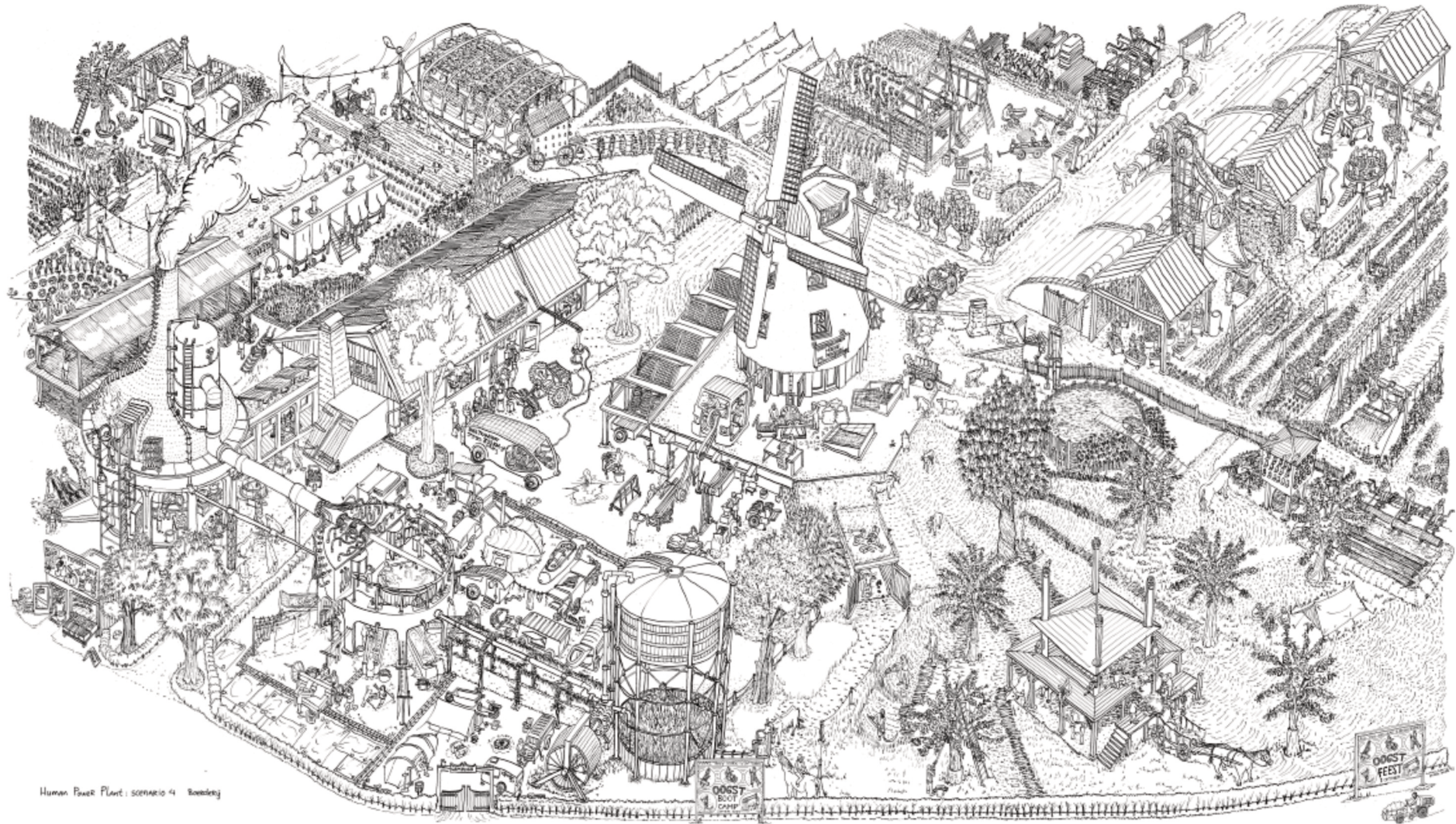


MDD EMERGING ECOLOGIES PLAYGROUND

Lectoraat CixD – Huis van de Toekomst



Human Power Plant: scenario 4 - Breda

OOGST
BOOT
CAMP

OOGST
FEEST

MDD EMERGING ECOLOGIES PLAYGROUND

Lectoraat CixD – Huis van de Toekomst

Brief

Transition-Scapes and Huis van de Toekomst have recently developed a set of scenarios for the building block they are housed in, located in the J.J.P. Oud block at the Visserijplein in Rotterdam. Half of the ground floor of this building (see Figure 2) has been temporarily granted to Huis van de Toekomst by the housing corporation as a place for growing their ideas about generating and sharing energy. They are now looking to create initial prototypes in the empty homes /rooms available here to draw others into their work. For example, they imagine things like a communal kitchen, communal birth room, and wake room (a place to visit the recently deceased). They want to explore these ideas by making them more tangible for the community, public and policy makers, as a way of garnering understanding, support and conversation around these radical ideas. In essence, What does a human-powered birth room actually look like? What makes it different from one fueled by gas? This is difficult for most people to actually visualize in a tangible way.

Moreover, Huis van de Toekomst and Transition-Scapes are also developing a new value system to represent the wellbeing and functioning of this new kind of energy community, one that represents alternative currencies to money. These values are (in Dutch): uur, huur, buur, and vuur (or, hours, rent, neighbours, and happiness). They are

interested in how these four metrics could be represented or even measured in each room. How can one, for example, measure happiness? These metrics could ultimately end up in an interactive model of the whole block – developed by the team of Transition-Scapes – to make the interaction between the four values visible and understandable for residents to apply, and for policy makers to learn from.

So then, the overall design questions for this brief are:

1. How could we prototype a human-powered room at the Huis van de Toekomst, or, make their vision more tangible for others?
2. How can this room/prototype also relate to their new value system of uur-huur-buur- vuur?

Guiding principles for the ecological designer

Let us describe some ideas or principles to help frame challenges from the perspective of *Emerging Ecologies*.

Perhaps not all of these are speak to you, but we hope a few might help with the difficult task of confronting complexity in your own design work:

Digging Where You Stand is the idea of working and researching in your own context with your own tools and own means. One does not need to reinvent themselves as a climate activist or a historian, but see what skills, people, resources and tools they already have at their disposal and start from there.

Digging Where You Stand asks you do work on difficult questions from your own perspective: What can you do as a designer to respond meaningfully to the climate emergency? Or as a researcher, teacher, business owner or chef? It acknowledges that some situations cannot be addressed from a single perspective. We all have something unique to offer. As Arthur Ashe once said “Start where you are. Use what you have. Do what you can”.

Predicaments not Problems. “A problem calls for a solution. A

predicament, by contrast, has no solution. Faced with a predicament, people come up with responses or adaptations. Those responses may succeed, they may fail, or they may fall somewhere in between, but none of them “solves” the predicament, in the sense that none of them makes it go away.”

A Better Crisis is the idea that a crisis needn’t be an unscheduled, unmanaged or chaotic situation. That one can learn to live, care and thrive in a *polycrisis* situation, that one can strive to become a better self and find a moral compass in a situation of crisis even if this doesn’t lead to a recovery from that crisis. Our reckoning with a situation of crisis can give rise to what is most beautiful and profound in human culture.

Embrace radical uncertainty. It’s okay to not know. We live in a strange, precarious time that demands difficult things from us. We might not have the answers. Change and uncertainty are inevitable and accepting them as part of the process makes them easier to withstand and work with.

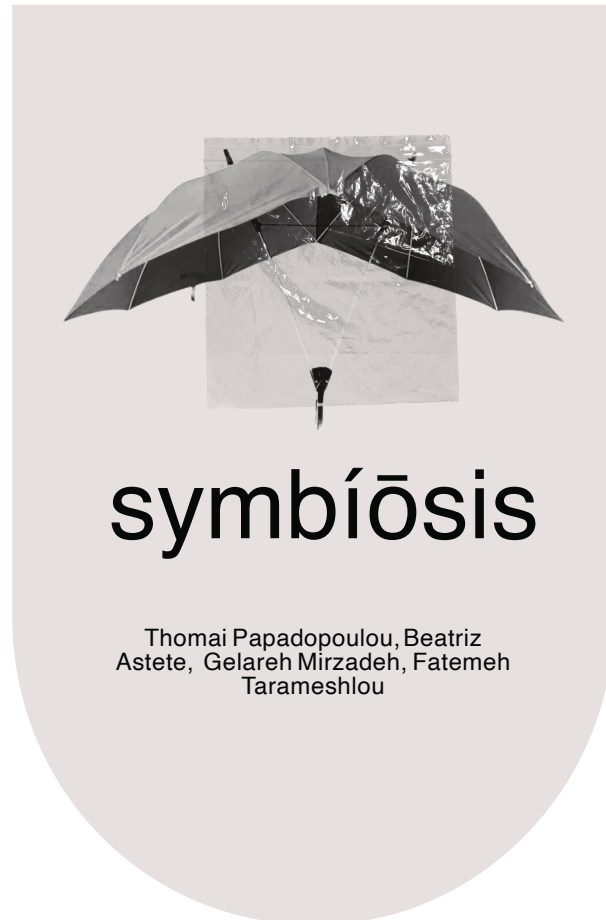
Asymmetries of power. Not everybody has the same level of responsibility or level of impact with their actions. For an individual it might be quite a large lifestyle change to become vegetarian, with minuscule world-impact in comparison to the impact a bank would have to divest from fossil fuels. These asymmetries exist

MDD EMERGING ECOLOGIES PLAYGROUND

Lectoraat CixD – Huis van de Toekomst

and must be made explicit in our work. If not, we contribute to their perpetuity. Different levels of power must have different levels of accountability.

Non-human agencies. We coexist with millions of other lifeforms and terraforming processes, just as evolved and well adapted to this planet as humans. Some of these are naturally occurring species from which we can draw inspiration from and be humbled by.



To make the House's of the Future vision tangible, we translated spatially the term community. We designed a framework that provides the principles to build prototypes that can be used only by two or more participants. Our focus is on creating a communal space that people should actually collaborate and interact in order to accomplish tasks.

Our thought is that, nowadays, we talk about community and team work but in reality are all working and living individually. Our main goal is to promote teamwork, initially by facilitating discussions between the residents and ultimately by cultivating the thoughts and discussion regarding the benefits of team work and collaboration.

MDD EMERGING ECOLOGIES PLAYGROUND

Lectoraat CixD – Huis van de Toekomst

In our study we focused on daily objects that people in the community use often and we proposed a new approach. Use often and we proposed a new approach.

The questions that led our work were: *What would happen if all the objects that surround them would be replaced by artifacts that require two or more people in order to work? Would that swift in the building environment could also provoke a swift in thinking towards teamwork?*

One of our first experimentation was the umbrella. We basically took two normal umbrellas and sewed them together and then we tested it with users. Users' reactions were really positive and some of them even stated that: "Finally! I always had this struggle when I tried to share my umbrella with someone else. Always someone ends up wet"



MDD EMERGING ECOLOGIES PLAYGROUND

Lectoraat CixD – Huis van de Toekomst



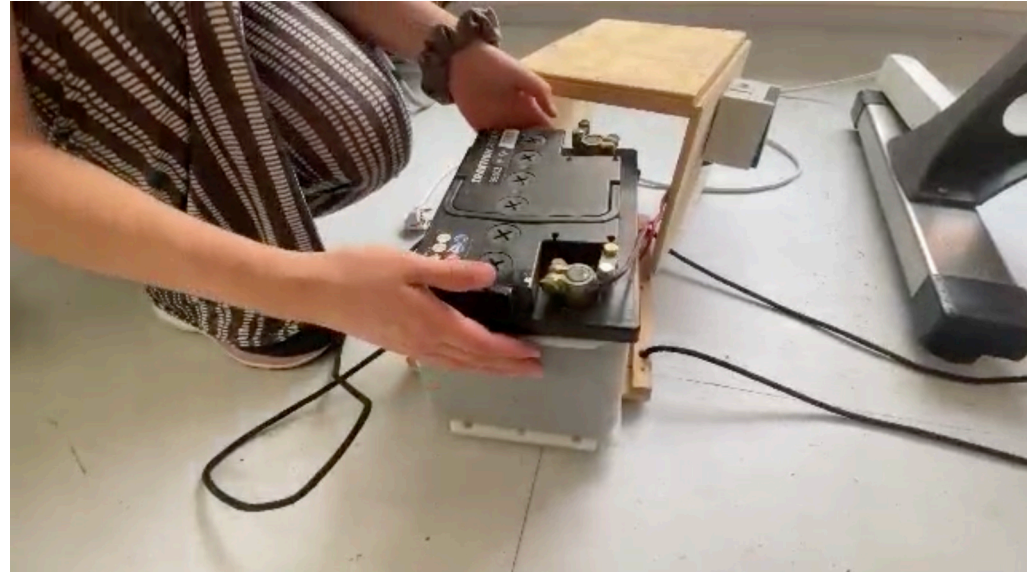
MDD EMERGING ECOLOGIES PLAYGROUND

Lectoraat CixD – Huis van de Toekomst



Second Iteration

For a second presentation we chose our floss candy machine prototype and developed it further. This time we figured that we wanted to align the prototype more closely to the values of Human Power. We went back to the HvdT and used their static bicycle, which doubles as a DIY human power generation device. We took a repurposed car battery which would be enough to power our candy floss machine for the duration for an exhibition and we charged it using the communal bicycle power generator in the HvdT. It turned out that this job required hours and hours of cycling so we asked a group of people to help us do this, in the first example of a Battery Charged with Collective Human Power. This power was stored, taken by train back to our exhibition booth in Amsterdam and we used it to power the candy floss machine in the final presentation of our prototype.



MDD EMERGING ECOLOGIES PLAYGROUND

Lectoraat CixD – Huis van de Toekomst



MDD EMERGING ECOLOGIES PLAYGROUND

Lectoraat CixD – Huis van de Toekomst





51°54'31"N
4°26'27"E

Bospolder/Tussendijk
Rotterdam, Netherlands

Poems to Eneco

A project by Josefina Vizcarra Meza, Nesrin
Civelek, Priyanka Nagar & Maria Barbulovic

Week 1

Week 2

GETTING BRIEF

VISIT AT HvdT

BRIEF ALIGNMENT W/ STUDENTS

1ST CRIT

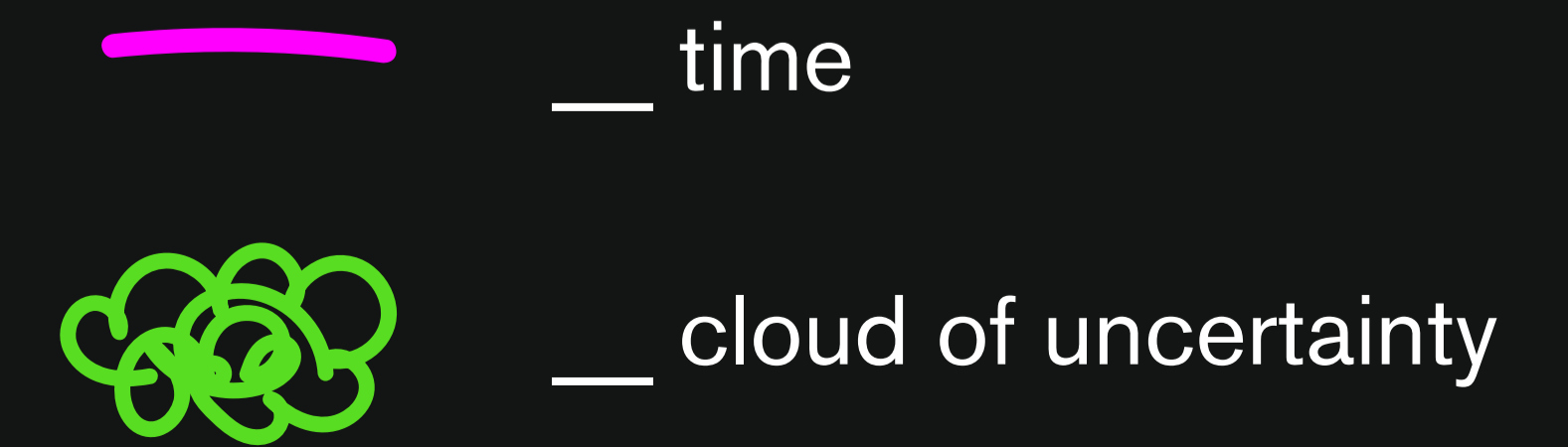
TEAM-MEET

ClxD PRESENTATION

STARTING DESK RESEARCH

Timeline

This is a chronological representation of the project to make our process easier to understand. Note: Although the timeline appears to be linear, the process was not.



