



# Mastertest

## Design Rationale

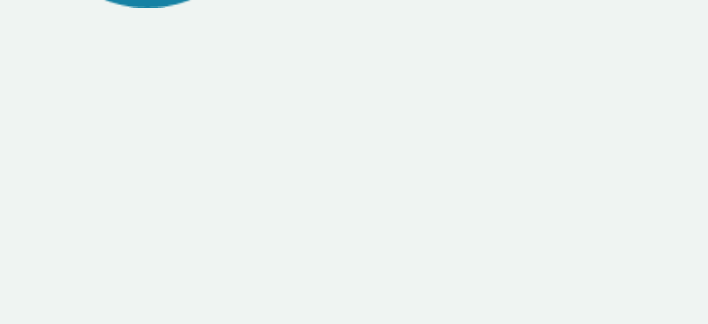
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LXD minor  
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## Solar panels

For the final project for the user experience minor I have chosen the case about solar panels. In collaboration with Circulate I have created a system and matching product based on the community I have formed within my environment. A complete document including my research, iteration and thought process can be found on this link:

<https://paper.dropbox.com/doc/Product-Biography-41rqR28GZ9pYQRJrLVij#:uid=515979554295919540788952&h2=Tone-of-voice>

In this document I will be linking to the concerned topics in the linked above Product Biography.



## Case

As said before the case revolved around solar panels. Green energy has a growing popularity and are prepared to make changes for a greener environment. On example of this are energy sharing neighborhoods. These neighborhoods consist of multiple households running partly or fully on self produced, green energy. This is generally more attractive to a group that is already prepared to sacrifice luxury to lessen their ecological footprint. For my case I thought it would be interesting to focus on the ordinary user instead. The user that would consider a greener lifestyle but doesn't want to spend a lot of money or time to do so.

More about energy sharing neighborhoods under: [What are energy sharing communities?](#)

## Design challenge

How can I convince the ordinary user to change to green energy and motivate them to keep their energy usage low?

## Target group

The product is focussed on people who are interested in green energy but might not have the money laying around for such an investment. They are very economical oriented and this will be a focus in the product. The target group consists of young adults and new home owners who want to get solar panels but don't have the money saved up yet to buy them.



More about target group under: [Persona](#)

## Goals

- User:**
  - To keep their energy usage lower than their production.
  - To save left over energy to sell and make profit from.
- Business:**
  - To get more people to use green energy.
  - To get more people to become part of their energy community.
- Behavioral:**
  - To help people keep their energy usage low and make profit.

## Concept

### The loan

When a user becomes a homeowner they will need to choose an energy supplier. Instead of going for grey energy, they are looking into green energy; solar energy to be exact. They don't have the budget to lay down the whole investment at once right now, that's why they take up the loan that Solar Trade provides. This way they have to pay an amount annually until they have payed the full amount of the panels back with a max of 15 years. Within this time they will have saved enough money on reduced regular energy costs, they will have earned the investment back.

### Get started

When installing the solar panels from Solar Trade the user receives a dashboard for in their home and a code to create an account for the marketplace application.

If a user already has solar panels, they can join Solar Trade for a fee to cover the costs of the dashboard and make some profit.

As soon as the solar panels are installed and the system is set-up, the dashboard and app are ready to be used. The user downloads the app and follows the set up steps to create an account.

### Daily use

The user can now use the energy produced by their solar panels. When the user want to do a chore they walk to the dashboard which will light up when they near it. The light indication around the dashboard shows how full the battery is. When it's almost full the user knows they can use energy.

Details about how much they can use can be found on the dashboard under your energy

After confirming they can do the chore they go ahead and do it.

If the user doesn't have enough energy left, they can choose to do nothing and pass to another green energy supplier, or they can buy some energy from other users via the marketplace app.

### Buying / selling

If the user has been economical with their energy and has left over, they can sell this in the marketplace app.

When installing the solar panels, they received a code which allows the user to create an account linked to their energy system. They go to the selling option and choose an amount of energy and a price for it. When it is sold, they receive a message and the money goes to their "piggy-bank" in the app. From this they can choose to get the money payed out whenever they want.

Watch the product video to get a better idea of context of use.  
<https://youtu.be/THXJScyvSsY>

## Dashboard



- Indicator on the left shows how full battery is so the user can see in a quick glance if they can use it.

- Your energy shows precise production and consumption pulling tasks the user can do with this.

- Investment earned back to call on the users economical motivation and stimulate to not use much more then they produce to save more money.

