POWER of DESIGN

THE POWER

OF DESIGN

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Elsebeth Gerner Nielsen
Rector,
Kolding School of Design

004

INTRO DUCTION

The Power of Design

How do we make people think seriously about their energy consumption? How is it possible to enhance consumer understanding of personal data and consumption in an exciting and engaging manner? How can TRE-FOR use data visualisation to communicate energy waste in a tangible way and thus create a stronger relationship to its customers? How can we communicate with the residents of the affordable housing unit Skovparken across language and cultural barriers and foster sustainable behaviour with regard to the use of electricity? These are just a fraction of many questions that have not only been asked but also answered by a group of 30 young communication designers and design managers. What triggered the questions was a request from TRE-FOR for a more appealing energy bill.
The Department of Communication Design at Kolding School of Design decided to ask its students to show TRE-FOR the power of design; to ask questions, and to see if they were able to redefine the request thinking that perhaps the energy bill was not the real issue. Visiting faculty, researchers and employees from TRE-FOR stood by the students and offered advice and inspiration. Subsequently, Teacher and Interaction Designer Olafur Haraldsson reused the outcome of the student projects as a basis for creating artistic development workshops together with TRE-FOR. The outcome of these workshops together with a selection of student projects is displayed in the present publication.

Kolding School of Design's collaboration with TRE-FOR suggests a different path. TRE-FOR is committed to making our future energy supply a joint affair using design as a tool; TRE-FOR takes the lead by formulating energy models that inspire the consumers. Hopefully, design will play a significant role in successfully implementing the Danish government's ambitious climate plan.
Denmark has what it takes to become a pioneer country in the development of intelligent energy systems; of simple, comprehensible energy bills and electricity metres that involve and motivate the consumer; of business models that give the consumer a whole new role as energy producer. Denmark can lead the way in designing solar cell panels and wind turbines that are functional and nice to look at.
Let's show you the power through powerful design!

IT IS AN ART TO GET THE FULL EFFECT FROM THE WORDS.
IN THE SAME WAY IT IS AN ART TO GET THE FULL EFFECT FROM PICTURES. TO MAKE A PICTURE IS A MORE RESPONSIBLE WORK THAN TO MAKE A STATEMENT, BECAUSE PICTURES MAKE A GREATER EFFECT AND HAVE A LONGER EXISTENCE.

Otto Neurath, 1936

Pia Pedersen
PhD Candidate &
Graphic Designer

006

THE POWER OF DATA VISUALISATION

Pia Pedersen, October 2011

In 2011 a national multi–energy company TRE–FOR contacted Kolding School of Design (DSKD) requesting the creation of a more attractive design of the energy bill it sends to its customers. But was that really what the company needed?

The bill is the chief one–way communication between TRE–FOR and the consumer containing information about each customer's energy consumption. The conclusion of the collaboration between DSKD and TRE–FOR was that this is not just about changing colours or typefaces on a piece of paper – it's about changing the relationship between TRE–FOR and the consumer, and also changing the consumer's relationship and behaviour towards energy and consumption of energy.

The way to approach this challenging task was through data visualisation, a powerful tool to clarify relationships and patterns; in this case data visualisation was supposed to enhance the consumer's awareness and understanding of energy consumption. The project had numerous challenges for both partners: DSKD had to understand energy and the data behind it as well as TRE–FOR needed to understand the power of design and design at it's best: making complex information comprehensible.

Data Visualisation
Data Visualisation, as the name implies, is the visual representation or presentation of data. Data can basically be everything given – facts or statistics collected for analysis or reference in the form of numbers, words or pictures.

Visualising data is important because at its best it can motivate our reasoning about the displayed data and change our way of thinking and our behaviour. Visualising data can be compared to a photographer taking a picture. The photographer takes a picture of a precise moment in time. It is a picture of reality, but he chooses the angle and the content – who, where, how and so forth; he slightly retouches reality and reframes it. Data, likewise,

is a picture of reality, a measurement, but we can pick and choose from that reality. We can visualise the message we want to convey. It is visual communication. When you look at a picture, it seems simple and obvious: just press the shutter release button on the camera and take the picture – that can't be that difficult! But the photographer has been through all kinds of considerations to actually take the picture that communicates what he wants it to communicate in an intelligible manner. When a picture seems obvious it is a good picture, but that doesn't mean it was simple or obvious to take. And that is what is both so amazing and delicate about a good picture. The same applies to data visualisation. A key notion is you can only design your picture by understanding its content –"If you don't understand it, don't design it" – and you can only communicate in an effective way visually through an intense process of sketching and tracing the elements of the picture.

Isotype's Notion of Transformation
Studying the history of Data Visualisation provides knowledge and inspiration for the process of transforming data into an understandable picture. Otto Neurath (1882 – 1945) is one of the most important figures in this field. He understood the necessity of humanising statistics so that ordinary people had access to knowledge about, for example, society. In the 1920s Otto Neurath invented Isotype, a graphic language with pictograms, whose purpose was to communicate in a universal and easily understandable manner. The design of the charts was completed through teamwork with very specific roles, one of which was transformation. The transformer was a person who functioned as a link between the expert and the artist by selecting, arranging and simplifying data into visual form. For more than 40 years Otto's wife, Marie Neurath (1898 – 1986), was the principal transformer. Transformation should be in the vocabulary of graphic design today. The importance of presenting data, mainly statistics, in Isotype charts was that ordinary people could grasp and comprehend it. Irrelevant subjects were not hidden behind a

decorative façade, because the subject itself had to be interesting. Today the field of data visualisation is rapidly expanding. More and more data is produced and made accessible, and visualisation tools are democratized. New trends in data sharing and computing technology encourage more and more designers to take up the challenge of visualising data – although it is not a simple task, especially when it comes to making data visually accessible for the public. Here lies a danger, as the famous statistician Edward Tufte claims, of over–compressing and decorating data.

Preparation
To overcome the challenges of the TRE–FOR project the students received research–based keynotes on data visualisation and power, and keynotes on TRE–FOR and design. They were introduced to Marie Neurath's transformations through a workshop with small transformation tasks, followed by a talk showing pictures of original unpublished sketches. This provided the students with tools for understanding and visualising data. Furthermore, a project at DSKD named DesignCamp2011 dealt with the "Use, Consumption and Visualisation of Electricity." This Designcamp taught us, in brief, that we cannot expect to change our behaviour towards energy consumption when we do not have a feeling for or a relationship to energy. We simply do not have a "picture" of energy.

> "A RULE SHOULD NOT BE BROKEN UNLESS THERE IS A GOOD REASON FOR IT. AND OF COURSE, OFTEN THERE IS A GOOD REASON"

Marie Neurath, 1974

This is quite significant for this specific project. TRE–FOR helped us by giving several talks both at DSKD and at TRE–FOR, which was of great importance for our understanding and getting a feel for the company TRE–FOR. Finally the splendid works of interaction designer Ólafur Haraldsson, the Rotterdam–based design studio Léon & Loes, and graphic designer René Christoffer inspired the students to think outside the box, not only in 2D but also in 3D, and to be original and innovative by applying visualisation.

Thirteen Versatile Outputs

Thirteen very different and original outputs proved that the students actually used the preparative tools. The proof lies both in their design process where they conducted thorough surveys and ana– lyses, and in their concept developments. It showed in their way of cooperating across fields, between design managers and designers, and also in their way of being unafraid of asking questions, con– tacting consumers and digging into the hard–core data. Lastly, it showed in the versatile outputs: data visualisations in the form of sound; a campaign containing the one important number – 10%; strong visual metaphors based on our face and body; games and movies with play and narrative–based learning … all of which is presented in this publi– cation. The students' designs did indeed go further than changing the colour and lengths of a bar chart. By choosing an approach involving an analysis of both the data and the receiver of this data, and wor– king together in mixed teams of design managers and designers, they shed new light on the company TRE–FOR through the power of data visualisation. Today, thanks to these projects, we actually have a picture of energy.

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DETAILS SHOULD ONLY BE ADDED WHERE THEY CONVEY MEANING.

Marie Neurath, 1960

PROJECTS

@
010

Pernille Frost Andersen
Nanna Rosalia Sigaard
Christina Charlotte Rasmussen

THE BILL APP/
THE FEEL BILL

How can we use data visualisation to design an application that shows the consumer´s energy consumption within the household in a more comprehensible way?

We have chosen to present the data by means of an application, a (unisex) figure we call Bill.

Bill has a body, and his various organs act as metaphors which each symbolizes the different parts of the organism and what that organism consumes.

The reason we have chosen to use the human body as an image of energy consumption is that we want to create a parallel between the user and his or her energy consumption and the energy used in the purification system in the body. We find it easier to connect with the body because it is the closest

we can get to ourselves and hence get energy consumption "under the skin" and feel it.
Our intent is to visualise this system for the individual consumer so he/she can see the effect as it is happening. For instance, when you use the faucet or the toilet the application registers the actions and immediately shows the consumption of water.

The consumer has the opportunity to investigate the application more thoroughly and seek information about energy consumption and other relevant facts by touching different parts of Bill´s body.

Subject and description – The Bill app – Feel Bill

The subject is about visualising data in different forms, from different points of view and representing the final visualisations for TRE-FOR and thereby giving TRE-FOR the opportunity to see data transformed and visualised through other media than an electric bill.

We have chosen to make an application for smartphone users but it could also be used as a private profile on the www.trefor.dk that you can log in to. The application is connected to the meter in the house and registers the household's consumption of electricity, heat and water.

The meter sends data to the Bill application so the users can monitor their usage of energy. We have chosen to present data through an application figure Bill (unisex figure). Bill represents the body and the organs which we have redesigned into different metaphors which each symbolise the organs and the consumption.

We have chosen to use the human body because we want to create a connection between the user and his/her energy consumption by projecting the energy usage to the purification system in the body. We find it easier to connect with the body because it is the closest we can get to ourselves and really get the energy consumption under the skin and feel it. We want to make this system visible for the consumers so they can see the effect when it takes place.

For instance when you use the faucet or the toilet, the application registers the actions and immediately shows the consumption. The consumer has the opportunity to investigate the application more thoroughly and seek information about his/her consumption and other relevant facts by touching different parts on Bill's body. This application could be linked together with TRE-FOR's smart home system and be the character or figure in the smart grid/ TRE-FOR universe.

Further on this application can be customised by or to the consumer so Bill could change looks or name in many different themes.