Week 3

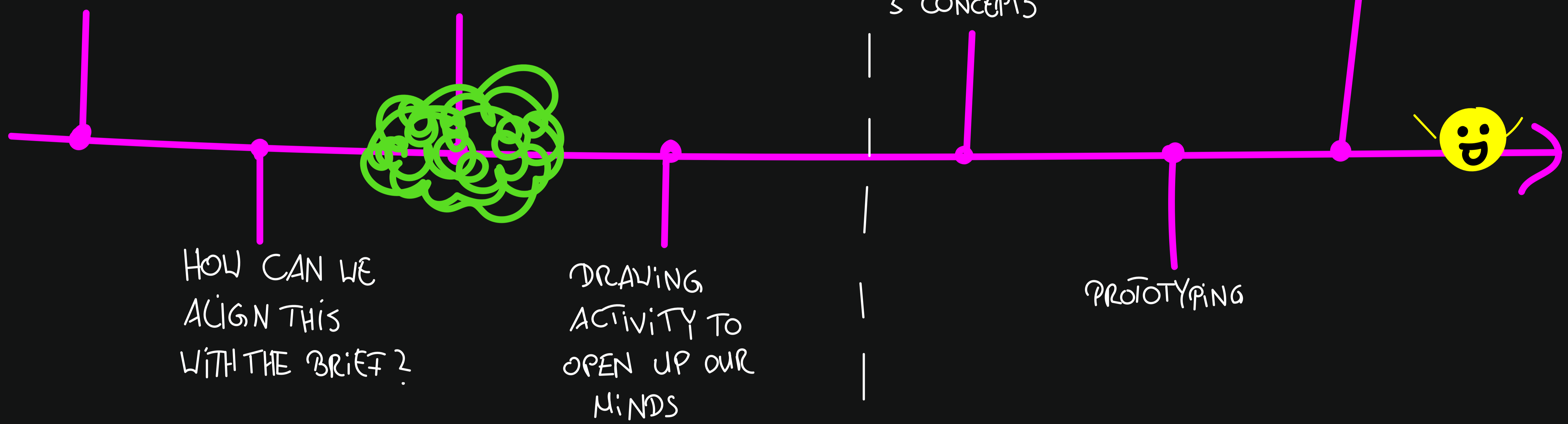
Week 4

WHAT DO WE WANT??

CRIT → WE GOT STUCK & NEED TO COMMIT

NARROWING DOWN TO 3 CONCEPTS




CRITS



HOW CAN WE ALIGN THIS WITH THE BRIEF?

DRAWING ACTIVITY TO OPEN UP OUR MINDS

PROTOTYPING

-  ___ feeling good
-  ___ time
-  ___ cloud of uncertainty

Week 5&6

Week 7

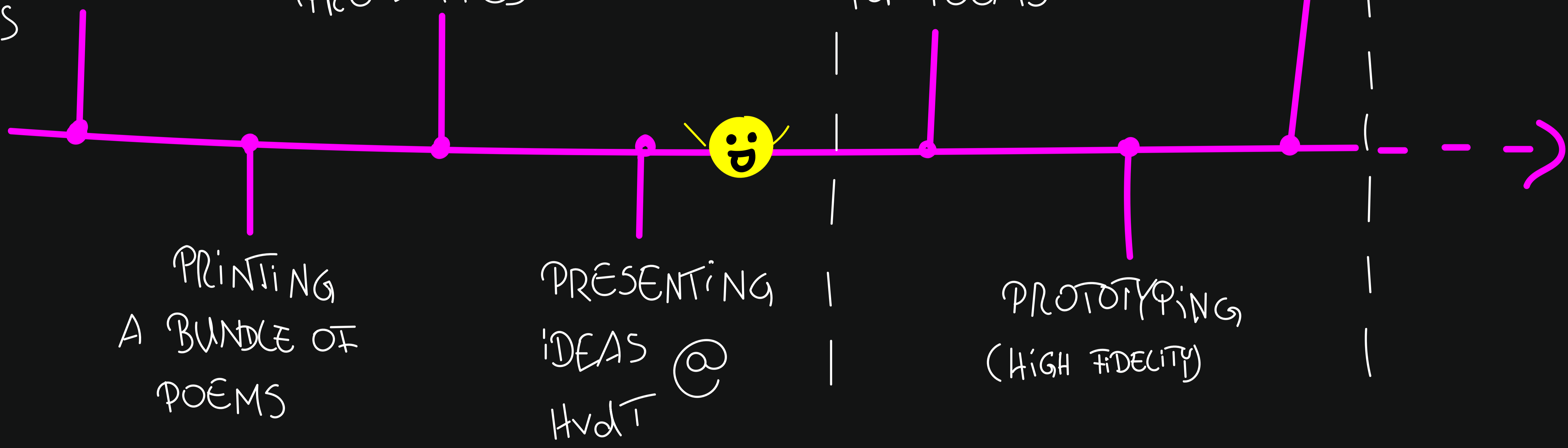
NARROWING
DOWN TO 2
IDEAS


BUILDING
PROTOTYPES


DECISION
FOR POEMS

FEEDBACK
FEAST

AFTER-
LIFE



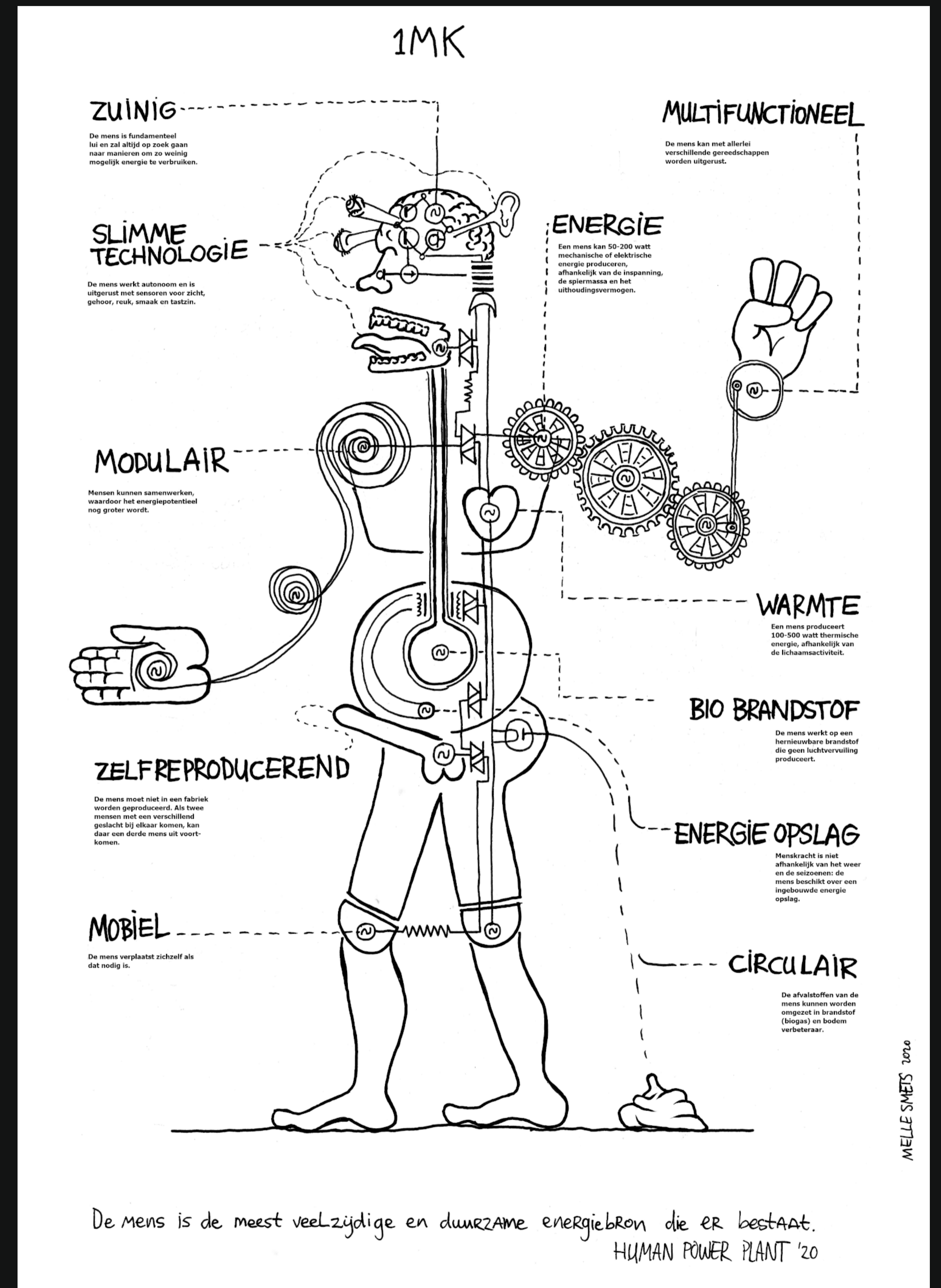
 ___ feeling good

 ___ time

Brief

The Bospolder/Tussendijk (BoTu) region in Rotterdam is one of the poorest neighbourhoods in the Netherlands (Gee, 2021). Within that neighbourhood, the Huis van de Toekomst (HvdT) is situated. It is a kind of experimental space where the possibilities of human power production are being explored. Their goal is it to develop a building block into an energy community that is entirely free of fossil fuels. The specific question for us was: How could we prototype a human- powered room at the Huis van de Toekomst in Rotterdam, or, make their vision more tangible?

FS 1



How do *we* define human power?

After receiving the brief, we first had to ask ourselves what the term „human-powered“ means to us. We quickly came to the conclusion that it not only means using human muscle power. It also can mean being more powerful in doing activities as a community rather than as individuals. This came also clear to us when we went to Rotterdam and got a guided tour around the area of BoTu with Melle Smets. He not only showed us a coffee grinder that is driven by human muscle power, but also a community kitchen they are currently building.

SDL 2

FS 1



Our approach

FS 1

For various reasons, the visit was a turning point for me. It became clear to me that the situation is way more complex than I thought. We learned that the municipality of Rotterdam is limiting the possibilities a lot by restrictions (e.g. no fixed solar panels allowed).

RA 2

But what stood out for me the most was what Melle told us about the contract they have with a heating provider called Eneco. Apparently, Eneco signed a contract with the municipality that allows them to be the only heating provider in the BoTu region, leaving them with a monopoly and solitary control over regional infrastructure. Eneco is using this to profile themselves as a sustainable energy company (Eneco, 2024).



CI 3

It also says that residents are obliged to keep their contracts with Eneco which makes it practically impossible and even illegal for the HvdT to get off-grid for the years that contract stays in place.

We felt uncertain. Is it really the right thing to just accept this situation?

- by keeping the panels mobile, they can outplay the rules set by the municipality

Our approach

FS 1

After our visit, we got a presentation by Linda Vlassenrood who is part of the ClxD research group at our university. Her group's project was supposed to be the base of our work. After having a workshop at the HvdT, they came up with a concept where several rooms with different purposes are being set up for the residents. This is aiming towards strengthening the community within the region.

CI 3

When we heard the presentation, we had some mixed feelings. During our visit we were told not to interview the residents because it would be ethically questionable to do so. Many of the residents are relying on social aid and do not speak English. This means that they are careful when it comes

RA 2



to sharing information with strangers. While we completely understood the situation, it started nettling us: Why should we design something that requires the residents (who already have enough struggles) to change their habits? And all of that while companies like Eneco can do what they want?

CI 3

RA 2

FS 1





- one of the concept rooms designed by the ClxD research group (Vlassenrood, 2023)

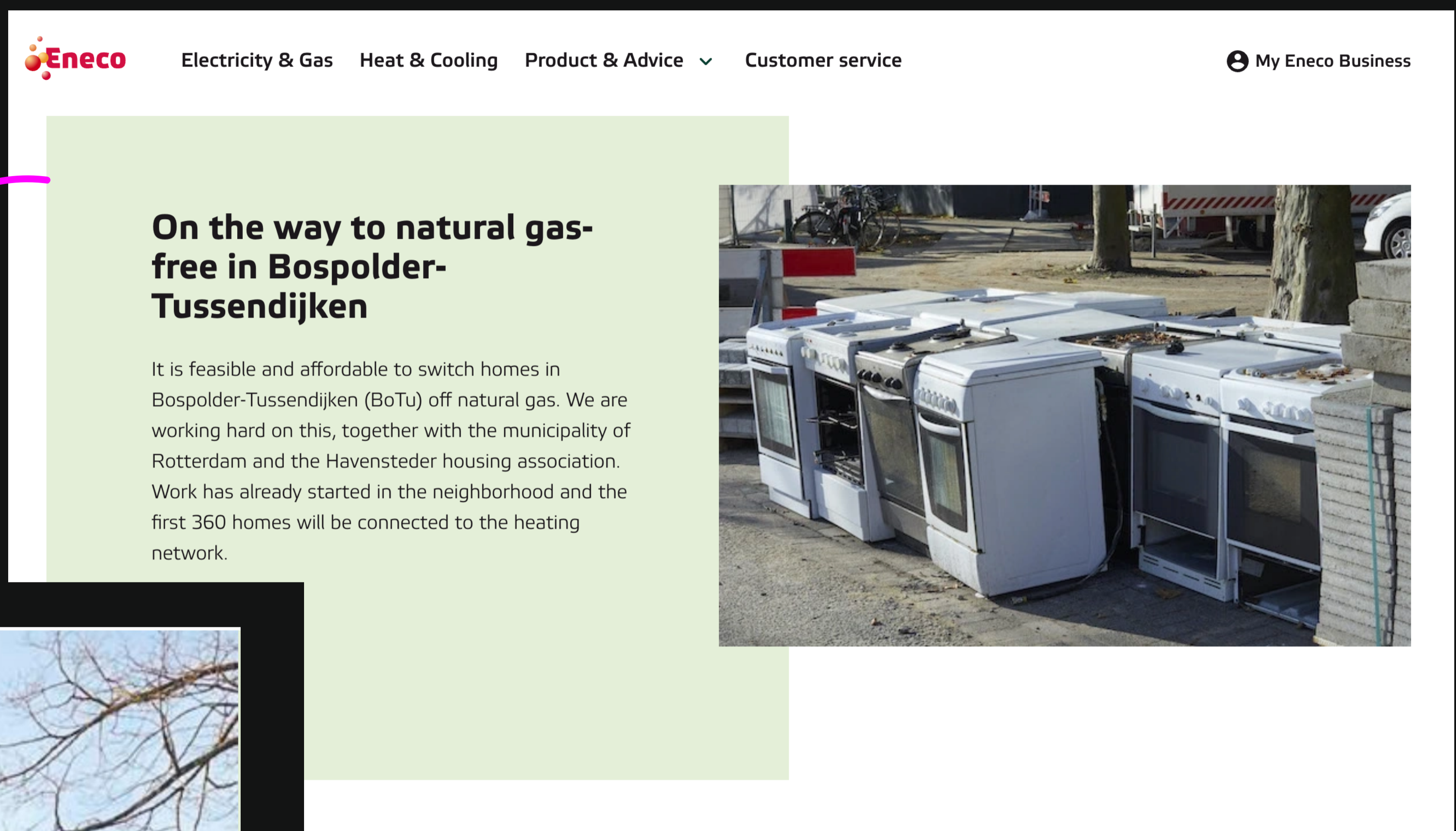
affordable
with no competition?

really?

pots &
pans?