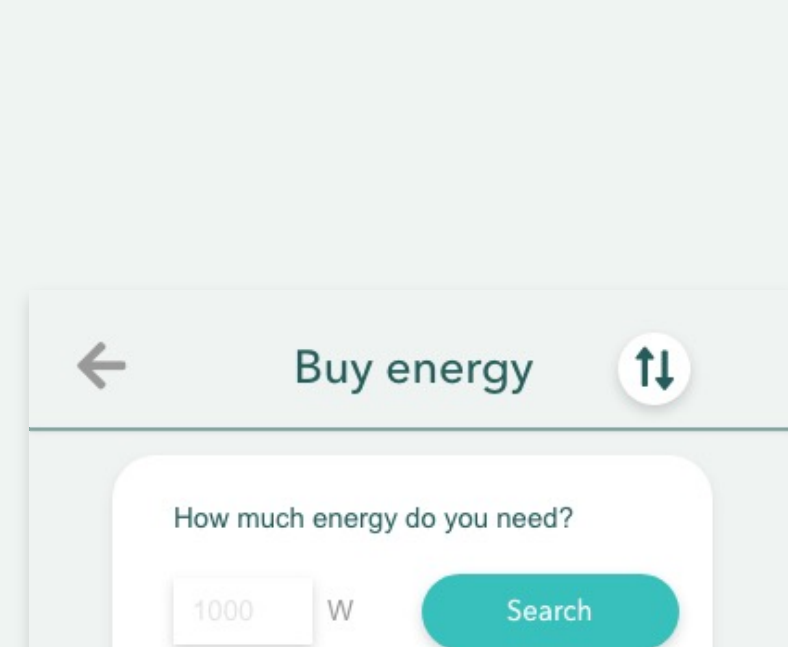
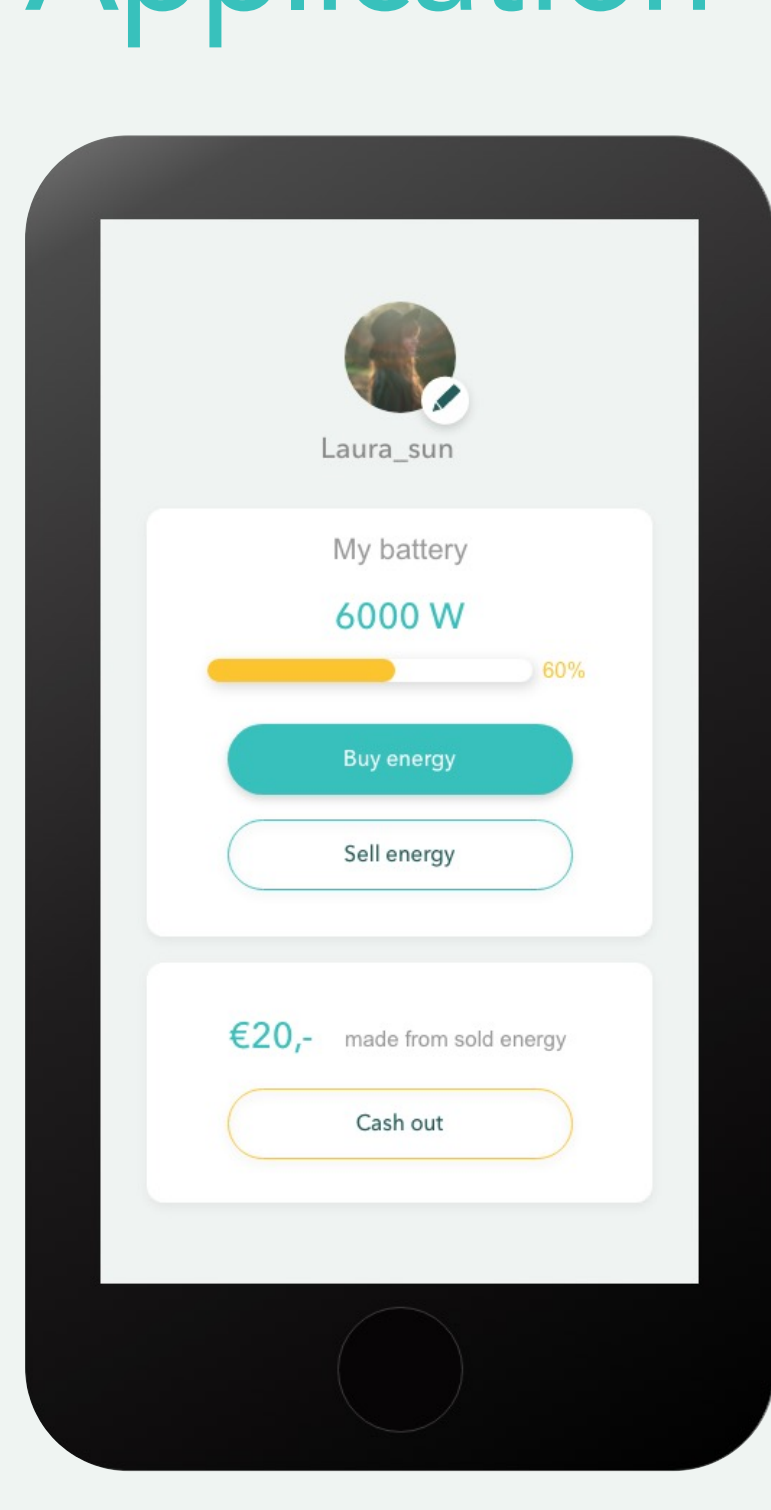
- Consumption to shows usage and consumption on daily, weekly, monthly and yearly base.