Problem statement
Using data visualisation how are we able to design an application that shows the consumer's energy consumption in a more understandable way when it takes place in the household?

Purpose
The overall purpose with this project is to transform data into visualisations that can provide TRE-FOR with new opportunities, ideas and tools within the field of communication design.
Our main purpose with the Bill application is to create awareness about energy usage and get the consumer to interact using this application that could serve as a replacement for the current electrical bill.

Goal
We have designed a concept for the application and want to show the application in an analogue design installation by making small movies showing the touch points in the application as metaphors. By using film in the installation we want to show the movements and how we think that the application should work in reality on your phone.

Knowledge-related basis
Company trip to TRE-FOR, Power-days seminars and historical seminars about data visualisation.

Time schedule for the project and method
The project took place during a period of four weeks at the Kolding School of Design. The project was divided into four phases:
– Research: Brainstorming and sketching (2D)
– Experiments: Concept development and mock-ups.
–Visualisations: Testing, mock-ups and further development of the design installation and application.
– Working on the final result: Final finishes of the installation, application and presentation

Reference list
TRE-FOR's homepage www.trefor.dk, material from TRE-FOR seminar and "The human body, image and emotion" by Philippe Comar, "Videnskabens verden, mennesket" by Dr. Bernard Dizon and "The body, life science library" by Alan E. Nourse.

Reflections
– Process: In retrospect, this predefined assignment by TRE-FOR was challenging, because it was a wide or open subject. Therefore, we could not delineate our approach to the subject and define a problem we could solve through design and data visualisation. The start of the process had its difficulties; for
instance, which data should we use and also which

were relevant for TRE-FOR to communicate to their consumers? We had a lot of ideas but no concrete concept though we knew that we wanted to show consumption and we wanted to integrate the human body.

Designer vs. Design manager:
The relationship between the designers and the design manager was characterised by many contrasts like different approaches to how to solve the problem of data visualisation and the problem of communicating through design in the way that TRE-FOR is represented in the final solution. In the start of the process the designers think out-side-in by starting with thinking out of the box, abstract and broad, versus the design manager who thinks more on behalf of the company with an in-side-out approach.
Another contrast is the practical versus the theoretical approaches. By having these different approaches we experienced that throughout the process we challenged each other on different levels. By teaming up in different groups comprising both designers and design manager, synergy occurs in an interdisciplinary cooperation which embraces different design approaches and thereby insures that the problem/subject will be closely studied from different angles.

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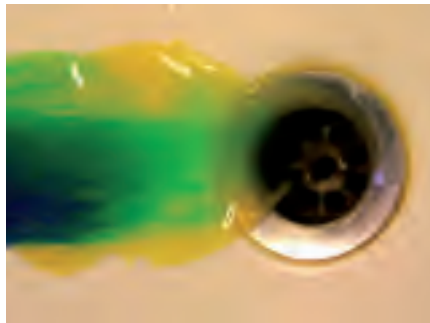
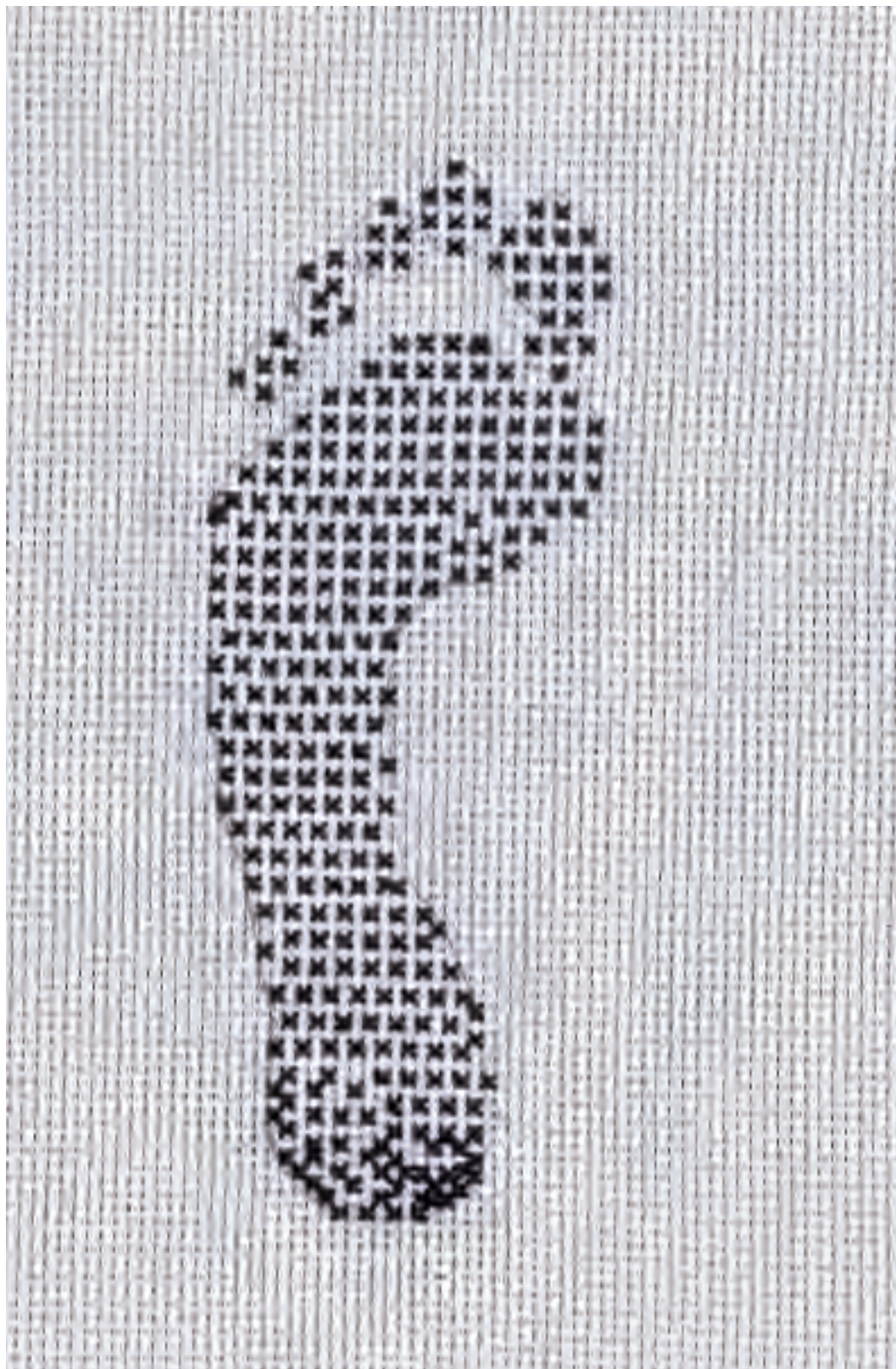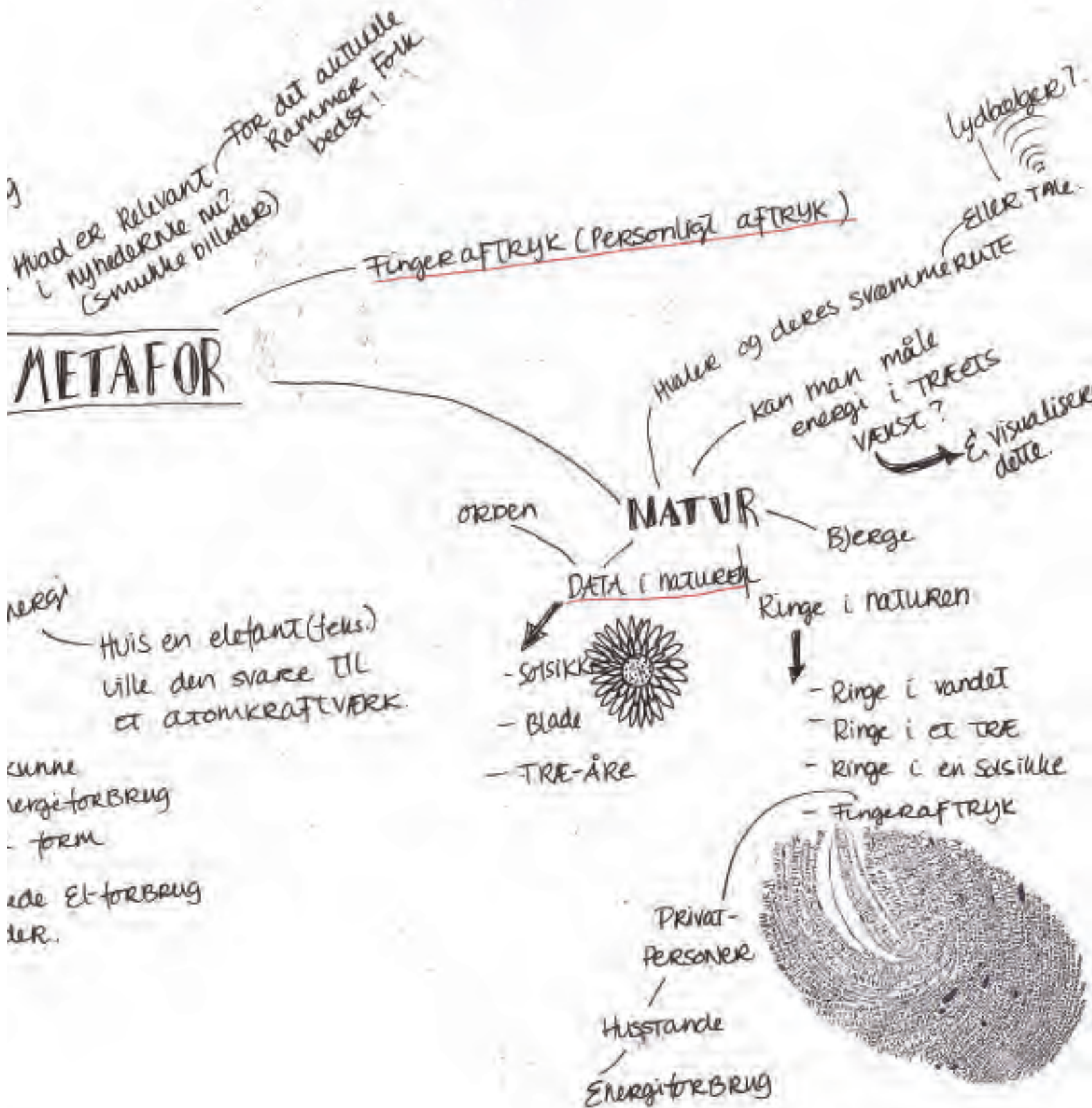**016**

Line Marcussen Simonsen

YOUR FOOT PRINT

How do I make people think seriously about their energy consumption?
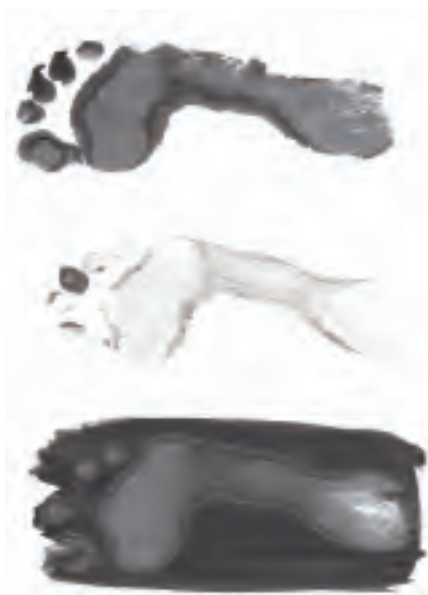
I want people to be more personally involved in their consumption of electricity. Hence I have chosen to use the foot print as a metaphor for taking a stand in relation to electricity. There is a lot of personal data associated with a foot print, and all consumers will leave their own individual foot print based on their consumption.