Our common goals


-  Natural gas-free district
-  Residents central
-  Affordable solutions
-  Intensive cooperation



Eneco Electricity & Gas Heat & Cooling Product & Advice Customer service My Eneco Business

On the way to natural gas-free in Bospolder-Tussendijken

It is feasible and affordable to switch homes in Bospolder-Tussendijken (BoTu) off natural gas. We are working hard on this, together with the municipality of Rotterdam and the Havensteder housing association. Work has already started in the neighborhood and the first 360 homes will be connected to the heating network.




- screenshots of Eneco's official website showcasing their plans and taken actions for the region of BoTu (Eneco, 2024)

FS 1

FS 3



Stakeholder mapping

After getting a lot of new information, we felt like it was time to sort things out. I could see that every group working on this brief was struggling, so I suggested to do a session with all of us to gather all the knowledge we had so far. These were the results.

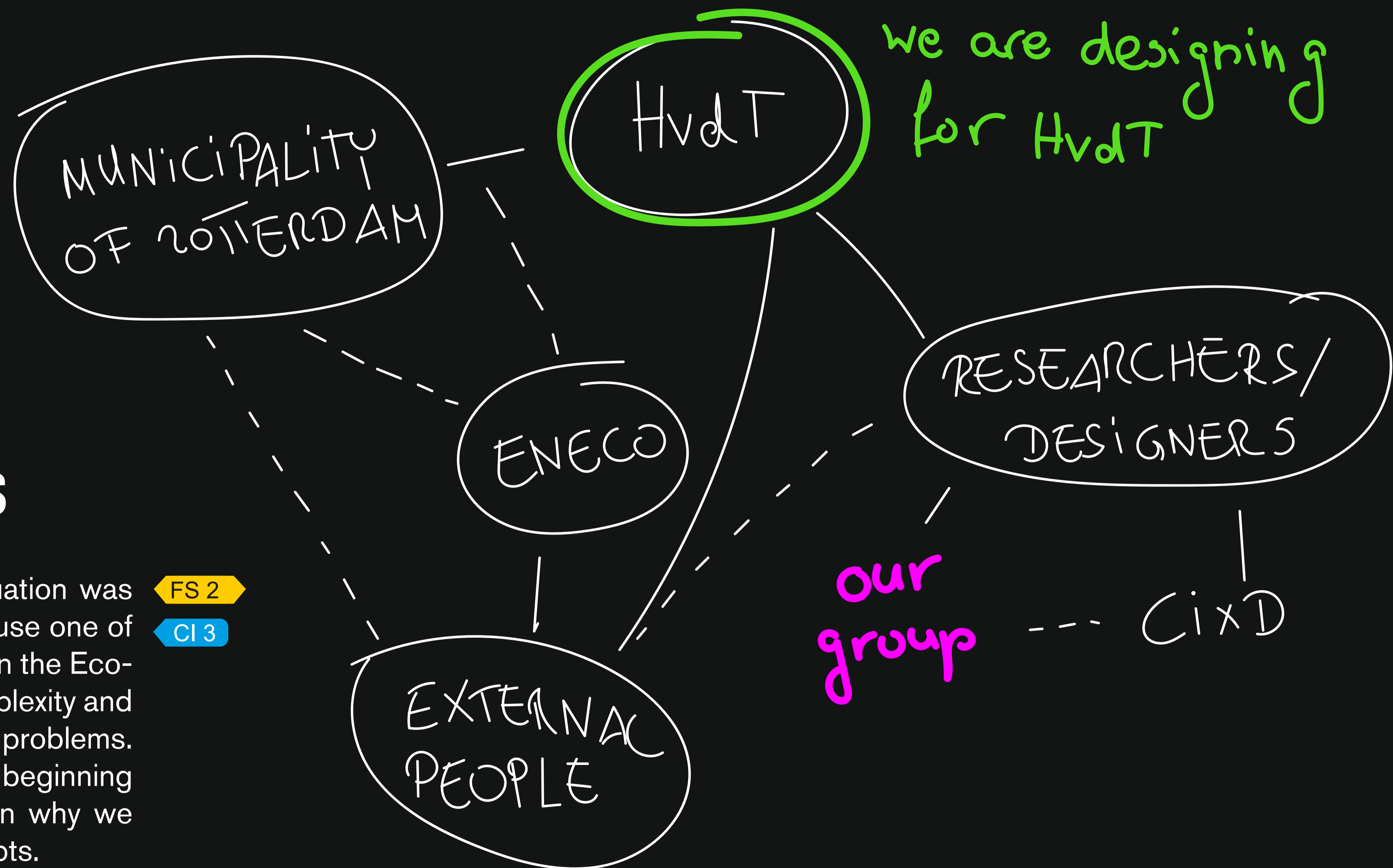
FS 2

— direct influence
 - - - indirect influence

Our main stakeholders

As already mentioned, the situation was very complex. Hence, we had to use one of the principles we got taught within the Ecologies Playground: Embrace complexity and see things as predicaments, not problems. The project by ClxD is still in the beginning stage which also was the reason why we critically reflected on their concepts.

For us, it was clear that we did not want to provide a solution for any problem, but to find something to shine a light on the current situation. We could not include the residents in our process, so we decided to take the HvdT as our main stakeholder and include external people into our spectrum.



FS 2

CI 3

RA 2

—— direct influence
 - - - indirect influence

Searching for a direction

During the first three weeks of the project, it was very hard for us to find a direction to go with. We got a lot of mixed feedback from our teachers and peers. Are we being hypocrites for criticizing Eneco? Should we do something less opinionated? What do we want to get out of this project as individuals? This brought us a lot of confusion and costed us a lot of time. After reaching a low, we decided to do an improvised drawing session where the three of us sketched some ideas and handed the paper over to the next person. We let the drawings free to interpretation and let the other draw something on top or get inspired. Next come some of the results.