## Application

- The user has a profile which contains a self chosen username and profile picture so they have control of how much of their private information is shared.

- My battery shows how much energy there is left in the battery and an option to sell some of it or buy energy from others.

- A digital piggybank that contains the money the user has made which they can cash out any time they like.



**Buying energy**

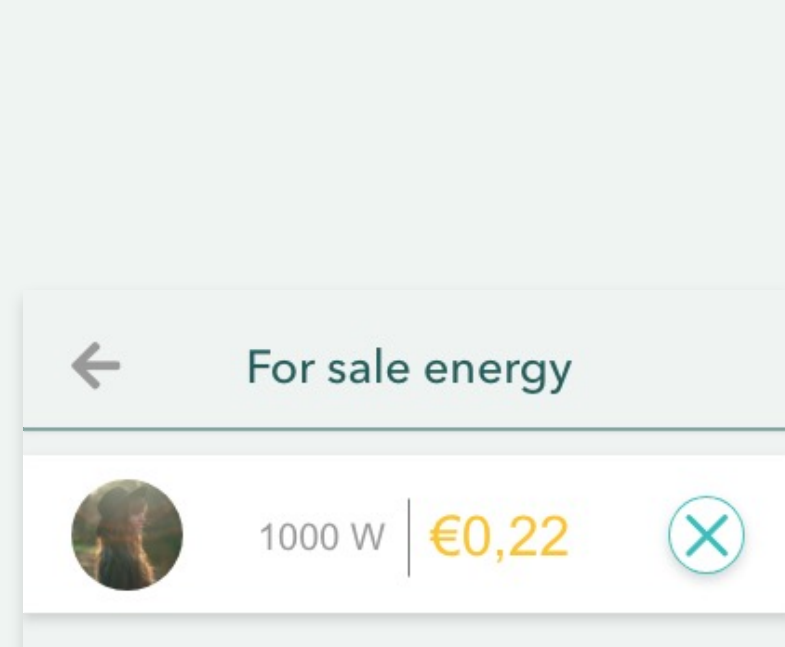
When buying energy the user first sees this overview of all the energy that is up for sale in the order that it is sorted.

They can filter by choosing an amount and pressing search.

The user can sort by clicking on the icon and choosing a sort option.

They can refresh the page for newer added sales by simply swiping down.

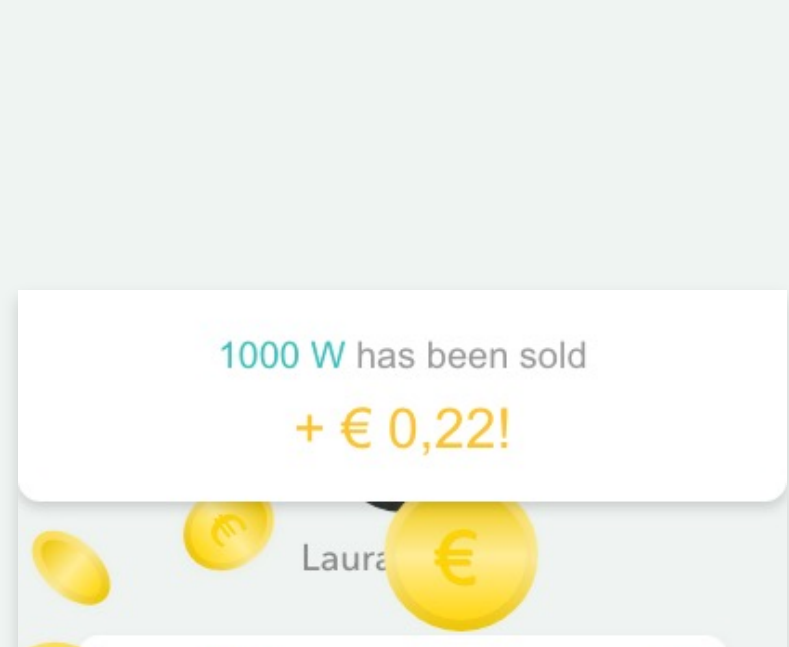
To buy, they simply click on a sale that they like and pay for it with either money from the piggybank that they made, or with internet banking.



**Selling energy**

To sell energy, the user goes to this page where they can add a new sale or delete one. When adding one they need to put in an amount, which of course can't be more than they have in their battery, and an amount of money.

If the user is using much of their energy and the battery goes under 50%, the sale will automatically be deleted.



**Sold energy**

After making a sale, the amount of money will be added to the piggybank and the battery loses W. To celebrate the sale, a money rain animation will play and end the experience with delight.

More about the screens and final product under: [Final product](#)

## Conclusion

Since this was a large and technical case there are still many feature that could be worked out for future celebrations. These have added to the Product Biography. For now the goals have been met in the product and the design challenge: "How can I convince the ordinary user to change to green energy and motivate them to keep their energy usage low?" has been solved. The loan gives every user, no matter their income and savings. The economical aspects make it more appealing for the user to me more thoughtful of their energy consumption, without forcing it upon them or leaving them in the dark when they go overboard.