We must consider our consumption of electricity for the sake of the environment and ultimately our continued existence on this planet. If we all decided to make even a small effort to save electricity it would have a huge impact on the environment and on carbon emissions.

People need not lower their standard of living and sit in dark rooms in order to save electricity, but by making a few important modifications to our life style we can all effect a tremendous change!

Hvad er Relevant (For det aktuelle Rammer Folk bedst!) i nyhederne nu? (Smukke billeder)

Lydbølger?

Fingeraftryk (personligt aftryk)

eller tale.

METAFOR

Hvaler og deres svømmerute

Kan man måle energi i TREETS VÆKST? → & visualiser dette.

Orden → **NATUR** — Bjerge

DATA i naturen

energi — Hvis en elefant (feks.) ville den svare til et atomkraftværk.

Ringe i naturen

– Solsikke
– Blade
– TRÆ-ÅRE

– Ringe i vandet
– Ringe i et Træ
– Ringe i en solsikke
– Fingeraftryk

kunne
energiforbrug
form
de El-forbrug
ler.

Privat-personer
/
Husstande
/
Energiforbrug

GENOPRETTE KROPPENS NORMALE ENERGIBALANCE.

VARIATION AF FARVEKRAFTIGHED SOMMER | VINTER

24 TIMER

AKKUPUNKTUR 'FODMASSAGE' HVORDAN GÅR FOLK – HVOR LIGGER TRYKKET PÅ FODEN

HVILKEN INFO ER VIGTIGST? EL, VARME, INTERNET-FORBRUG.

TAKE A STAND

DIT AFTRYK

DIT AFTRYK

Dag   Uge   Måned

1 4 5 8,7
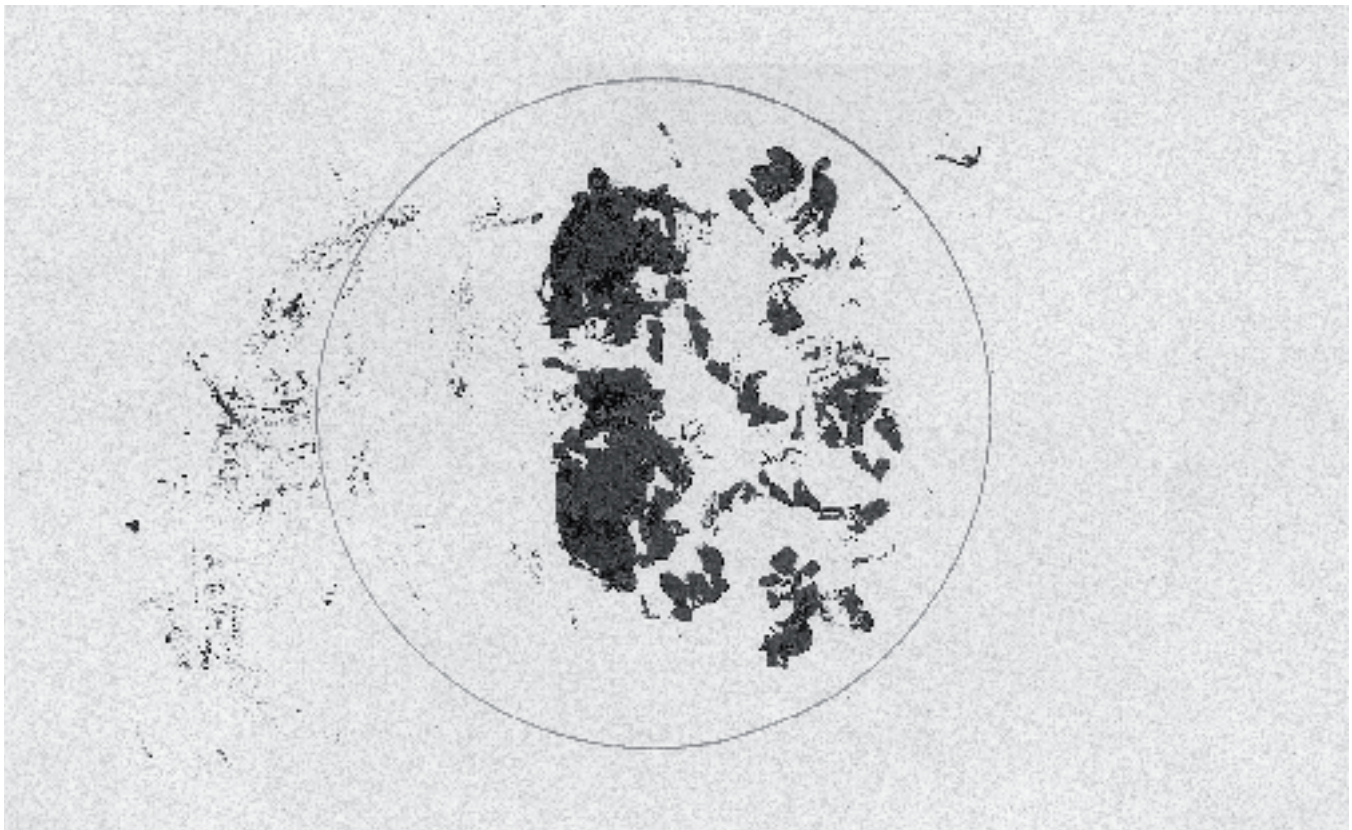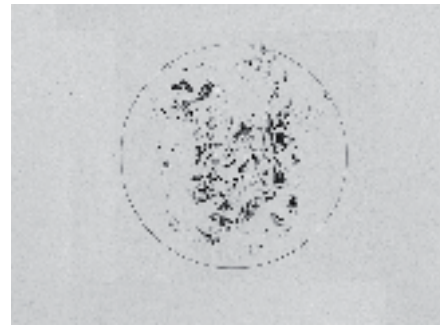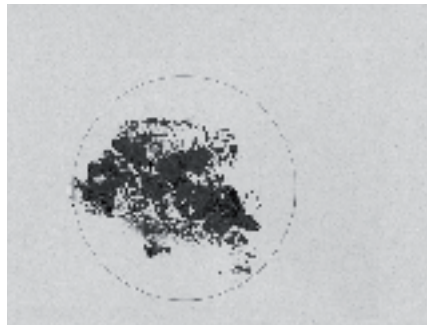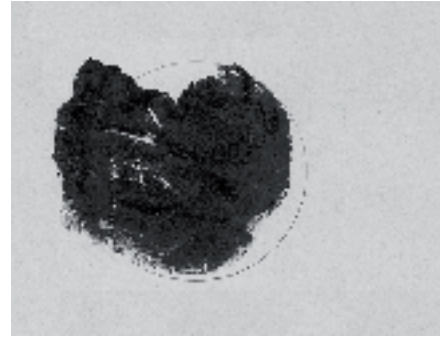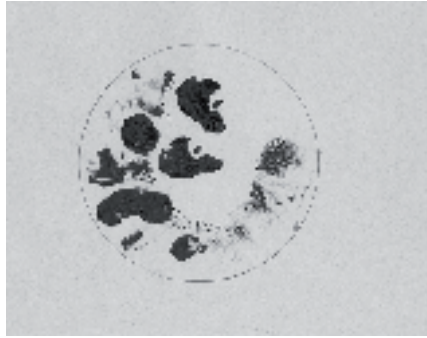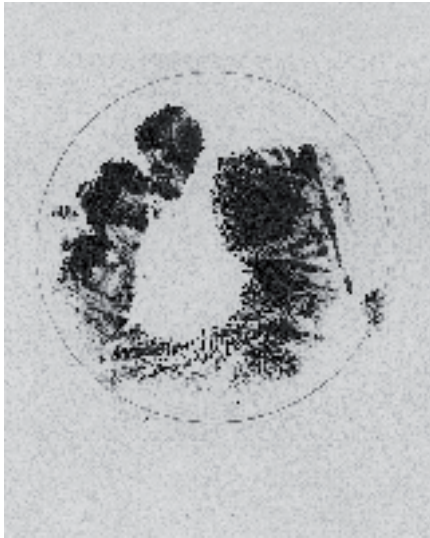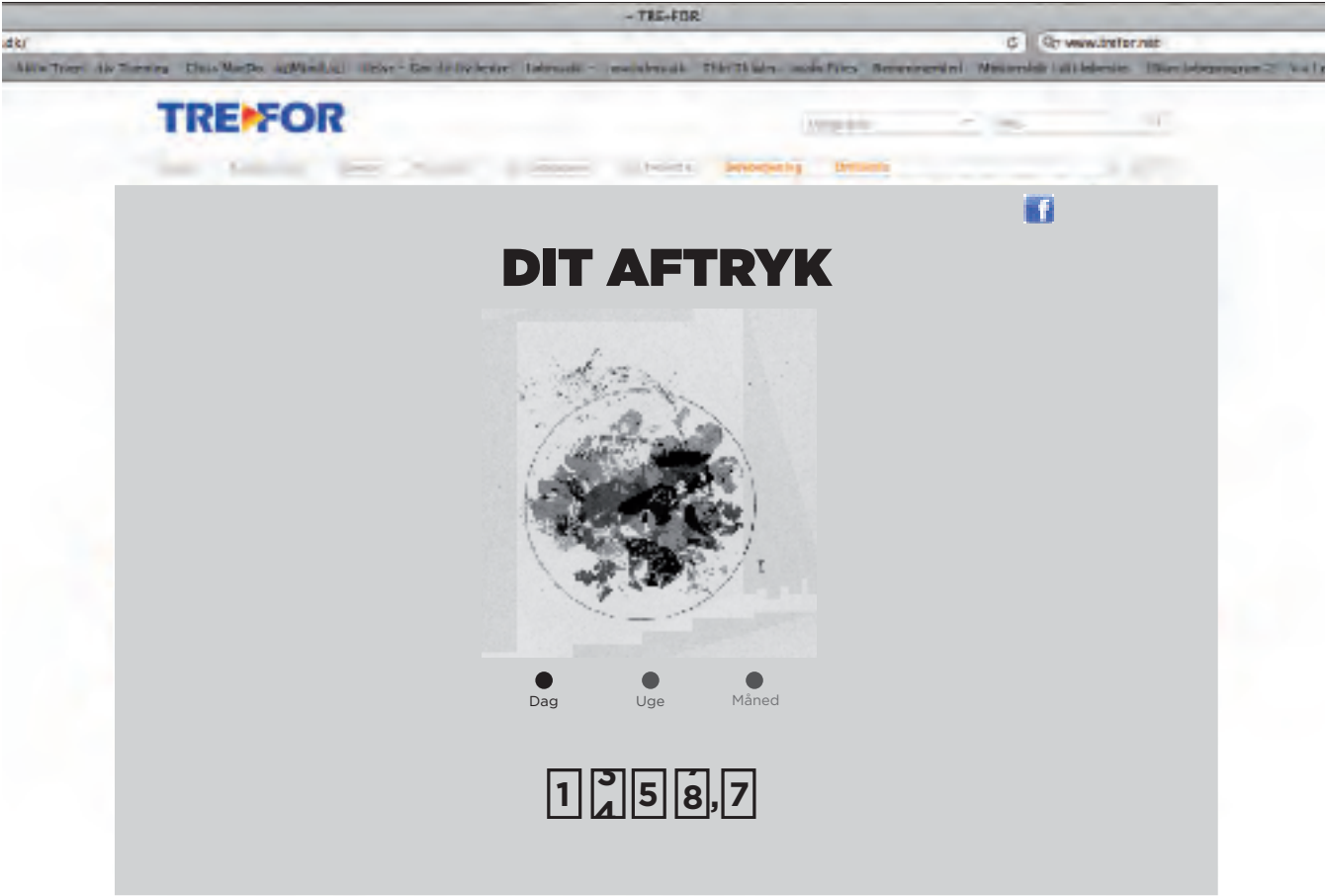
DIT AFTRYK