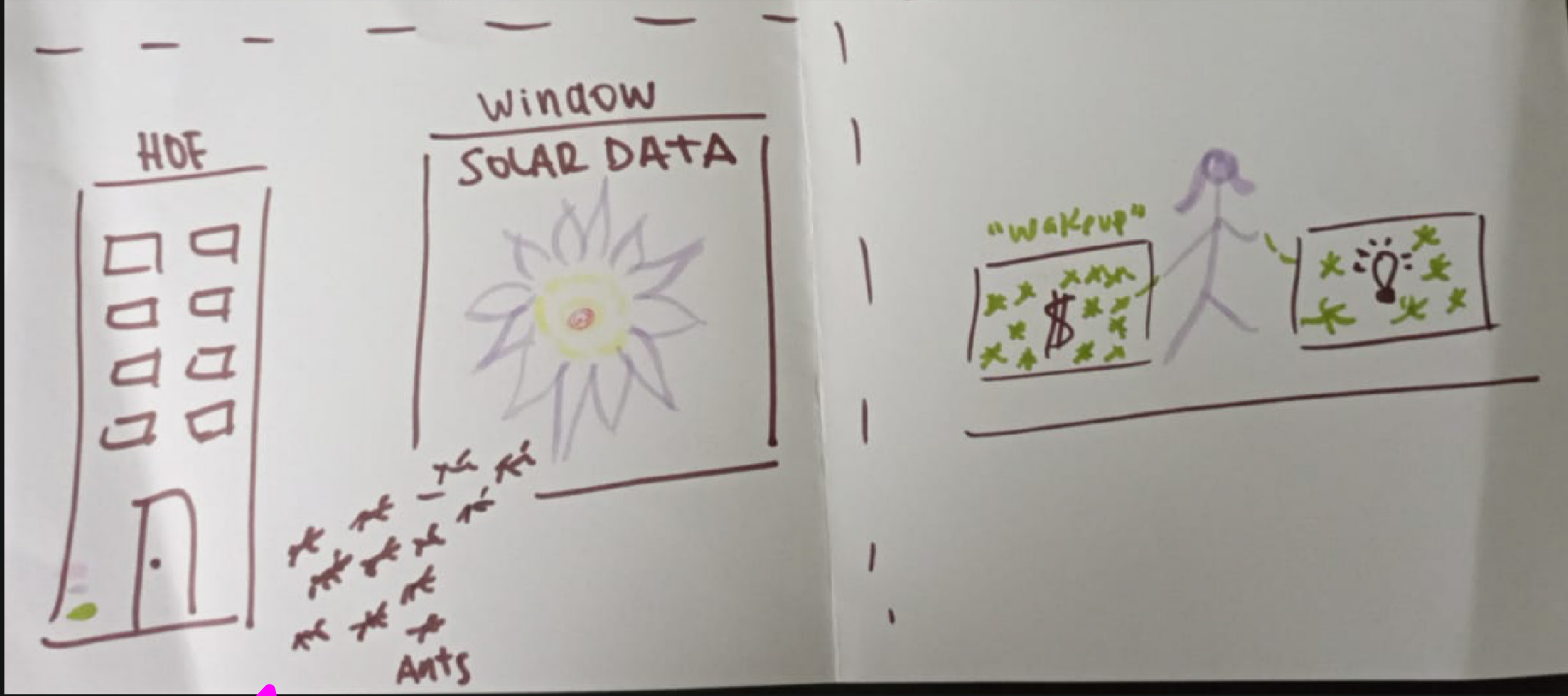
RA 2

CI 1



SDL 2

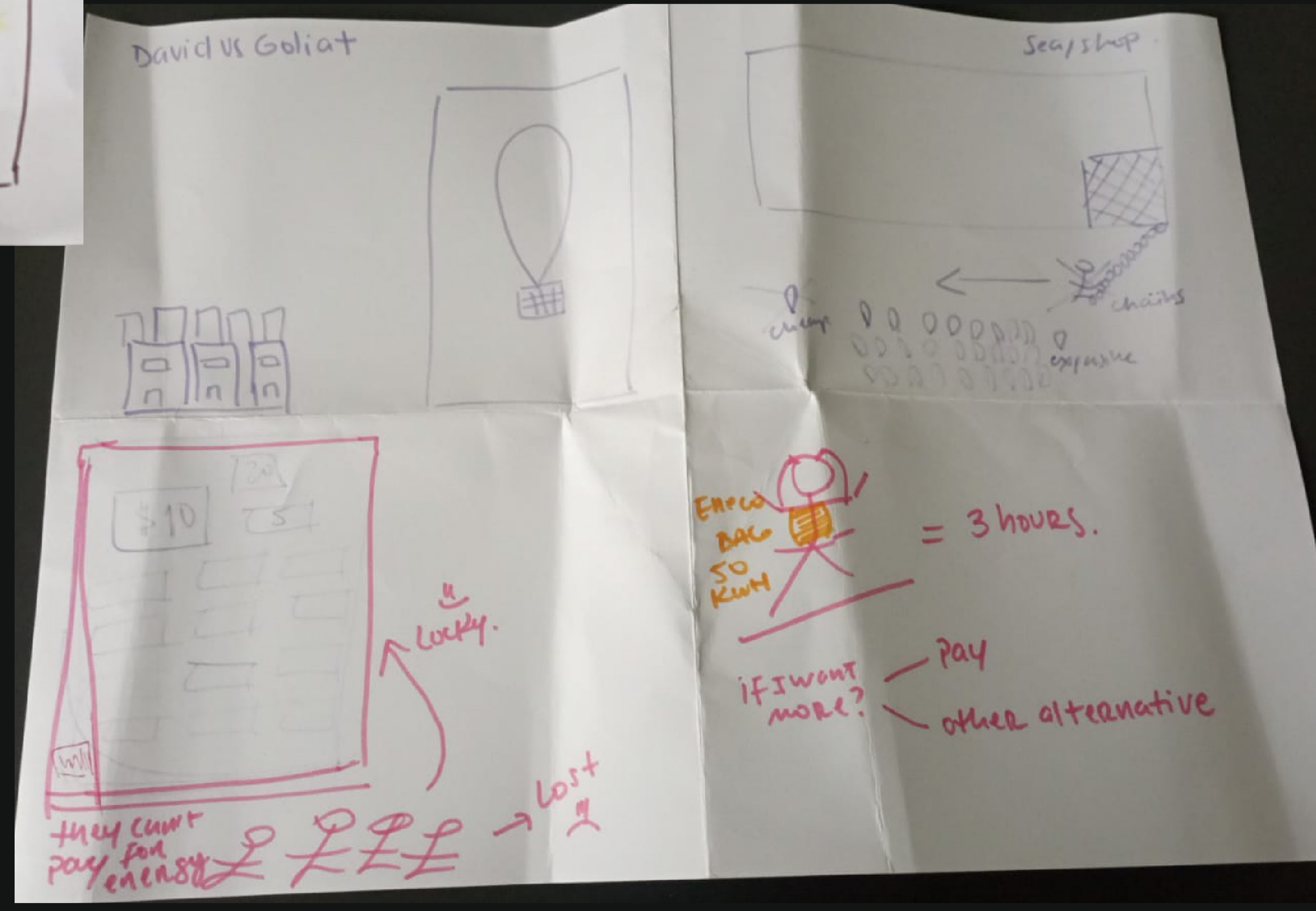
CI 1

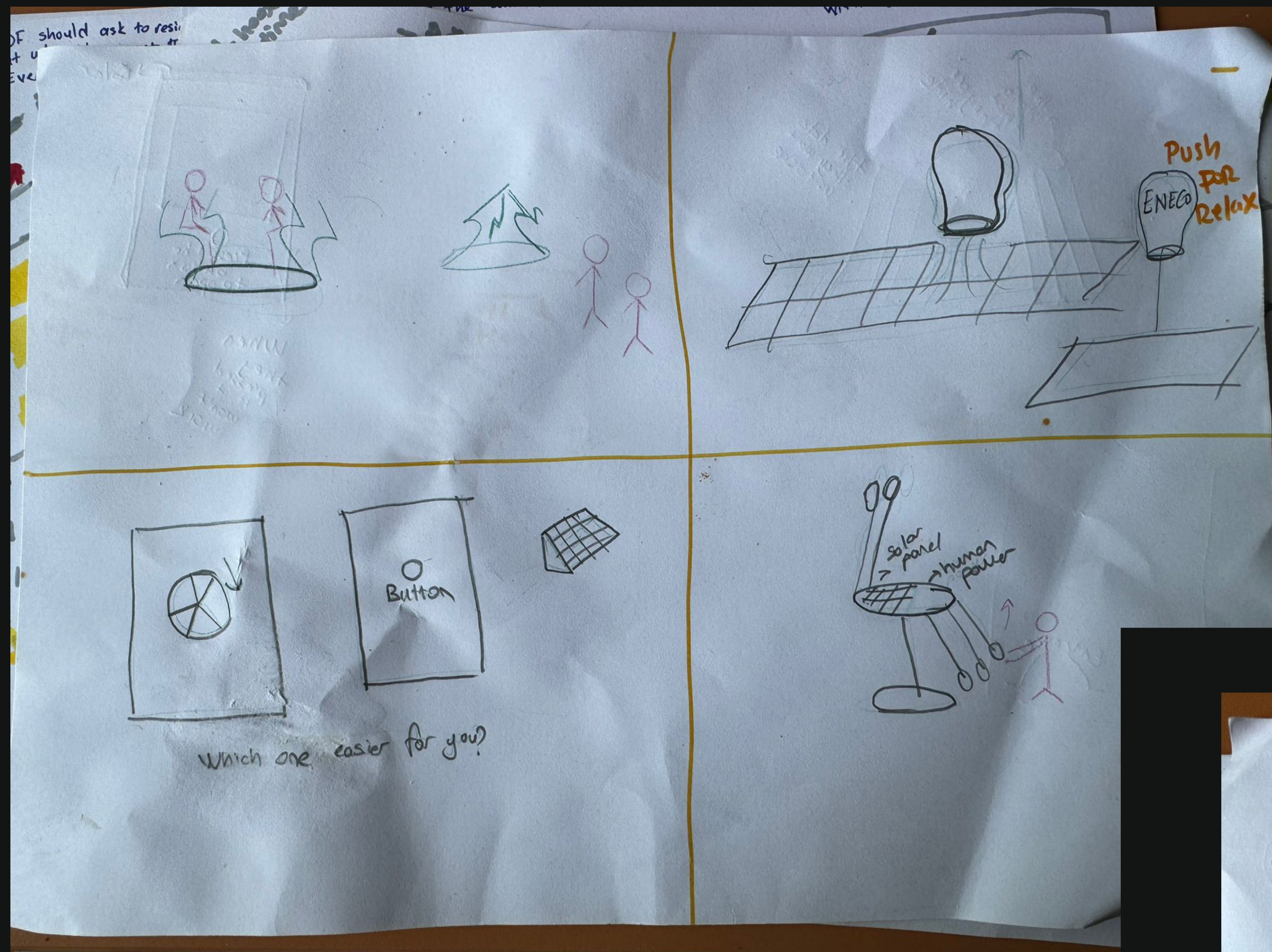


What did we initially want to draw? How did the other person interpret my drawing?



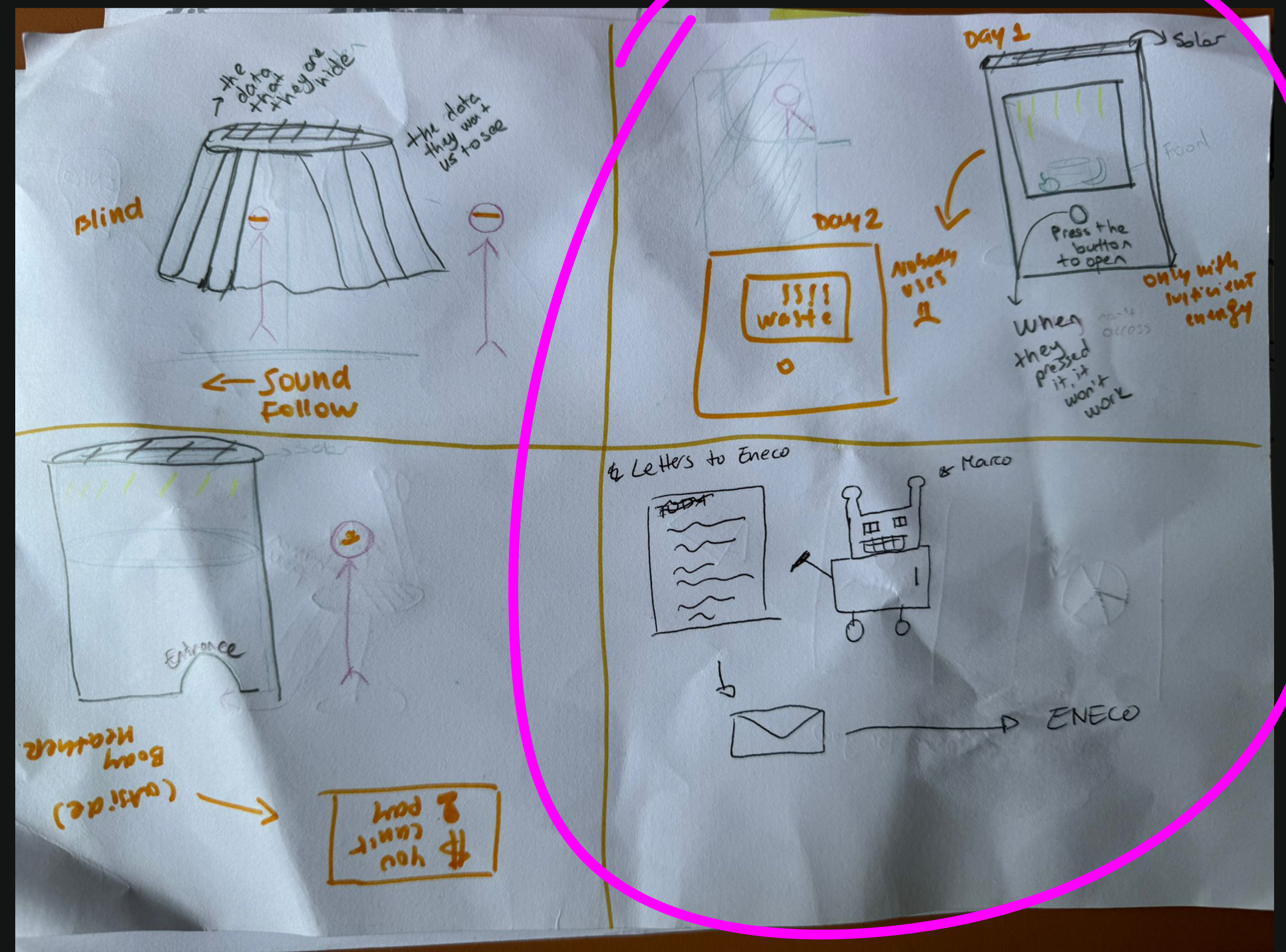
TANGIBLE CONNECTION
HvdT (-) Eneco





SHINING A LIGHT ON THE SITUATION

CI 1 This session helped us a lot in opening up our minds. After the discussion, we felt like we all were on the same page again. Our key question was: How can we help the HvdT to shine a light on the monopoly situation Eneco holds within that area?





Exploration

CI 1

We finally narrowed down what we had to three main ideas. But because one of them was not directly related to what we wanted to achieve with the project, we then decided to go on further with the other two. One was named „Padox“ and the other one we named „Poems to Eneco“. The following pages will explain both of the concepts in more detail.

Pandox

CI 1

CC 3

CC 1

The concept of „Pandox“ consisted of a solar-powered socket. But as soon as someone would try to access the generated electricity by plugging something in, an implemented printer would print this note:



تاريخ: 17/04/2024

مقرر 655

تسليمنا حاولنا اهرقوت اهم ادخست سا لوحات يتلنا قاطلا، بي رخلنا اي ابرم
جراخ اهب صاخلا قاطلا ريفوت اهنكم ي ال نالا اهي ف دجاوتت يتلنا قطنم
- قاطلا قاطلا لوصولنا نم كنكمت مدع يف ببسلا وه اهو . كطشلا

Date: 17/04/2024
Attempt No. 655

Hello stranger,

the energy you are trying to use was provided by solar panels.

The area you are being in right now cannot provide its own off-grid energy.

That was the reason why you could not access the collected energy.

BASE FOR
EACH POEM

Poems to Eneco

„Poems to Eneco“ is a concept that is also based on solar energy. A panel would collect data about the potential solar energy in the area. That data would then be fed to ChatGPT which then writes a poem based on the data, telling the reader about what the energy could have been used for.

CI 1

day 1
date: April 5
hours of sunlight recorded: 7 h
total hours of sunlight recorded: 7 h
kWh generated for whole period: 2 kWh



Poem No.1

Upon the roof, the journey starts, a single day, mark one,
April's choir, the fifth, sings with seven hours of sun.
A budding tale of light and life, just about to unfold,
A modest collection thus far, nine hours caught and held.

Merely two kilowatts generated in this infant stage,
Potential brews in photons freed from their solar cage.
With power so slight, yet with promises that swell,
Imagining ways it could serve us well.

Two kilowatts could light a room, where stories are told,
Or charge the tools that keep us connected and bold.
A few cups of tea, a warm comforting brew,
Unveiling how tiny watts could aid in what we do.

So let's cheer on the sun and panels laid up high,
Praying for clear skies and an uncloudy sky.
Day by day, let these numbers grow,
For in this power, seeds of hope we sow.

- the end

Experiments

We had two concepts that had a strong message and were equally doable for us. Which one was stronger? For a previous project, Josefina and I made an experiment to see how people would react to sockets placed in unusual environments. Therefore, we placed a socket tower at unusual locations outdoors to see if people would actually try to use them. Although the reasons for the outcomes may be various, it gave us some insights.

The findings were that nobody really interacted with the socket. People were looking at it, but no further action was taken. Also, we observed the „solar bench“ outside our university where people can sit while charging their phones per induction. We did that for almost two hours and did not see anyone using that bench. Why would someone at the HvdT use our socket then?

SDL 2

FS 1

FS 3

CI 2

CI 3

CI 1





FS 1

FS 3

CI 2



Presentation

Nevertheless, we decided to bring both concepts for the presentation at the HvdT. We presented both ideas and were curious what people had to say. To our relief, our audience was quite pleased with our ideas. Questions were raised about how the socket was related to Eneco as a heating provider. This could create a wrong impression of the situation. Also, the language barrier is problematic: The BoTu region has a variety of people who speak different languages. Which ones should be implemented on the Pandox note?

FS 1

FS 2

CI 1

CI 2

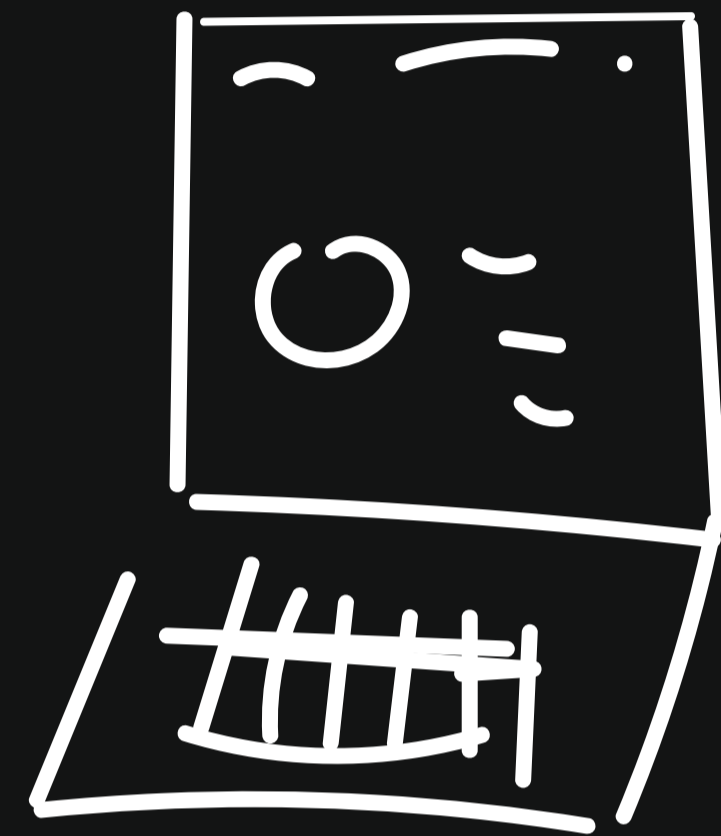
RA 1

RA 3



OUTSIDE
HvdT

WEBSITE WITH
POEMS \



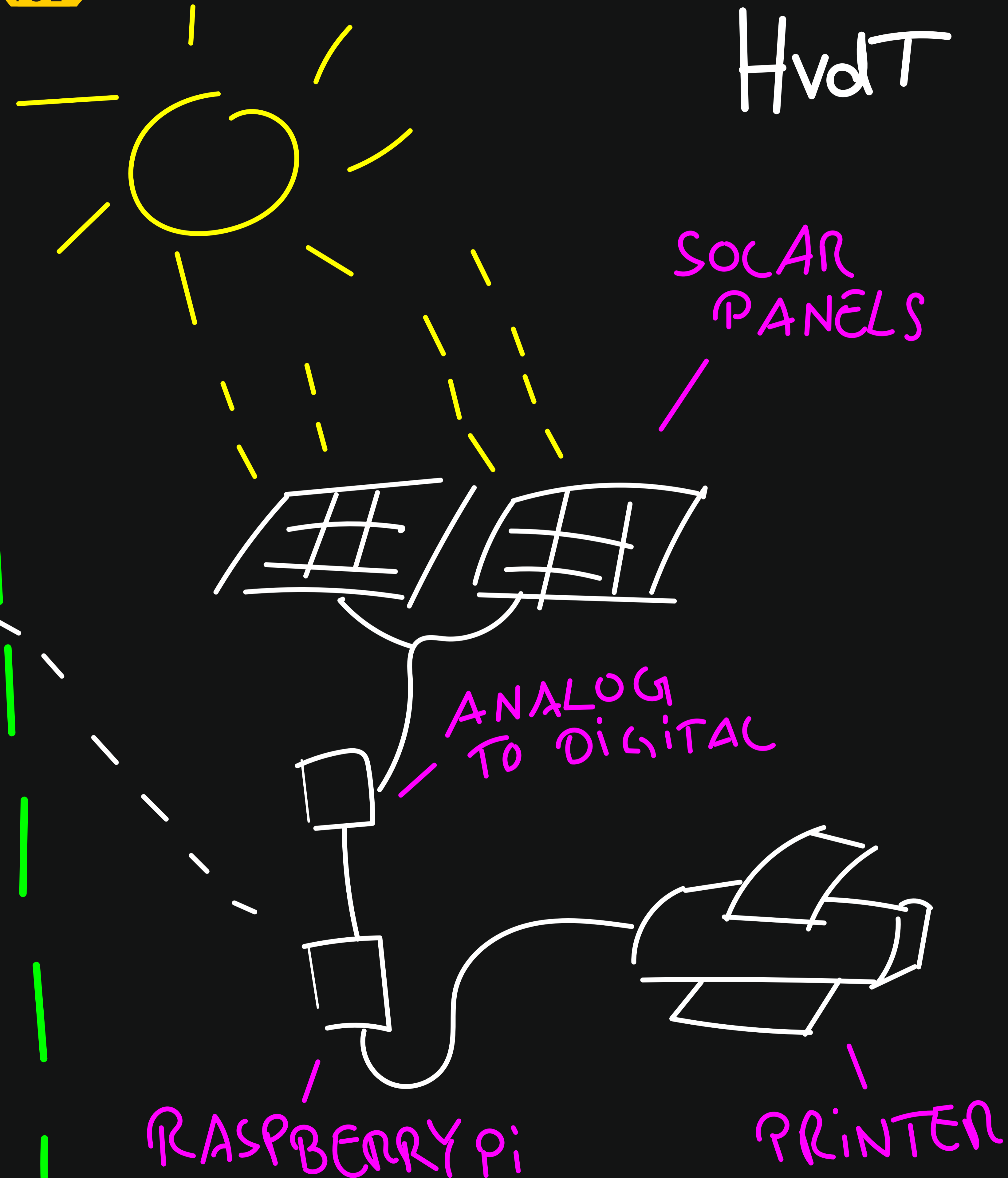
FS 2

HvdT

SOLAR
PANELS

Narrowing it down

- FS 3** Considering these aspects, we decided to go with the idea of „Poems to Eneco“. It gave us more potential to incorporate human power and was overall stronger to us in regards to its activistic potential. Works like „Offset“ by **CC 3** Tega Brain (2024) or „Cold Call“ by Sam Lavigne (2023) showed us that there can be a lot done by producing artefacts that can then be purchased or distributed by people all over the world. This approach would allow us to multiply the human power for our project, using the poems as our artefacts. The concept also had more potential of bringing in external people as stakeholders. The sketch shows how we imagined the installation to work.
- FS 2**



