable scale, correct facing garden (southern) and little shade from surrounding buildings or trees. This is important for consumers to know, as it effects the potential cost savings.

4. Aims and Objectives

The aim of this research is to gain a greater understanding of the financial implications of purchasing solar panels.

It's widely understood that solar panels can be used to bring down household energy bills. However, this research aims to investigate when solar panels actually become cost effective to the household, when taking into consideration the upfront costs of purchase and installation etc.

Figures being analysed;

- Cost to supply system.
- Cost to install system.
- Cost to maintain system.
- Lifespan of system.
- Cost saving of an installed system.
- Break even point of the installed system.

5. Literature Review

a. Introduction

Solar panels are used to convert the energy produced by the sun into usable power for the homeowner to pump back in the grid meaning that their meter is lower when they source their own power. (Livescience.com)

The use of solar panels in the domestic setting is used by households to not only produce green energy for themselves but also to receive a financial benefit from the system itself.

b. Methodology

The project will largely be using secondary sources to analyse the costs associated with owning solar panels. The data gathered will be primarily quantitative. The planned sources are data published by manufacturers, installers and energy suppliers. Secondary data will be the main source of information due to the time restraints of this research project.

Various websites use 'calculators' to help the consumer work out how much money solar panels could save them based on solar panel size and location, for example on the Energy Saving Trust website (Energysavingtrust.org). These calculators will be used as an online resource. Other sources, including independent reviewers or advice websites more simply present information about the potential cost savings of solar panels.

Figures obtained from multiple sources, will be analysed using spreadsheets, charts and graphs in order to answer the research question. These figures will be displayed to make it clear the average household situation.

6. Data Analysis

Data showing cost savings from various companies/suppliers will be put into a spreadsheet. From this data, an average can be calculated regarding when solar panel systems become cost effective. Data will include the lifetime of the system, the costs of supply and installation of the system offset with cost saving that is projected by the system.

This will be analysed by various suppliers to establish the average duration that a household requires to own and maintain solar panels at the property to break even from the point of installation.

It will also be important to establish the number of solar panels/space required for the system to be effective. This is because households with more space (for more solar panels) will inevitably be able to save more money over a longer period of time.

7. Conclusion

Figures will be analysed to establish at what point using Solar Panels on a house will bring down monthly bills while taking into consideration the upfront cost of panel installation. The research will analyse the figures to establish how long the system will be installed and what point it becomes beneficial.

These systems have both financial and environmental benefits. This means individual households may choose to install solar panels to be more 'green'. However, the aim of this research is to establish if there is and at what point solar panels become a financial benefit to the user.

With the increase of sustainable energy sources being used by energy suppliers, is there a reason for individual households to look into the purchase and installation of these green energy systems? If there isn't an environmental benefit to the household for using these systems there will need to be a financial advantage otherwise the task of integrating the system becomes a waste of both money and time.

8. Bibliography

Available at: <https://energysavingtrust.org.uk/advice/solar-panels/>

Available at: <https://www.livescience.com/41995-how-do-solar-panels-work.html>