Sådan er acontoraten beregnet for perioden 01.07.2010 - 30.09.2010

Abonnoment EL-Net	1 stk á 79,6493 kr.	79,65	kr.
Transportbetaling	375 kWh á 0,1380 kr.	51,75	kr.
Offentlige forpligtelser	375 kWh á 0,0850 kr.	31,88	kr.
Elafgift	375 kWh á 0,6190 kr.	232,13	kr.
Distributionsbidrag	375 kWh á 0,0400 kr.	15,00	kr
Energispareafgift	375 kWh á 0,0620 kr.	23,25	kr.
Moms 25% af 433,66		108,42	kr.
I alt TRE-FOR El-net A/S		**542,08**	**kr.**
Abonomment El-forsyning	1 stk. á 25,2055 kr.	25,21	kr.
Basis el	375 kWh á 0,4074 kr.	152,78	kr.
Balancegebyr til Energinet.dk	375 kWh á 0,0007 kr.	0,26	kr.
Moms 25% af 178,25		**44,56**	**kr.**
Ialt TRE-FOR Energi A/S		**222,81**	**kr.**
Aconto i alt el		**754,89**	**kr.**

@

022

Marilyn Sonneveld

THE TRE-FOR TREE

My basic premise is that people have to take better care of the environment.

One of the most important factors affecting the environment is energy consumption. People use far too much energy, and they are unaware of the consequences of their energy behaviour.

My idea is to create a mechanism, a symbol through which consumers can check their energy consumption and its effect on the environment.

I have chosen a tree to symbolize and react to energy behaviour. If you use a lot of energy the three will look withered and unhealthy; if you use less energy the tree is thriving, full of fruits or colour. Additional symbols are represented by a heater, a tap and a plug point. If you use a lot of water then more taps will appear on in the tree, and if you use a lot of electricity then there will be more plug points in the tree. You can see the tree in the four seasons and compare how much more energy you use in the winter than in the spring.
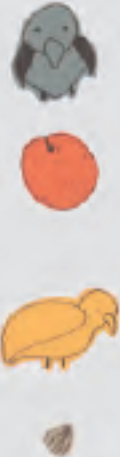
If you wish, you can check your tree every day and see the differences on a daily basis. The programme will save all of your trees, from each single day. For example, you can go back and check your tree in February 2009 and see if you have become a better consumer (i.e. consume less energy). Or if you want, you can see how much energy you consumed on a Saturday in 2010. The date is given under the tree.
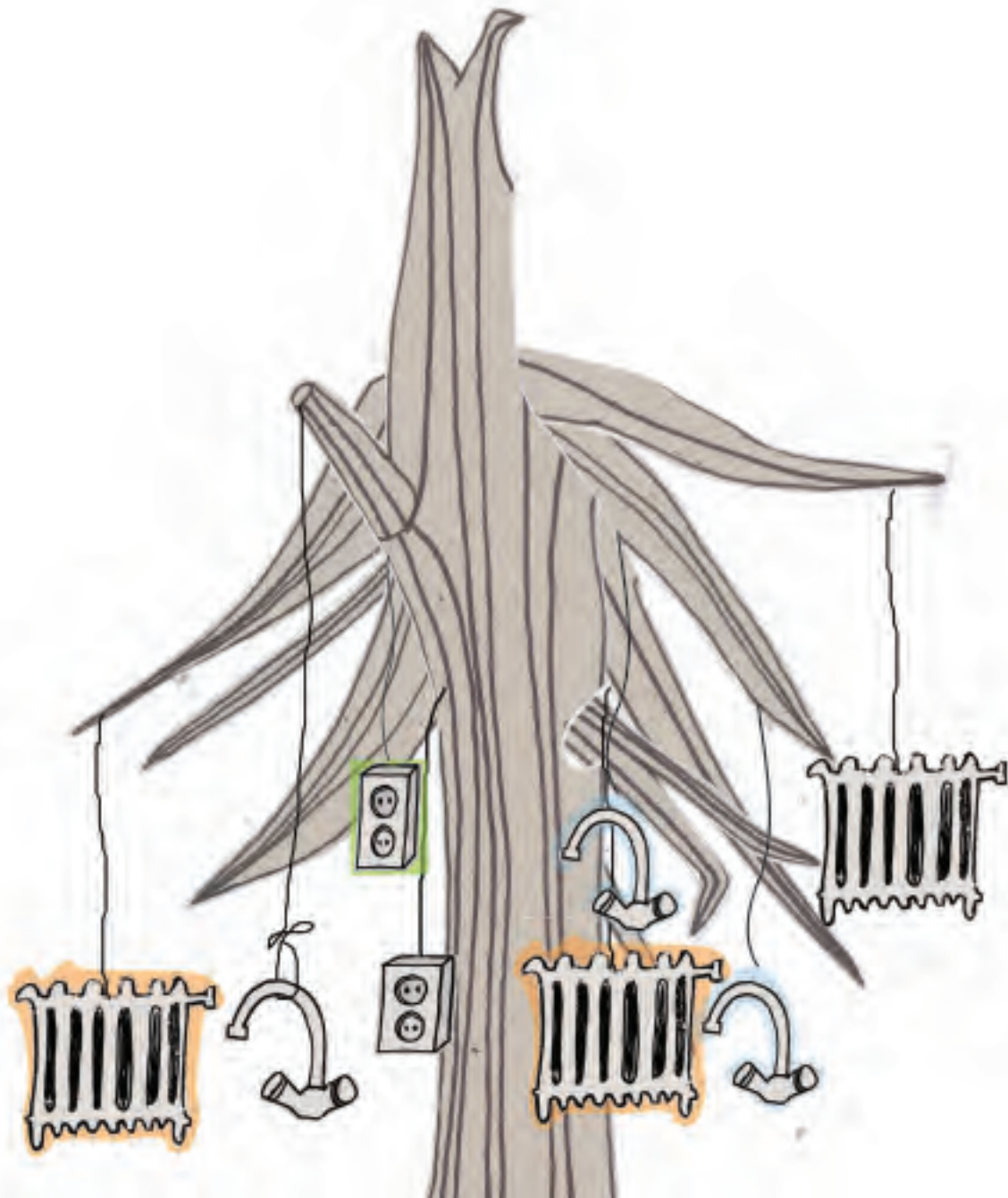
LESS ENERGY BILL TO MUCH ENERGY

IF YOU ARE USING LESS ENERGY YOU WILL GET A REWARD
WITH EVERY ..? KREONEN YOU WILL GET A PICTOGRAM.
EACH SEESOIN HAS HIS OWN PICTOGRAM

NORMAL

WHEN YOUR USING MORE ENERGY THEN YOUR BILL...
WITH EVERY ..? KREONEN YOU WILL GET A NEW PICTOGRAM
WATER, ENERGY, HEAT ARE SEPARATED IN THE CALCULATION

ELECTRICITY

WATER

HEATER

CONTROL YOUR ENERGY
BEHAVIOR WITH YOUR TRE-FOR TREE

THE TRE-FOR TREE

@

028

Line Monthiers

IN YOUR FACE

How do you make people care about their energy consumption?

People use energy excessively, but they don't really pay much attention. One bill, one big number, they have no idea what they are paying for.

How can we make those numbers speak?
How can we make people listen to them?
The point here is to create a strong link, a dialogue between people and their own consumption, make them aware, to make them want to change their behaviour.

What if the data could be directly reflected in your face? The more you consume, the more contorted your face would be. Just upload your picture i.d. and get your face pimped. I was interested in making

a more experimental project, to ask the question: scary or funny? To see how far I could go, how closely I could make it work with the data.

Would you change your behaviour after seeing how monstrous you look?