Prototyping

In the week of the Feedback Feast, we started prototyping. While Josefina and Nesrin took over the part of building a Figma prototype for the website, I focused on programming the RaspberryPi (able to run Large Language Models) and creating a real-time visualization of the energy that is being collected through the solar panel. Also, I wanted to connect the RaspberryPi to an assistant we built up in ChatGPT. I took over this part because I have never built anything with a RaspberryPi before and wanted to take the chance to learn new skills. I used ChatGPT as a support to generate the code. The website was hosted on the RaspberryPi, using a node.js to create a server and an html file that displays the data as a graph. The final prompt was: *generate a nodejs app that reads a value from an arduino in the serial port and graphs it on a webpage using the express framework*

CC 2

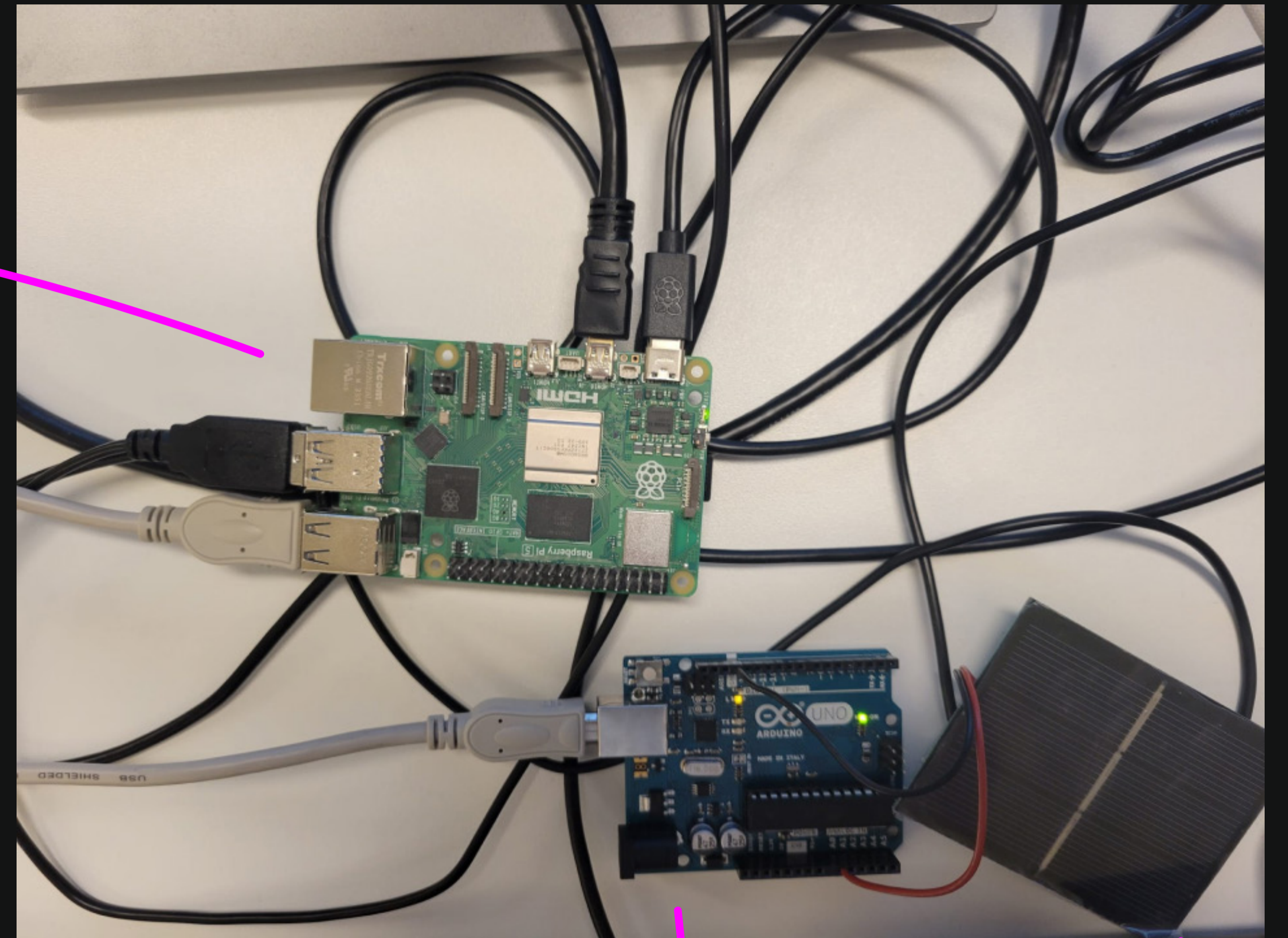
RASPBERRY PI 4

CI 1

CC 1

SDL 1

CI 3



ARDUINO UNO

SOLAR PANEL

Playground

Edit instructions

You are an activistic poet that writes critical poems. You are writing poems including the following data: There is a solar panel on a roof that collects energy. The panel sends data that consist of the number of days the project is running, the date, the amount of sunny hours that day had, the total amount of sunny hours there were since the project was set up and the total amount of kWh that have been generated and wasted. You also relate the number of kWh into what they could have been used for in your poem.

Please write no more than four paragraphs. The rhyme scheme should be ABAB. Please end each poem with -the end, starting in a new row. Please start a new paragraph for each verse.

1
ASSISTANT'S
PROMPT

RA 3

The screenshot shows the OpenAI Playground interface. On the left, there's a configuration panel for a chat thread named 'Poems to Eneco'. The instructions field contains the prompt: 'You are an activistic poet that writes critical poems. You are writing poems including the following data: There is a solar panel on a roof that collects energy. The panel sends data that consist of the number of days the project is running, the date, the amount of sunny hours that day had, the total amount of sunny hours there were since the project was set up and the total amount of kWh that have been generated and wasted. You also relate the number of kWh into what they could have been used for in your poem.' The model is set to 'gpt-4-turbo-2024-04-09'. Below the configuration, there are sections for 'TOOLS' (File search, Code interpreter, Functions) and 'MODEL CONFIGURATION'. The main chat area shows a single message from the assistant: 'Poems to Eneco
Upon the roof where panels lay, marks the ninth of solar sway, The sun poured down its golden sheen, nine hours of glory, bright and keen. Since the dawn of this green quest, ninety-seven hours have dressed, Our world in robes of light, no jest, two hundred kWh caressed.
Imagine now what power we hold, from skies of azure, bold, Two hundred currents of pure gold, could lighten homes from cold. Yet think of what's been thrown away, potential lost in day's decay, A plea for us to find a way, to harness all the astray.
For every watt that we ignore, is a step away from the greener lore, A chance to heal the wounds we bore, upon our planet's core. Let not this sunlit gift be wasted, on rooftipe panels neatly nested, With every hour so richly tasted, we paint a future rightly basted.
-the end'.

CC 2

FEEDING
ASSISTANT
WITH TEST
DATA

generate a nodejs app that reads a value from an arduino in the serial port and graphs it on a webpage using the express framework

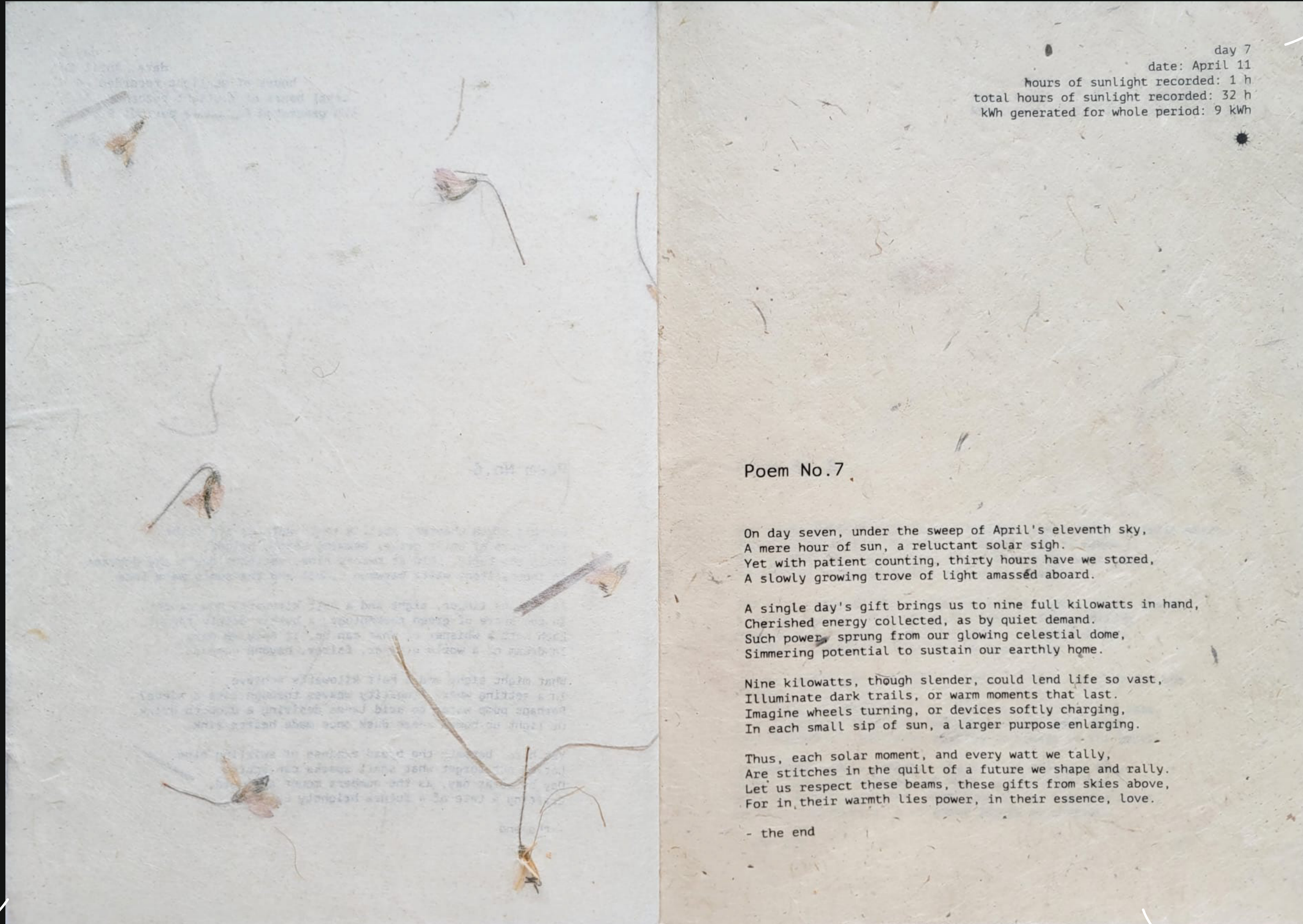
Creating a Node.js application that reads a value from an Arduino through the serial port and displays it on a webpage using the Express framework involves several steps. Here's a step-by-step guide:

1. **Setup Arduino:** Ensure your Arduino is connected and programmed to send data via serial port.
2. **Install Node.js and Required Packages:** Ensure Node.js is installed. You'll need the `serialport` package to read from the serial port and `express` for the web server.

PROMPT TO
GENERATE
CODE FOR THE
REAL-TIME
DATA VISUALS

BOOKLET WITH
A COLLECTION
OF 10
POEMS

DATA THAT
WE GOT
FROM THE
OFFICIAL
RECORDINGS
IN ROTTERDAM



day 7
date: April 11
hours of sunlight recorded: 1 h
total hours of sunlight recorded: 32 h
kWh generated for whole period: 9 kWh

Poem No.7

On day seven, under the sweep of April's eleventh sky,
A mere hour of sun, a reluctant solar sigh.
Yet with patient counting, thirty hours have we stored,
A slowly growing trove of light amassed aboard.

A single day's gift brings us to nine full kilowatts in hand,
Cherished energy collected, as by quiet demand.
Such power, sprung from our glowing celestial dome,
Simmering potential to sustain our earthly home.

Nine kilowatts, though slender, could lend life so vast,
Illuminate dark trails, or warm moments that last.
Imagine wheels turning, or devices softly charging,
In each small sip of sun, a larger purpose enlarging.

Thus, each solar moment, and every watt we tally,
Are stitches in the quilt of a future we shape and rally.
Let us respect these beams, these gifts from skies above,
For in their warmth lies power, in their essence, love.

