Clever Usages

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INTRODUCTION

Every year, all homeowners receive a bill from their electricity and water companies, where they can see their total consumption. This bill compares to your total consumption for the past year. The bill does not tell why you spent more or less than the previous year. Therefore, you do not know where your spending are, and if you change your routines, you either have to continuous note your consumption down, or wait a whole year before you can see if your changed behavior actually equals savings.
Energistyrelsen has calculated that a family of two adults and two children on average will spend 20% of their total electricity bill on washing clothes.

What if you as a consumer would know exactly which wash program you should choose to save the most energy?

The goal of this project is limited to measuring the washing machine programs and find the most energy efficient, but the desire is to measure the main monitor for both electricity, water and gas.

THEORY

If you could see your spending every day and even every minute, you as a consumer would know where your usage is, and thus be prepared to change your behavior.

Once I have collected data on each program, it is simple to convert it to DKK as the average Dane find easier to relate to the crowns above kWh and m^3.

METHODS

I have chosen to use a nonintrusive way to collect the necessary data. The method measures the pulses for a given LED, in this case 3200 impulses per kWh and that connects to the washing machine. At the same time, I put a water meter on the washing machines tap, which counts every time I have spent a liter of water.

Collected data is sent to a database where I convert from kWh to DKK, because the average Dane cannot relate to the 1 kWh is a lot or not.

CONCLUSION

The result of the collected data showed that the wash program which was called "PowerSave" was the most expensive, which I previously had used almost every time. If I changed the program to "Super Eco" I would reduce my energy consumption by about 80%.

What if you could save on your bills and the energy just by switching a program?