Visualisation of Data

How to upset people about their own consumption ?

People make excess, but they can't feel it. One bill, one large figure, no idea of what the total corresponds to. How to make those numbers speak? How to make people listen to them?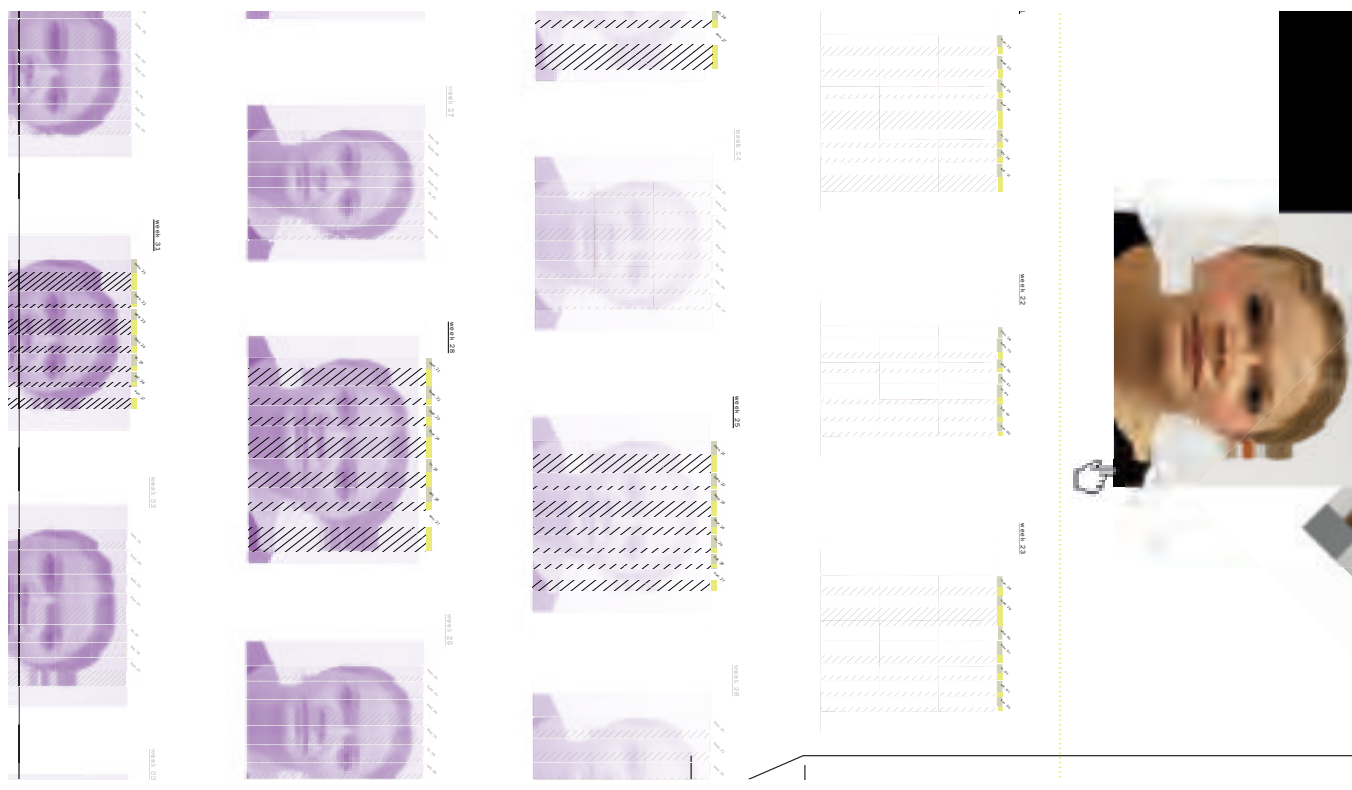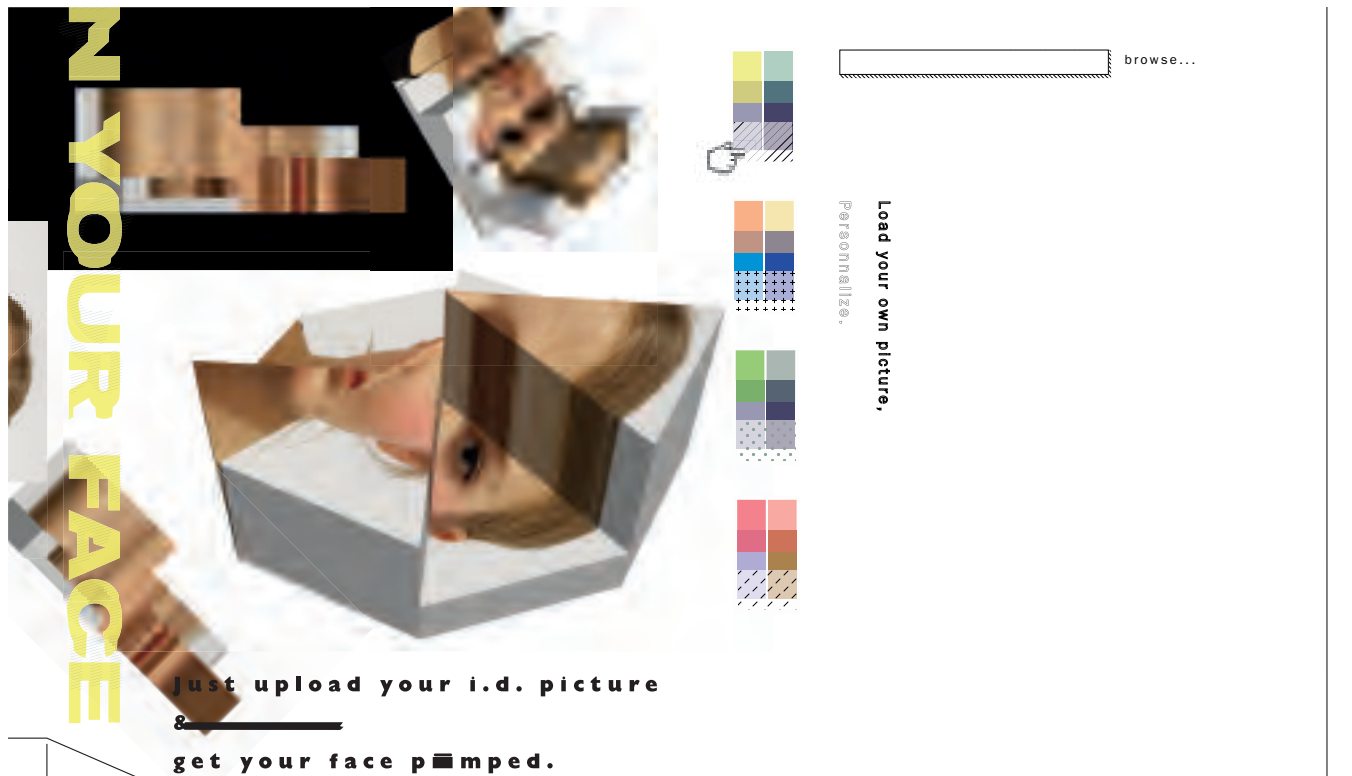 The point is to create a strong link, a dialogue between people and their own consumption; to make them aware and to make them able to change. TRE-FOR offers everybody the possibility to follow their consumption on a daily basis thanks to the "smart-meter". It enables you to control each machine in your house, to see how much electricity it uses, in real time.

One of the considerations was to enhance this new idea of data always evolving, day by day, at human scale, encouraging immediate-action. Another consideration was to find a real way to reach people, to concretise electricity, water, warm, always there, so "fixed", so easy to turn on and off, but ignoring the invisible consequences.

What if the data would directly affect your face? The more consumption, the more distortion. Just upload your id picture and get your face pimped. I was interested in making a more experimental project; to ask the question: scary or funny? To see how far I could go to make it work with the data.

The whole reflection is based on the strong example of a photo booth, which I myself never become tired of, with its different possibilities and the power to make people laugh by deciding a new face for them. Bill Viola, Alain Fleischer and Nam June Paik also made interesting works involving face and distortion. It was important to do a lot of research to come up with the strongest ways to visualise data on the face: photo montage, collage, scanner, slit-scan, 3D, and creating bugs on faceresearch.org. Then link the different deformations with data.

The system had to be upsetting but also very clear and understandable for everybody. So, the face is simply cut in seven slices, one for each day of the week, and the excesses affect the picture in different ways so you do not get bored. Flat or 3D, slices, stairs, "pie graphic", ... Then the face becomes a map, showing different criteria, spreading, evolving, making data concrete. This would be used for an application or a personal page on the website.

°°WORDS MAKE DIVI-
SION, PICTURES MAKE
CONNECTION°°.

Otto Neurath, 1936

To keep this idea of personal space, everybody
would be invited to customise the colours of
graphics elements. Then explanations would help
you to save electricity, showing which objects
consume the most and how you can reduce it.

People make excesses, but they can't feel it so much.
One bill, one big number, no idea of what this total
corresponds to.

How to make those numbers speak?
How to make people listen to them?

The point here is to create a strong link, a dialogue
between people and their own consumption.
To make them aware, to make them able to change.

And if the data would directly affect your face ?
The more consumption, the more distortion.

Just upload your i.d. picture & get your face pimped.

Then the face becomes a map, showing differents
criteriums, spreading, evolving, making data concretize.

IN YOUR FACE

Personnalize.

Load your own picture,

browse...

Just upload your i.d. picture

&

get your face pumped.

034

Anne-Mette Wind Jeppesen
Rune Magelund Alexandersen
Signe-Lill Valkvæ
Lasse van den Bosch Christensen
Nynne Nadja Boje Sander

STRØM/ ELECTRICITY

How can we communicate with the residents of Skovparken across language and cultural barriers and instil in them a sustainable behaviour in regard to use of electricity?

STRØM (Electricity) is a campaign to communicate with the residents of Skovparken in Kolding, across language and cultural barriers, about electricity and ways to save it.

The campaign is planned in three stages: first a visual campaign, then an active scrapbook, and finally an interpretation and reward system as motivation for a continuing positive behaviour.