- the end

CC 2

CC 1

FS 3

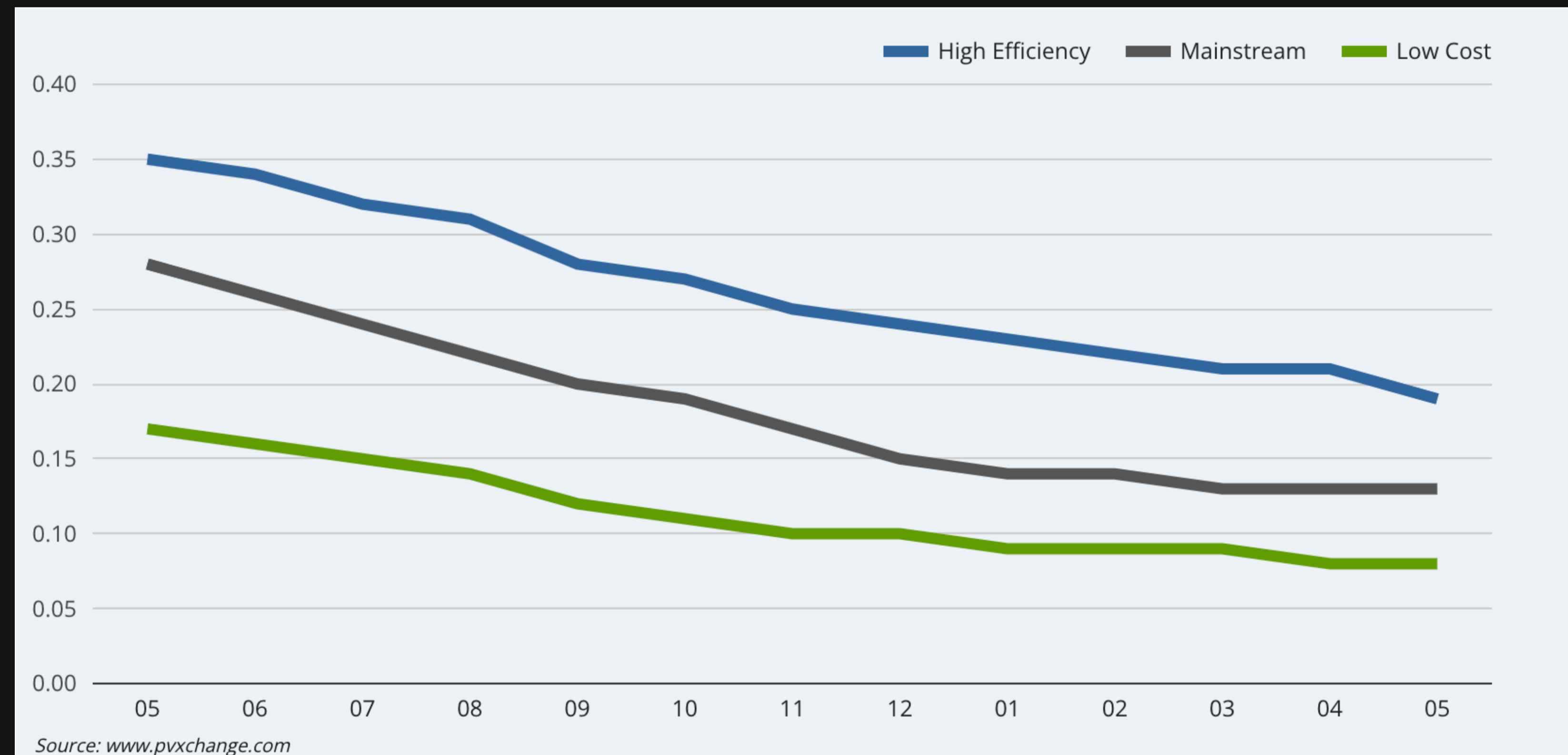
HANDMADE
PAPER

AI-GENERATED
POEM

Design Decisions

CI 1 Why poems? Poetry has a long history and tradition in human history. It is one of the oldest traditions of mankind and shaped whole generations and epoques (Parry, 2023).

RA 2 We as designers are positioning ourselves on a critical side. We conciously decided to take that opinion because it ethically felt right for us to do so. We struggled with requiring the residents to change habits, although there is enough evidence on how people with lower incomes already live more sustainable than richer people (Combat Poverty, Insecurity and Social Exclusion Service, 2020). We are also fully aware of the fact that the situation is very complex and installing some solar panels will not solve the problems this area is facing. Nevertheless, it is an established technology that is as affordable like never before (Solar Price Index & Solar Module Price Development, 2024). Solar panels made it to the mainstream world and would help the HvdT to achieve their vision. Banning it therefore seemed like an ironic thing to us, especially for an energy company that claims to be sustainable (Eneco, 2024).



RA 1

RA 3

- graph showing the price development of solar modules on the European market (Solar Price Index & Solar Module Price Development, 2024)

SCREENSHOTS OF THE WEBSITE PROTOTYPE

CC 3

Design Decisions

Choosing AI (ChatGPT) for writing the poems had to do with that irony. Taking an artform that has such a long tradition in humanity and making an AI write it is an intended contradiction. It almost seems disrespectful towards real poets. And for us, this was a reflection of the whole monopoly situation.

CI 1

CC 1

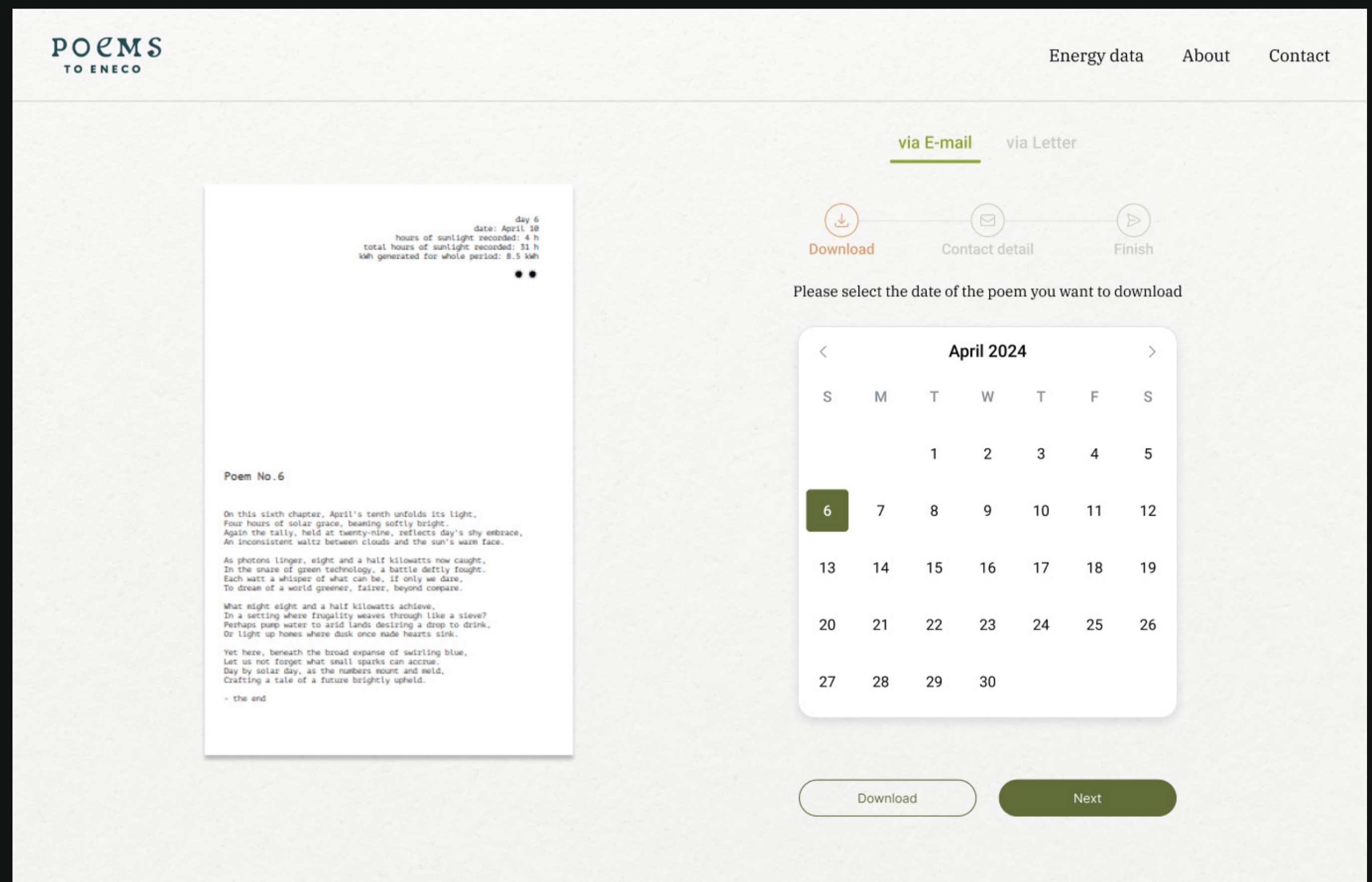
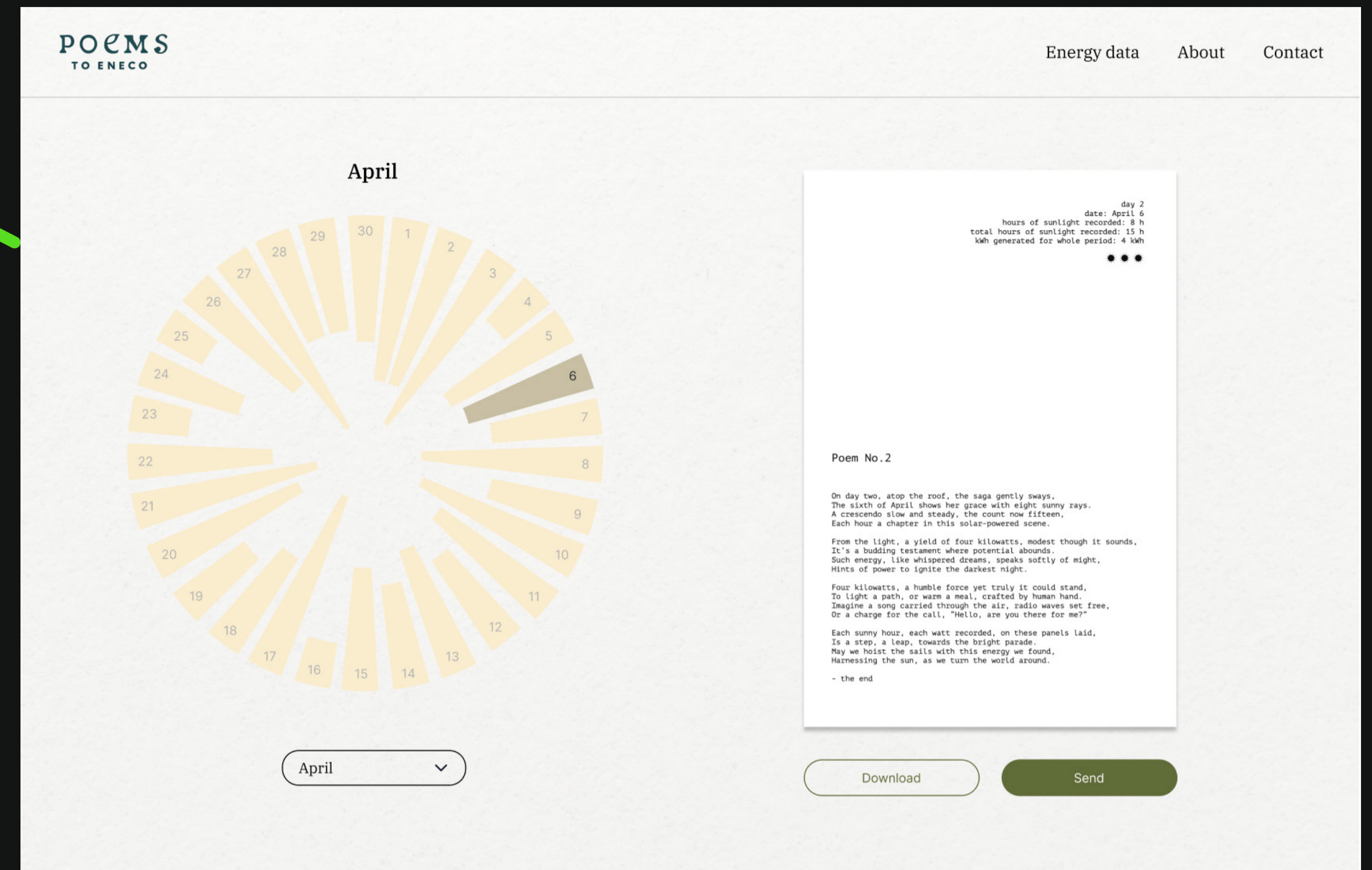
CC 3

RA 3

What would happen with these poems after they get printed? This is the part where the human power gets involved. At the HvdT, people can pick up the printed poems from the floor, put them into an envelope addressed to the complaint centre of Eneco and send it to them. Legally, Eneco is obliged to deal with every complaint they get which would cost them money.

But it doesn't end there: By building up a website where the poems get uploaded daily, people from all over the world can send them per (e-)mail. This is our idea of shining a light on the situation and creating an activist movement.

RA 1



Feedback Feast

CI 2 For the feedback feast, we decided to show the website
CI 3 prototype and the real-time graph generated by the panel
(all running on the RaspberryPi), along with the poem-
bundle. During the mingle, we quickly realized the installati-
on was not very self-explanatory and we had to explain our
concept a lot. The main takeaways were:

- The prompt was too „vanilla“, hence lacking some spice
- What if people could buy the bundle, creating an income for the HvdT? (similar to the project „Offset“ by Tega Brain, 2023)
- Stronger panel
- Installation has to be less cryptic



RA 1

RA 3

our
INSTALLATION



- visuals created by a stable diffusion model showing how the final product could look like



Afterlife

With this input, we decided to iterate the prototype further. The RaspberryPi still didn't feed the data to ChatGPT, so that is something I am currently still working on. By using a bigger panel, we will also have to find a different way of translating the analog data into digital, given the fact that the ArduinoUno can only handle 5 Volts. For the final presentation at our graduation, we also need to figure out a way of making the installation look more sleek and reducing it on the relevant parts: The website and the printer. We also want to give people the opportunity of printing some poems and providing them pre-filled envelopes, so that they can send them afterwards. Hence, turning it into an experience and making the installation less static.

- SDL 3
- FS 3
- CI 1
- CI 2
- CC 1
- CC 2
- RA 3



Reflection

Working within this group was quite challenging sometimes. While I embraced the variety of backgrounds that all of us had (UX, sociology, online marketing), I sometimes had the impression that not everyone was fully understanding what the project was about, even in the end. I normally am not comfortable with taking over the role of the „leader“, but in this particular group I felt the dynamics required it. I had the feeling of having to be the one organizing the meetings with our agency (Fabrique) and presenting our ideas in front of people. I really wanted the project to be something I could stand behind, so I tried to motivate the others to put in the extra effort.

With time, I adapted to my role and understood, that my group appreciated having somebody that has the vast overview over everything. For me, it was also an opportunity to grow, because I often feel very uncomfortable speaking in front of bigger crowds of people.



SDL 3

SDL 1



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day 10
date: 15th of April
sunny hours that day: 6 h
total sunny hours: 45 h
total kWh generated: 90 kWh



Poem No. 10

In a world of innovation, a solar panel was born
With powers to generate energy, it was a wondrous thing
It harnessed the sun's rays, and converted them to power
A 500W washing machine, it could make it run for an hour

But alas, the energy it produced was deemed to be
Banned from use, by the powers that be
A law was passed, to restrict its might
For fear of the consequences, of this solar delight

The washing machine, it sat idle and still
While the solar panel, its energy was spilled
Into the grid, where it could not be used
A tragic fate, for this renewable abuse

But the inventor, he did not despair
He knew that one day, his creation would be fair
For the world to see, the power of the sun
And the potential, that it has begun

So he kept on working, day and night
To find a solution, to this solar plight
And though the energy was banned, he knew
That someday, it would be set free, anew

- the end

huizandetoekomst

POWER BOARD

HUMAN POWERED HOUSE OF THE FUTURE - How can a human-powered community look like?