PROBLEM:

How can we communicate across language- and cultural barriers wich will result in a sustainable behaviour for the residents in Skovparken?
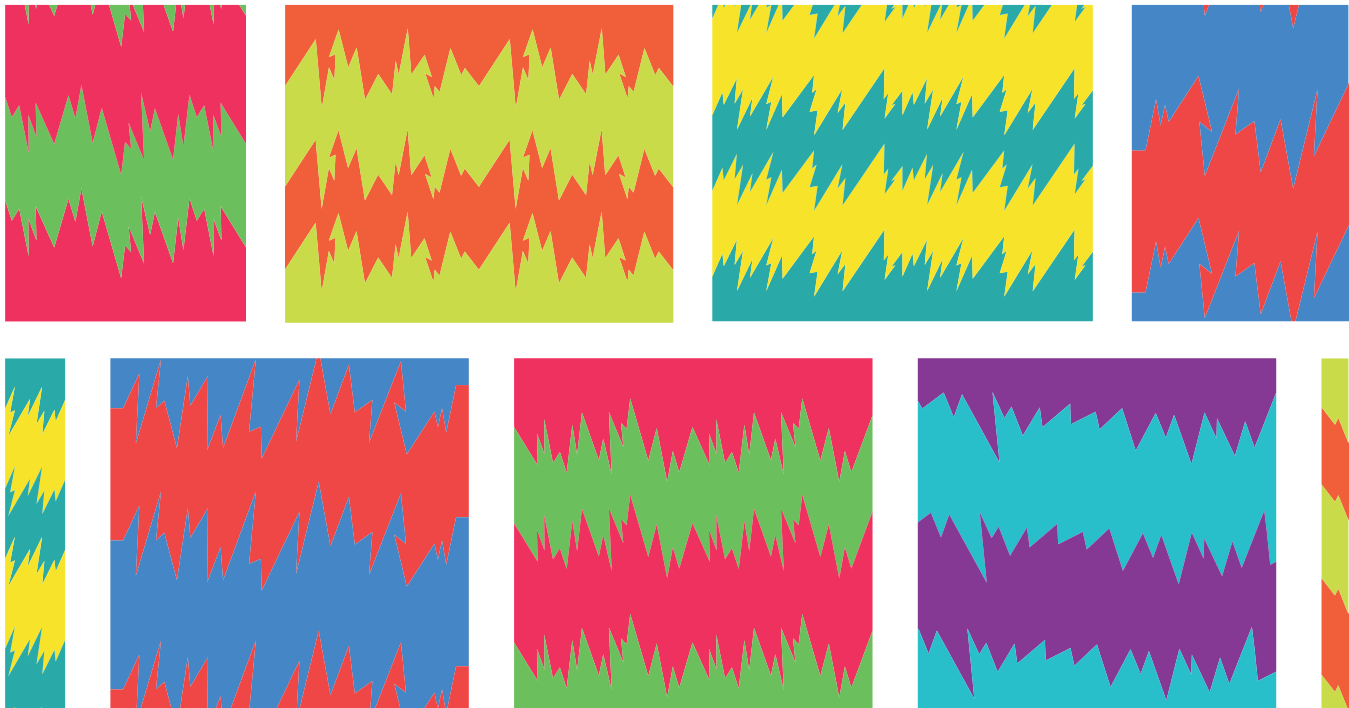
RESEARCH:

The children in Skovparken are being used as inter-preters for their parents.

The children in Skovparken can teach their parents valuable skills such as waste separation.

Step 1:

The children of Skovparken will all recieve a book and starterkit for the concept. The book contains mainly visual information about electricity and explains the concept of STRØM.
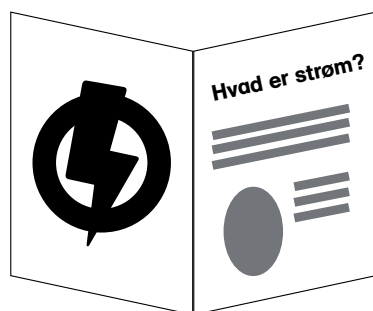
Step 2:

Depending on how much you save in electricity as a family you will be rewarded a number of lightning-tokens each month. The tokens will come along a 'childrens-bill' attatched to the regular electricity bill. Further more you will recieve a new page/spread for your STRØM book.

Step 3:

The lightning-token system works as following: Each token is of a certain 'value'. When saved to x-amount of lightnings you have the posibility to trade theese in for STRØM-badges, T-shirts, or other merchandise.
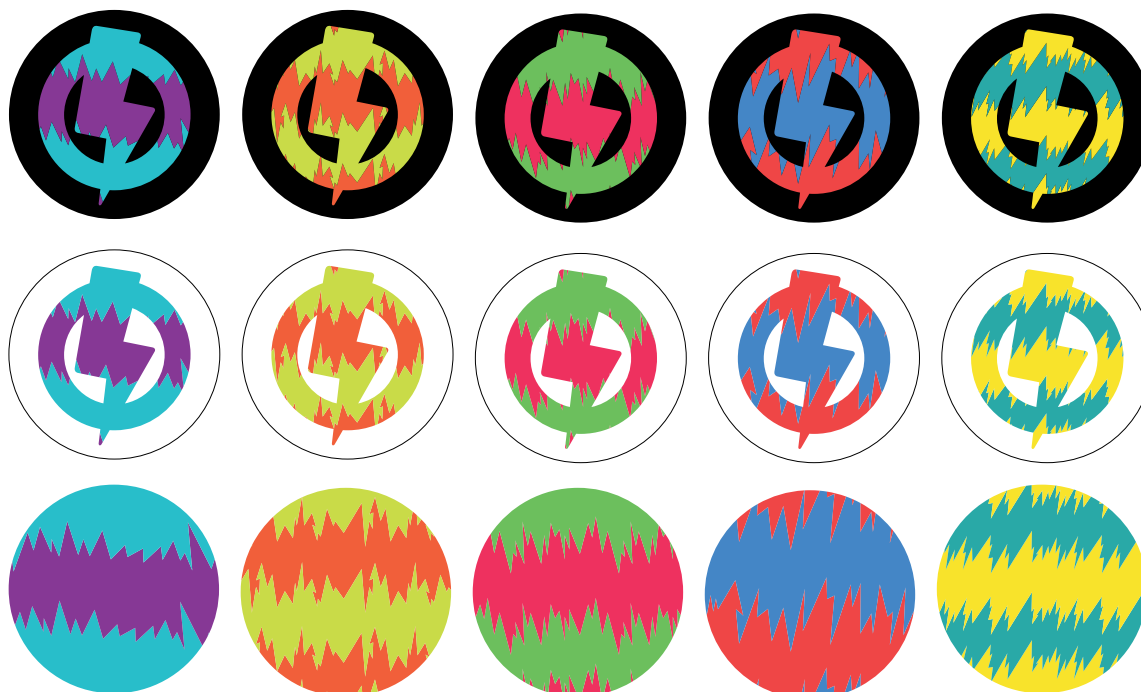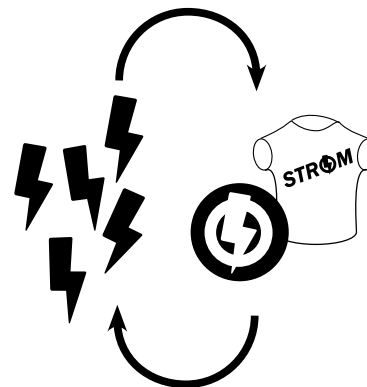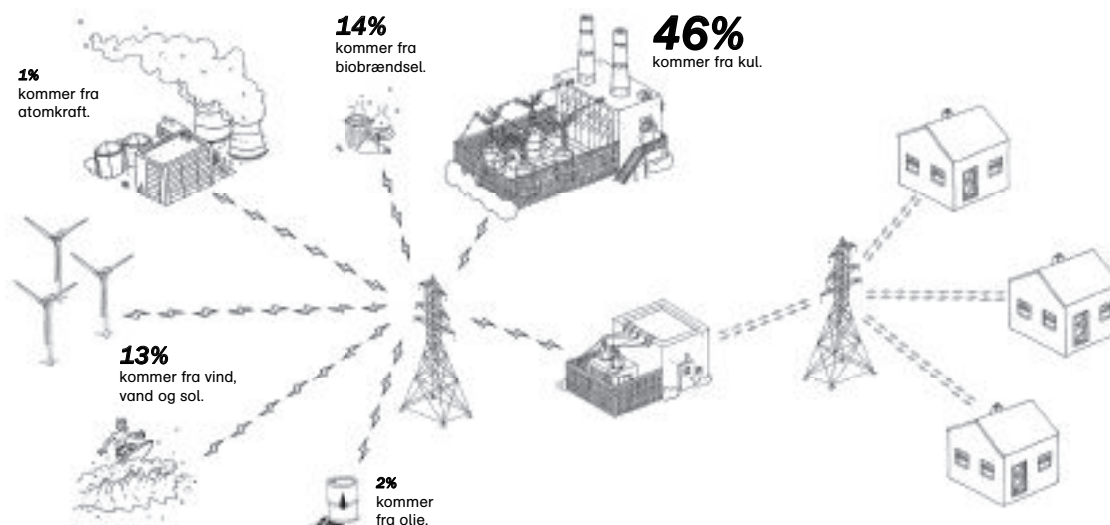
Hvad er strøm?

STRØM
Chilrens Bill:

Congratulations you been rewarded:

Save them and swab them for a badge.

ILLUSTRATION - RUNE

1%
kommer fra
atomkraft.

14%
kommer fra
biobrændsel.

46%
kommer fra kul.

13%
kommer fra vind,
vand og sol.

2%
kommer
fra olie.