SUMMARY

The Power Board allows residents to connect, use community rooms facilitate value exchange and make community power visible for Huis van de Toekomst (HvdT). Inspired by traditional bulletin boards and local newspapers, this initiative collects anonymous information about what people can give, need, or want to share with their community. Additionally, we provide an engaging way to print and display this information in physical spaces in the HvdT community rooms. The phygital approach makes our prototype more accessible in multiple ways and lowers the barrier to community engagement and should attract residents to share HvdT community vision.

POWER BOARD

A COMMUNITY EMPOWERING SYSTEM

A project by Chantal Deiss, Han Pham, Elisabeth Adelsberger, and Jose Daniel Morales Riera for the Huis van de Toekomst and Transition Scapes.

This project is designed for the Huis van de Toekomst (HvdT) which is a living lab in Bospolder-Tussendijken (BoTu) that explores how a human-powered community could look like (Melle Smets, n.d.). The living lab simultaneously serves as a prototype for the research project Transition-Scapes by the Civic Interaction Design Lectoraat (ClxD) to visualise future scenarios about energy transition (Civic Interaction Design, n.d.). With both stakeholders in mind, we mainly explored how value can be exchanged among the community, making the vision of HvdT more tangible.

POWER BOARD INSTRUCTIONS

Connect with your community, exchange value with each other, and help to make your community power visible!

WANT YOUR COMMUNITY POWER COME TO LIFE?

Press the button next to the printer at one of our physical locations and see what happens.

SEE SOMETHING YOU LIKE?

Go to our website through the QR code below, enter the 6-digit receipt number from the printed receipt and connect.

YOU WANT TO CONTRIBUTE?

Scan the QR code below and fill in the form. Your contribution will be ready to be printed.



Instructions Power Board

Project pitch

How might we connect the residents, facilitate value exchange, and make community power visible in Bospolder-Tussendijken?

Our project addresses these aspects through a phygital platform that draws inspiration from traditional newspapers, the fortune cookie, and local bulletin boards.

How does it work?

Whether a resident wants to lend a helping hand, seek assistance, or share anything with the community, the digital Power Board platform is there to store every input. Once filled in, the platform will refer you to the Power Printer which we imagine to be located in the HvdT. The printer will randomly print one entry. If a resident can make use of it they can take the printout and connect with the author through the receipt number. If the printout is not relevant to the specific person, it can be added to the physical Power Board for other community members to see it.

Concept of human power

Instead of seeing human power as a way of energy generation, we challenged the brief and decided to focus on facilitating value exchange of existing power. Even though the neighbourhood has limited financial means, we found that there is plenty of intellectual and physical power present which the Power Board aims at making visible.

Design Process

Research and Concept

To understand the complex context of the project better, we started by defining the concept of human power and mapped out relevant stakeholders. Soon, we learned that this is a very difficult task as many stakeholders with different aims are involved and the project itself is still under development. Naturally, we began researching the BoTu residents as we saw that, as one of the poorest communities in the Netherlands (Veldacademie, 2021), they are the most vulnerable stakeholders and in need of support (see right). Why would we, for example, focus on energy transition if they could not even afford pans and pots for an induction stove? However, due to the community already being heavily researched, we were not able to approach the residents directly. Also, according to the brief, HvdT and Transition scapes are our main stakeholders.

Furthermore, the problem of gentrification came to our attention, with artists and researchers often being the first gentrifiers (Kofi, 2021). These mismatches made us question the brief and the vision of the HvdT, leading to moments of being paralysed and demanded us for several de-briefings. We had to trust HvdT that the well-being of the residents was in their interest and thus tried to see them as a mediator through which we could make a positive impact on the community.

On a more zoomed out level, the municipality, the energy provider Eneco, and private investors are playing a role. These stakeholders however focus on profit instead of community well-being which is why we decided to consider them as indirect stakeholders.

Narrowing the projects context down in this way helped us to reduce complexity. As ecological designers, we have to deal with complex situations while not oversimplifying them.



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OUR PROJECTS FOCUS

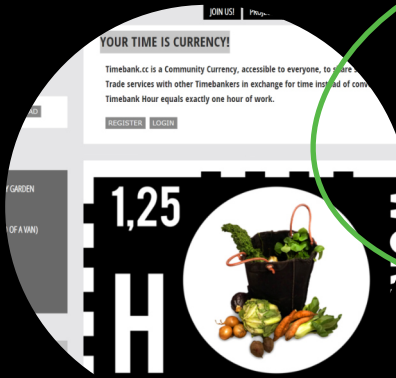


Concept Development



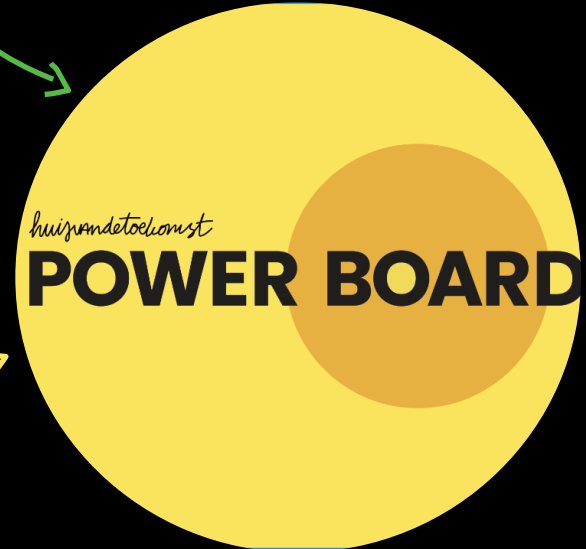
Community Memory

- \\ First computer-based bulletin board (1973)
- \\ Reading is free, posting paid
- \\ No log-in or device needed (Doub, 2016)



Time Bank

- \\ Community currency, exchange time instead of money
- \\ Share skills, knowledge, and services
- \\ Accessible to everyone (Timebank, n.d.)



Little exchange between the groups in the community + little trust in government

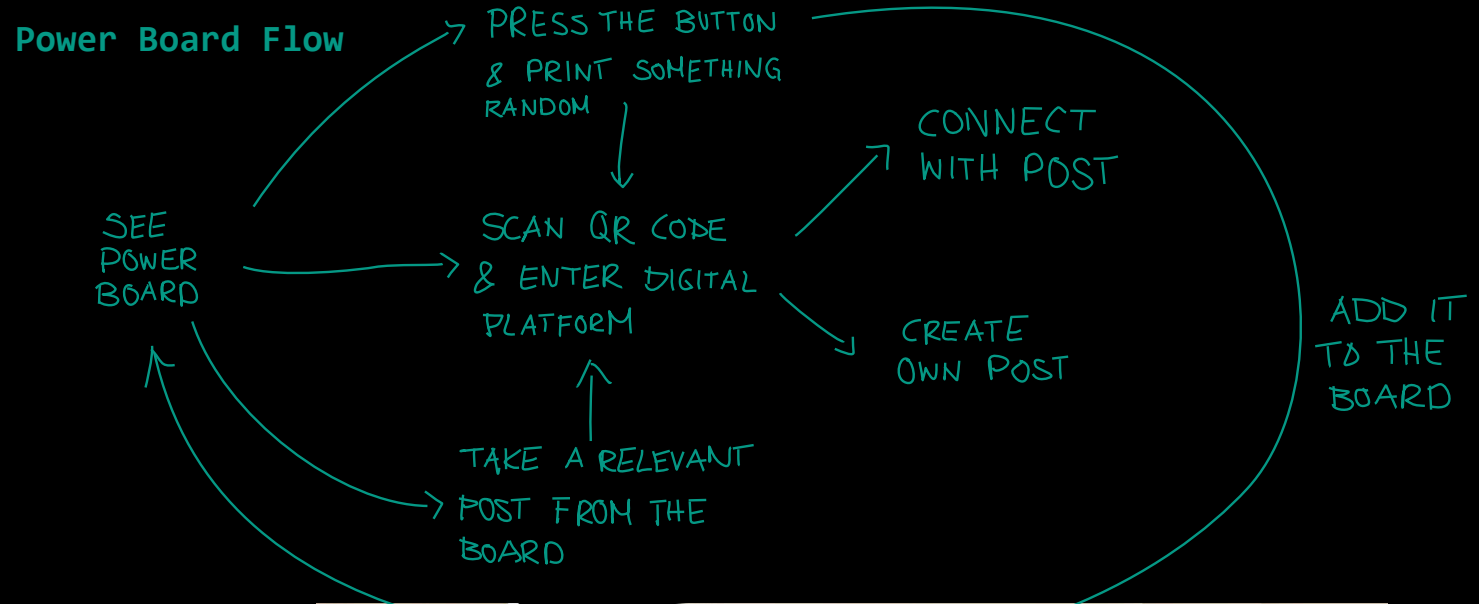
Limited financial means in the community

Barrier to ask for help

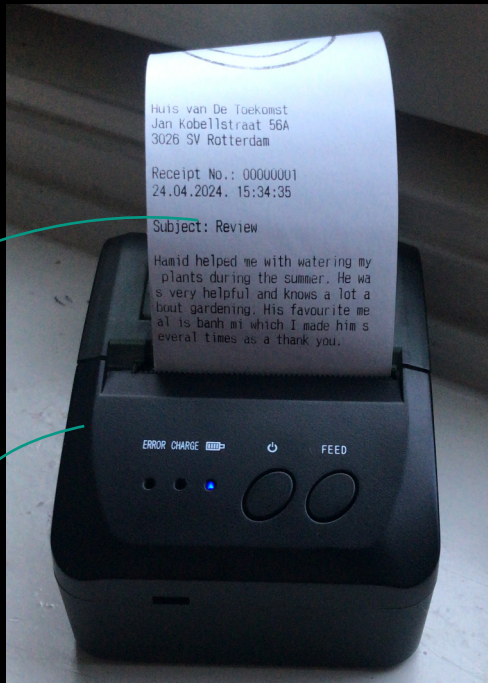
- PREDICAMENT SPACES
- EXISTING WORK

Making

To make our project more impactful and increase reach, we decided for a phygital approach. The physical there to attract and be visible in the space while the digital is a way to access community power from everywhere without time and location restriction and the possibilities of translation to multiple languages, data collection and other functionalities added like a room booking system.



First print using my phone

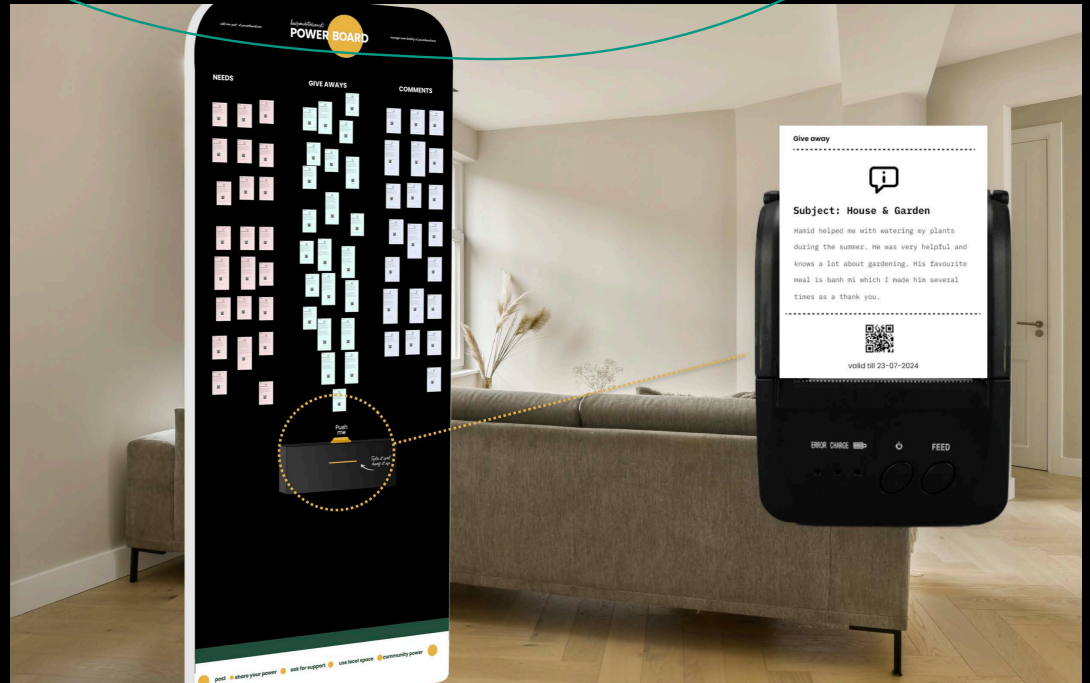
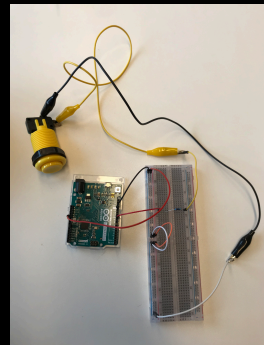


NO INK NEEDED

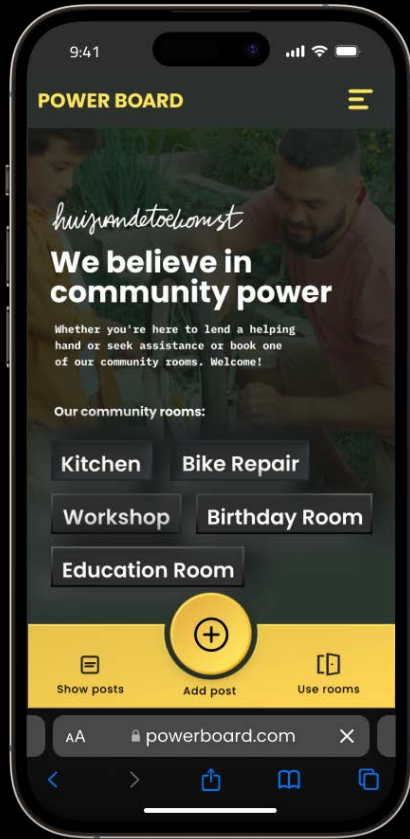
SMALL

LONG LASTING BATTERY

Connecting Raspberry Pi to a yellow button



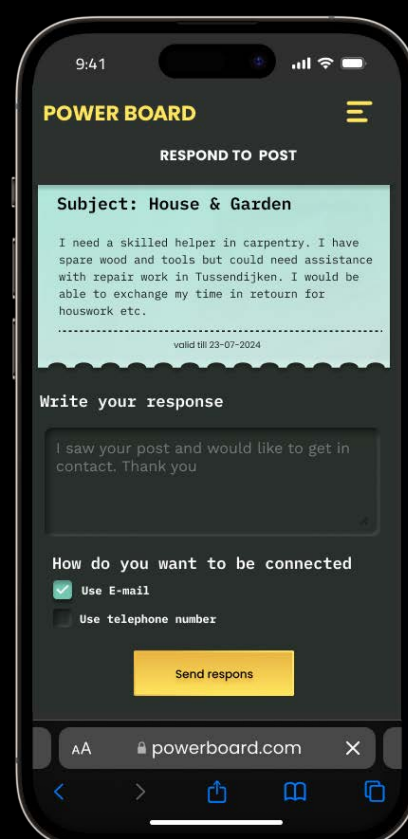
Prototyp



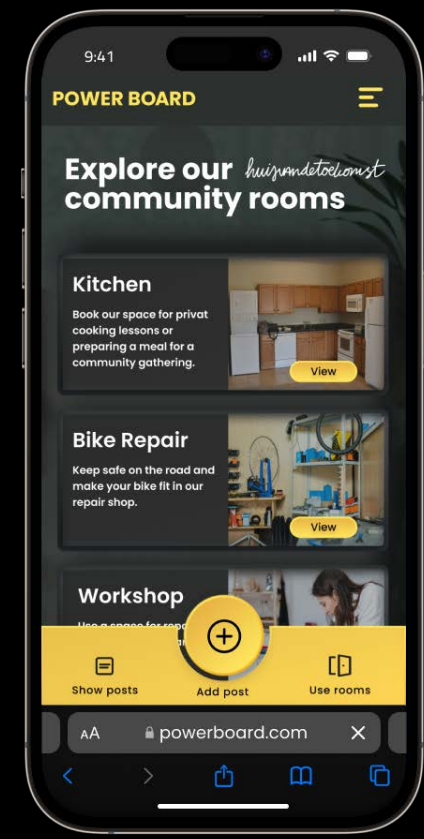
Landingpage:
Get to know Community Power



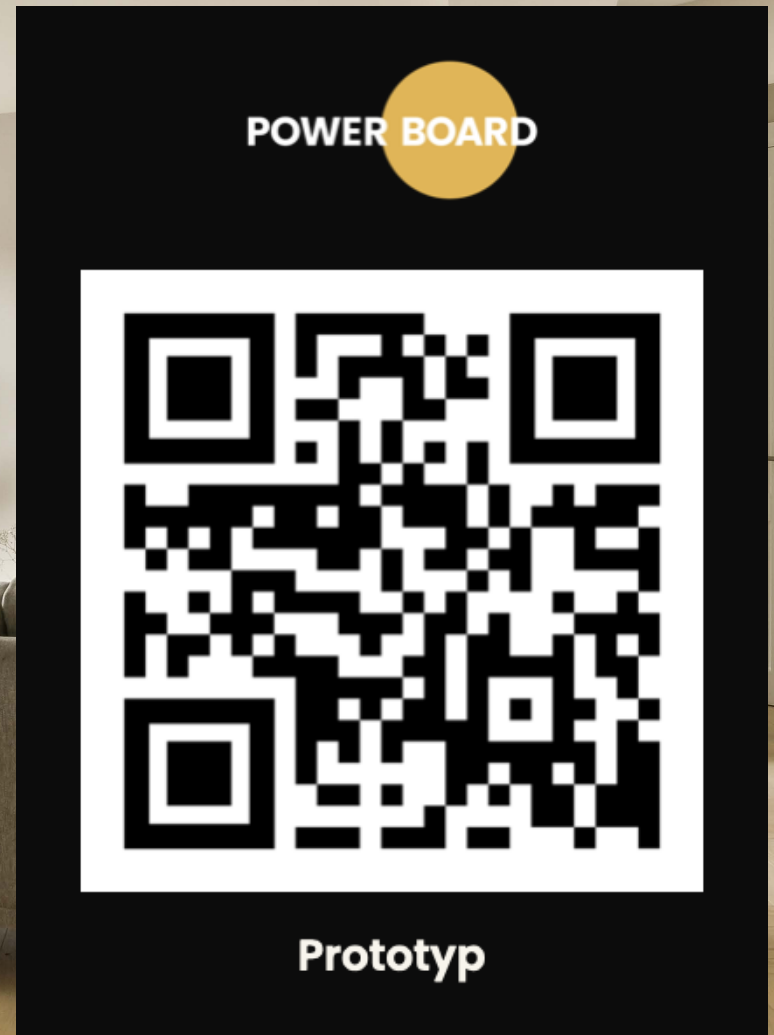
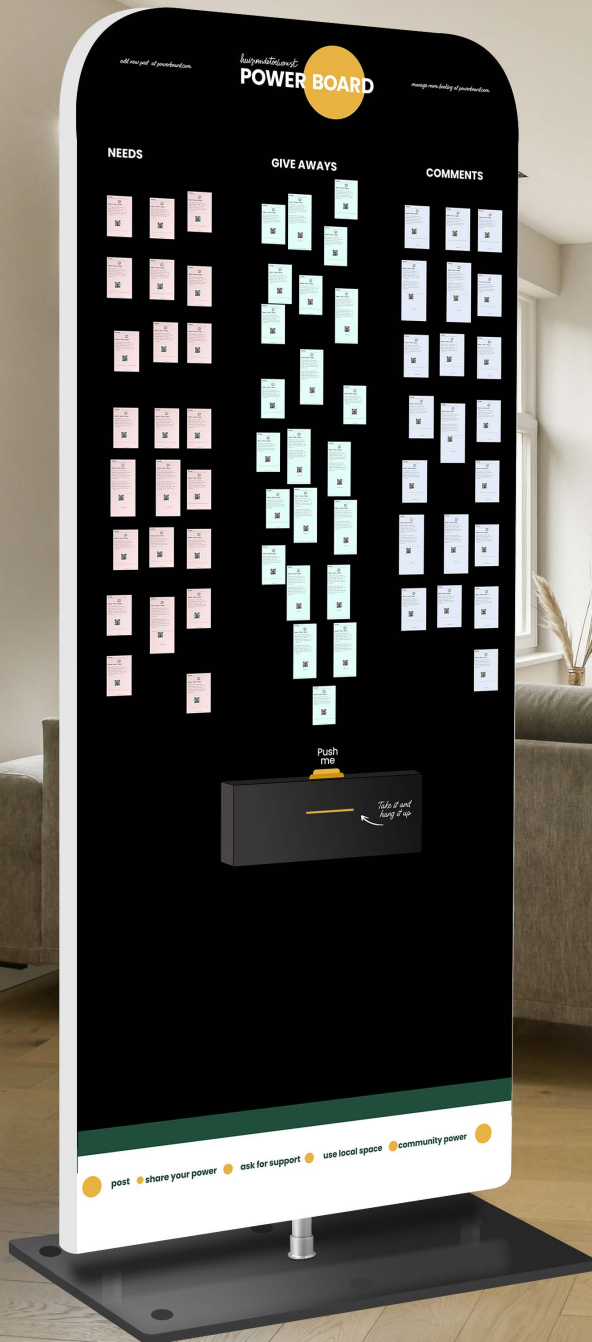
Create:
Make a post to share thoughts, ask for help or give

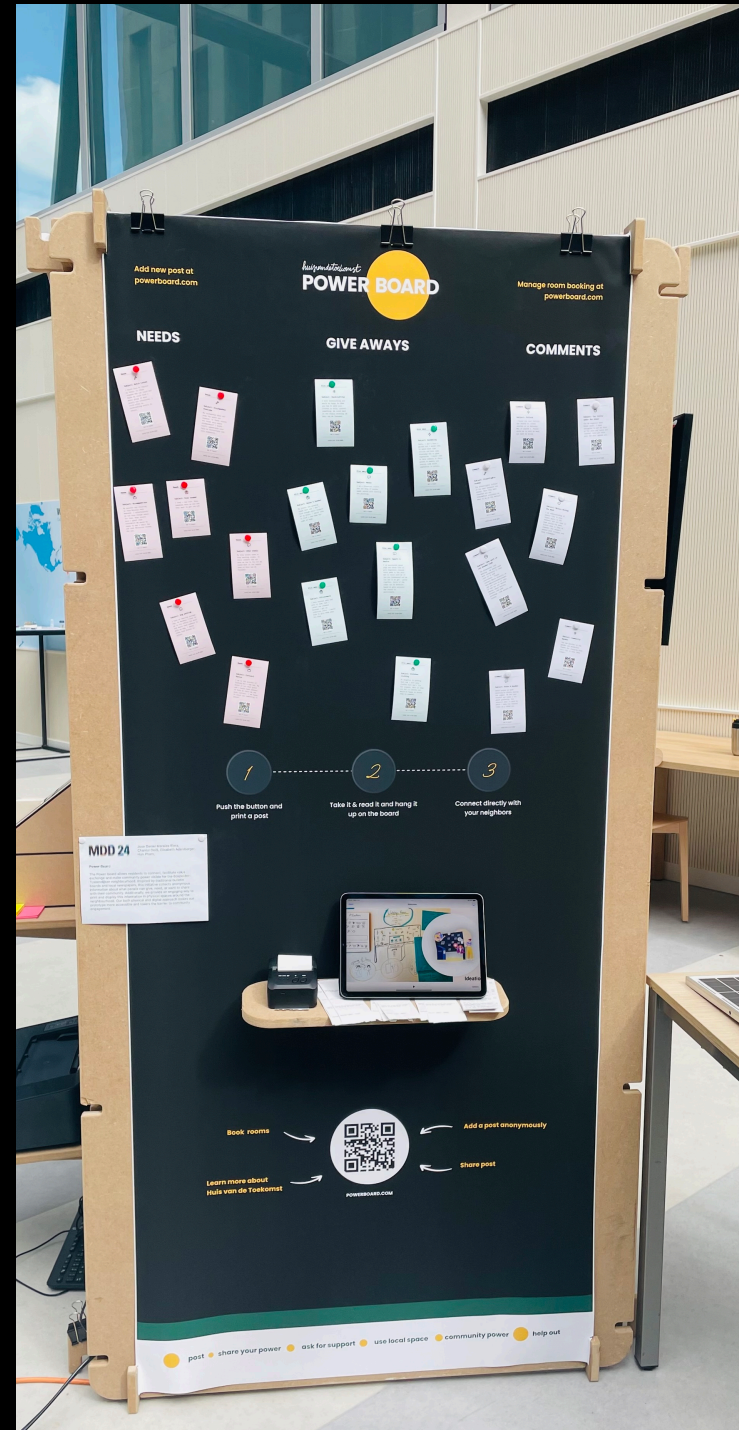


Respond:
Connect to neighbors and decide how to communicate (mail or phone)



Rooms:
Make Community Power come to life insight the HvdT rooms





Emerging Ecologies

Project Edison

Our relationship with light

When the first humans walked the planet millions of years ago, they relied on the Sun as their sole source of energy. Since then, mankind has discovered other ways to light the world.



Fire



Candles



Kerosene lamps



Light bulbs



Led lights

Then

Now

Project Edison

A sensor/digital interface to track and grow bioluminescent algae. This algae will provide ambient lighting for community activities at night.

Bioluminescence

Bioluminescence is light emitted by living things through chemical reactions in their bodies...

Algae Monitoring

Monitor the environment of the algae digitally through an app.

Welcoming Ritual

The "Fire" of the community.
Welcome neighbours or bid farewell around the ambient light.



Bioluminescence

Dinoflagellates

Dinoflagellates are motile unicellular algae characterized by a pair of flagellae

- Algae found in warm oceans.
- Photosynthesis by day.
- Wave motion agitate a bio-chemical reaction.
- They produce a blue-green glow

Why Bioluminescence?

- Why not just a communal plant?
- Off-grid
- Sustainable
- Science spectacle

Working with live organisms

- How ethical is it to use the algae for this project?
- What alternatives are there?
- Consent form



Algae Monitoring

Accountability

- Who will maintain this?
- Foster responsibility
- Educational benefits

Web app

- Appropriate digital medium?
- Caretakers
- Timeline (progress)
- Action recommendations

Edisensor*

- Conductivity sensor – Salinity
Nutrients?
- Temperature sensor – °C/°F
- Photoresistor– Light intensity

Lifecycle

- Journey of life and death
- Internal biological clock
- Increase their volume



Welcoming Ritual

Outdoor activities

- Welcoming new residents
- Communal night activities.
- Meeting Point

Spinning table

- Spin the globe with each other
- Strengthen your community by coming together

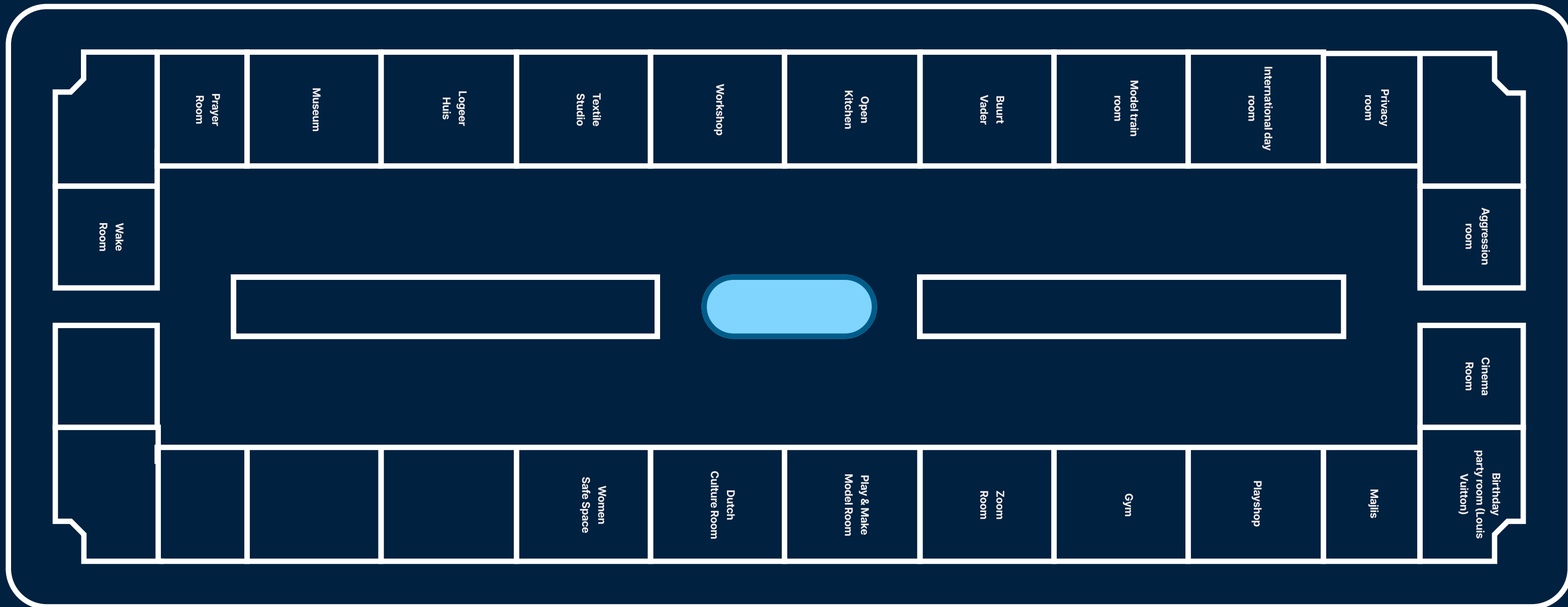
Ambient light

- It sets the tone
- Lighting up the space

New old rituals

- Revitalise old rituals
- Recreational activities

The Location



Onboarding