040

Søren Siebuhr
Carl Fredrik Angell
Sveinung Sudbø

MY TRE-FOR

How do we change TRE-FOR's relationship to its customers? And how do we make the public save electricity and be active users on their own incentive?
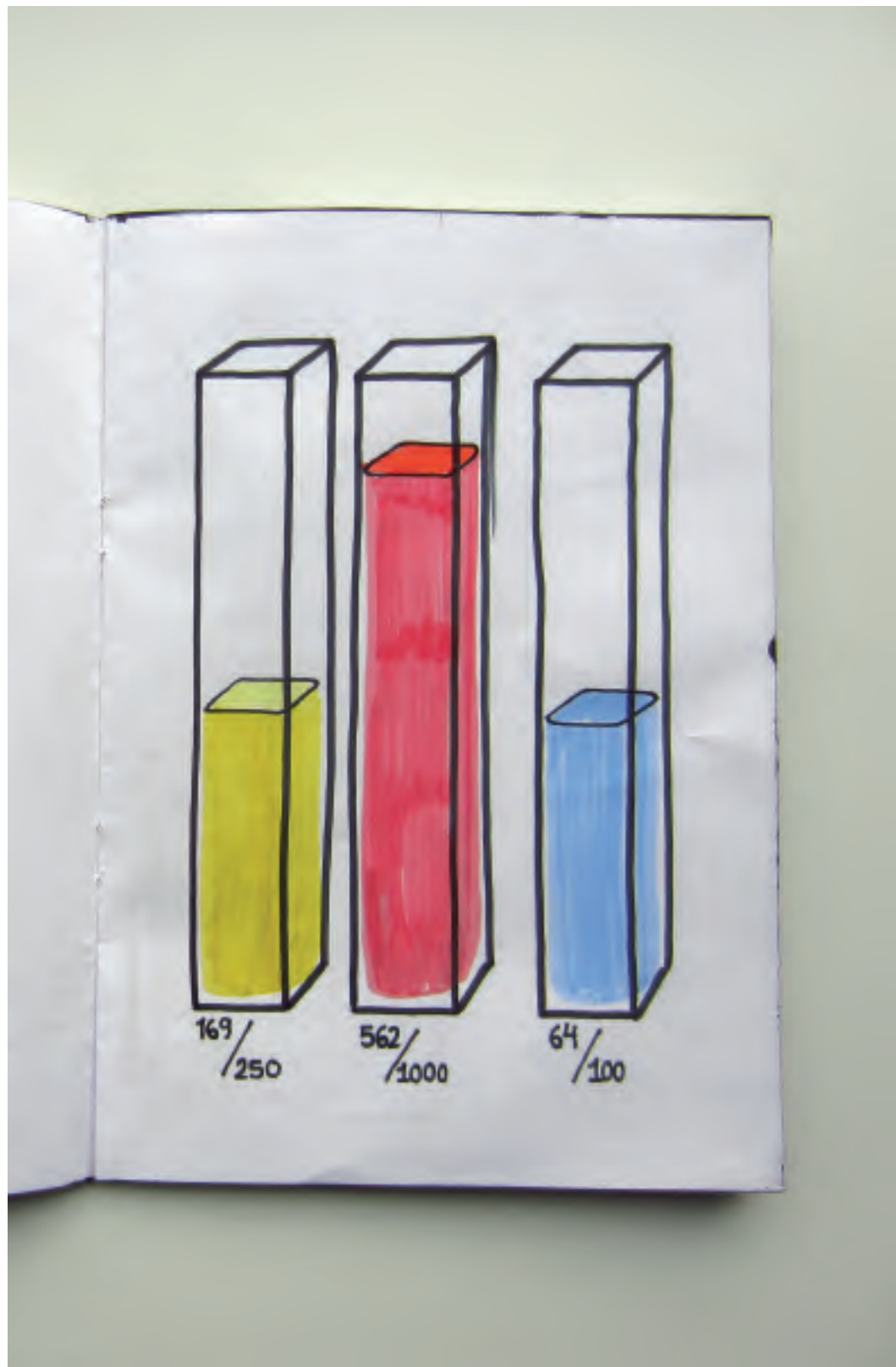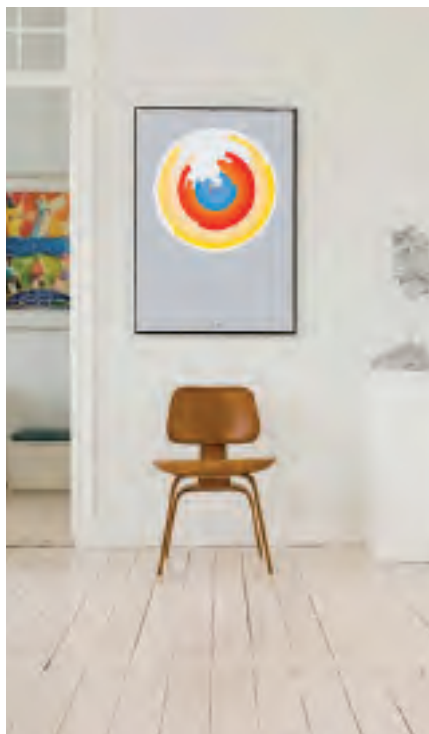
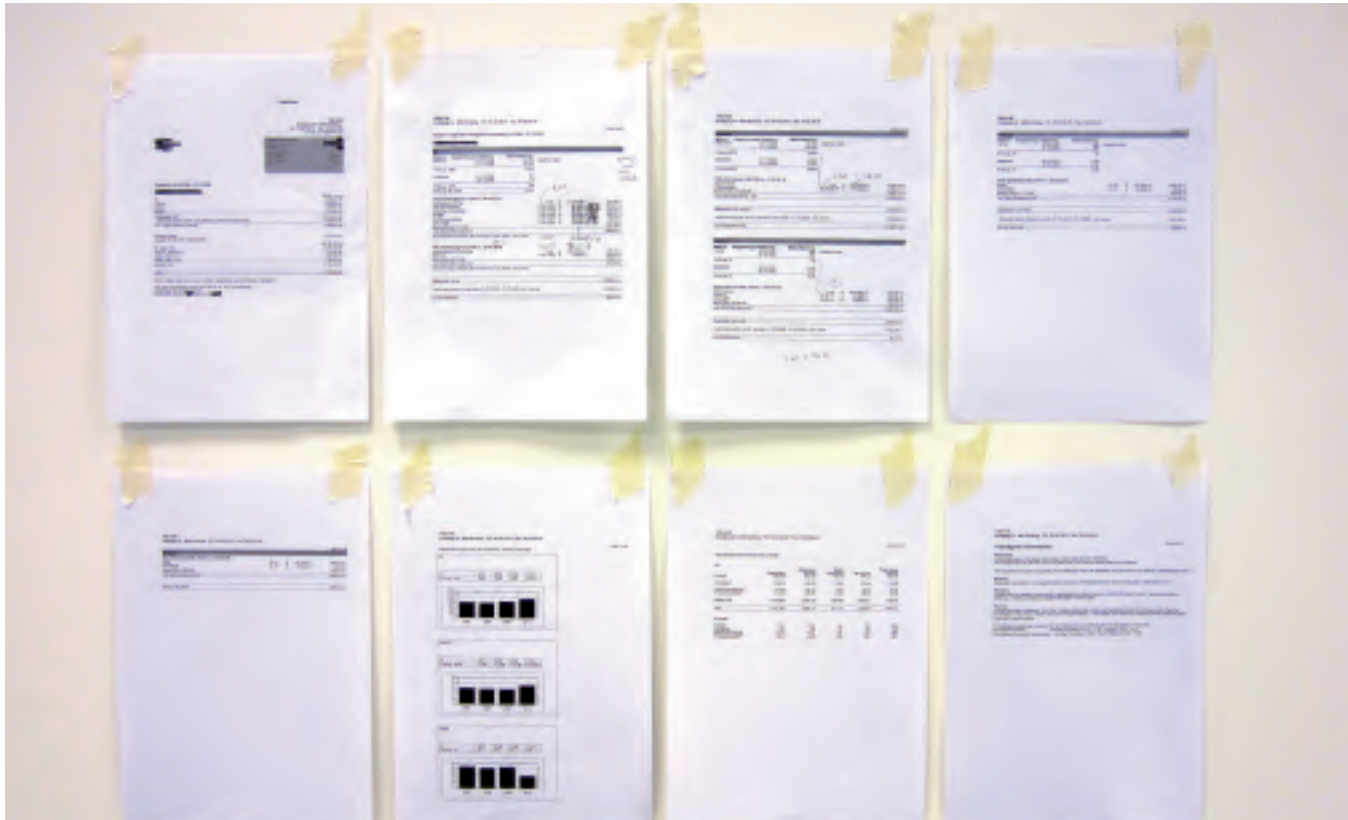What do we need?

A daily reminder.
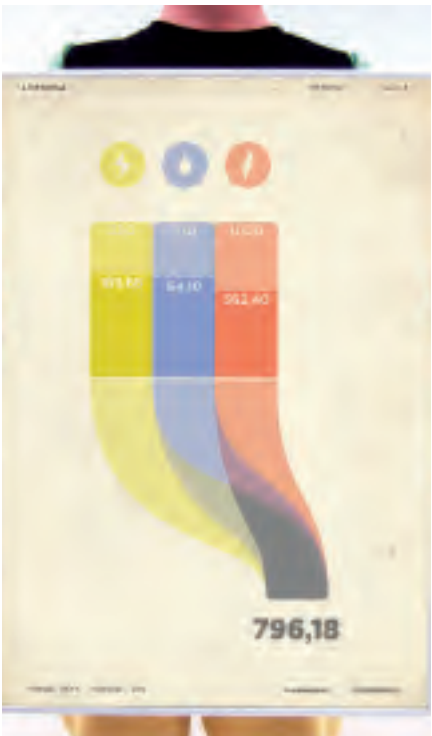The ability to explore our own consumption.
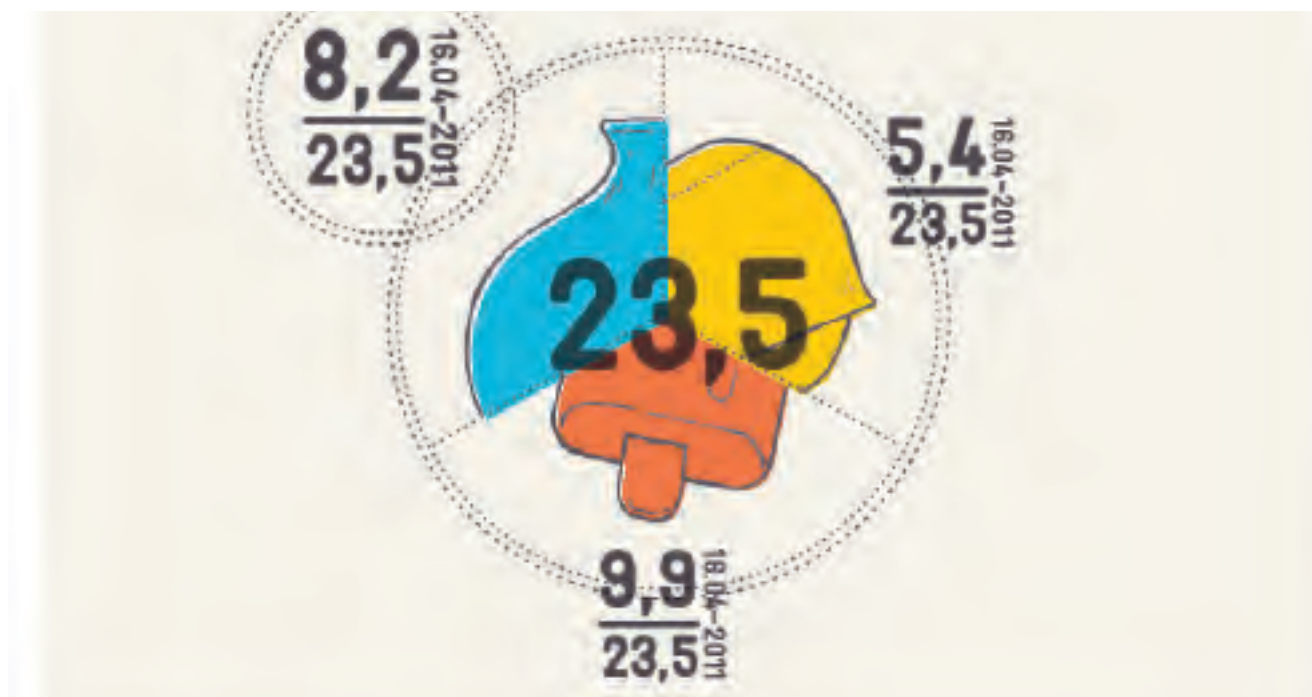Make our own conclusions about our utility use.

We need a solution that works for a large variety of people. A physical poster (E-Ink) that informs you of your current balance.

Lets you explore. Simple.

046

Stine Rasmussen

THE THREE CASHIERS

A short film about contemporary trends, excessive consumption, and the conflicts this can cause in a marriage.

A short film about contemporary trends, excessive consumption, and the conflicts this can cause in a marriage.

My point of departure is the individual and his or her consumption, but also our entire society's attitude to consumption. From my perspective, our society reflects a trend to take something as basic as electricity for granted. Exactly because it is so basic, it may be hard to notice and hence it feels intangible. It's just there. I want to focus on over consumption – a trend that is not restricted to electricity alone. In order to understand human beings, including myself, I decided to focus on my own energy consumption during the first week of the project. And I made some shocking discoveries which drew my attention to my own habits. Or rather vices. I realized that, unconsciously, I turn a switch on and off 43 times a day. I belong to the very group of people to whom this film is directed. In fact, I believe that my entire generation and the generation before us belong to that category, "the over consumer. "In addition to this study featuring myself as the main character, I chose to conduct a limited consumer survey on the streets of Kolding. Carrying my video camera I went in search of the ordinary citizen of Kolding and his or her prevailing attitude to TREFOR and to electricity consumption.

The result of my survey made me realize that TREFOR was by and large absent from the consciousness of ordinary citizens of Kolding..

The project resulting from this film is meant as a social commentary, the kind of commentary which will hopefully make the viewers consider and reflect about their own consumption. These are my criteria of success. I have no intention of forcing my opinion on the viewer, with raised fingers and scare tactics. I am convinced that change requires action—action, which comes from within, from the viewers who embrace my message.
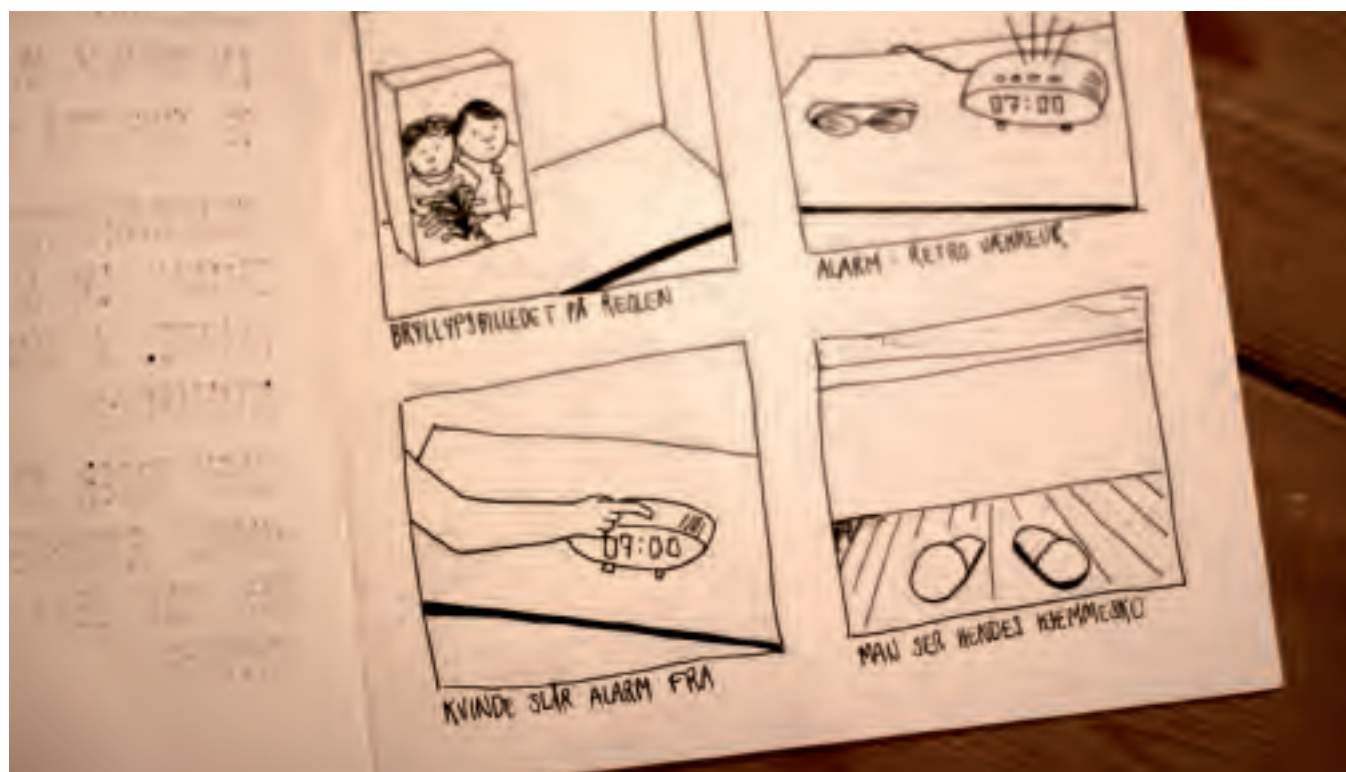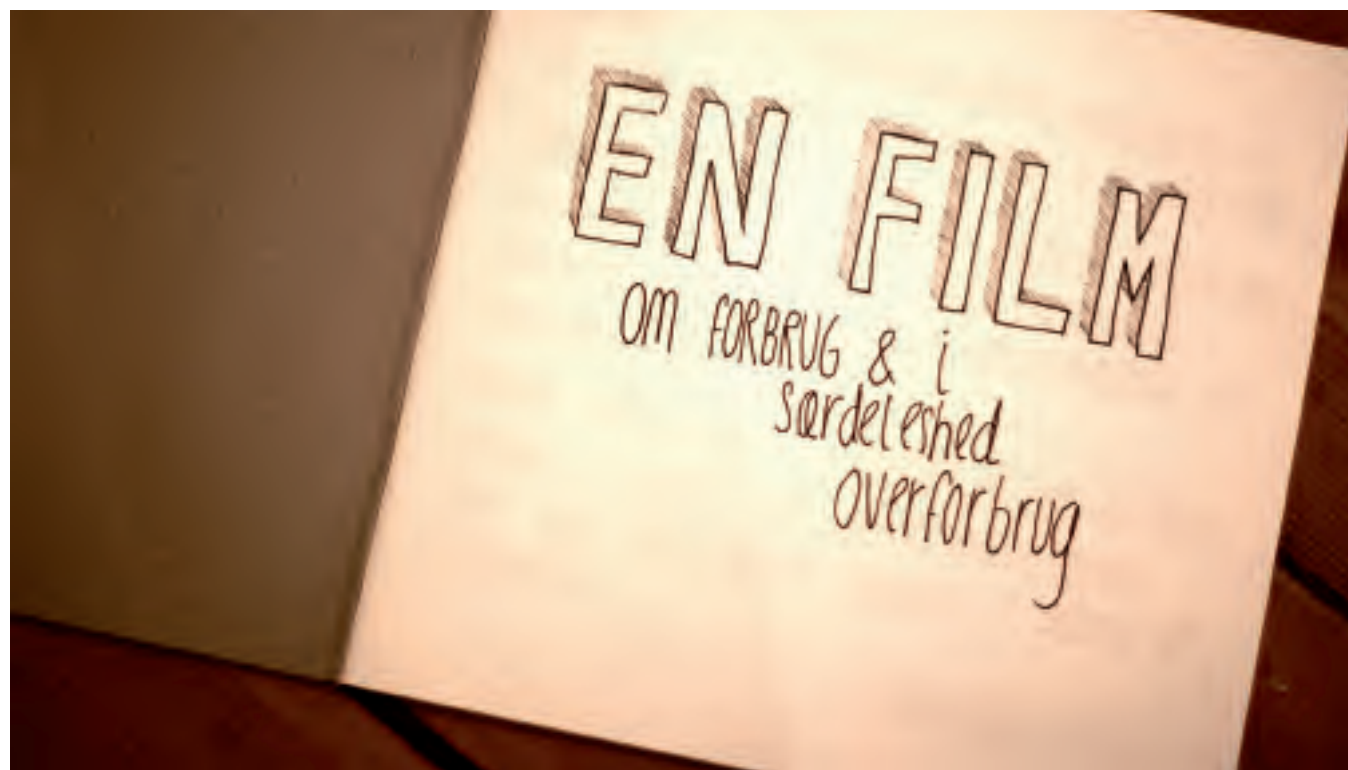
BAD ENERGY KILLS HEALTHY RELATIONSHIPS

052

Maria Louise Osipowska
Silas Amdi
Sebastian Askari Schmidt
Martin Meincke Pedersen

THE CLUB/ THE TEST

How is it possible to further the consumer's understanding of personal data and consumption in an eventful and engaging manner?

Campaign film for Tre-For, which generates the consumers' personal data and adjust them to the framework of the film.

We primarily address the private consumer who wants to see and understand his consumption in a more visual manner.

But, since it is virtual, the design is applicable to all Tre-For's customers, including businesses.

kWh 179,17

Dit varmeforbrug

OKTOBER

J	F	M	A	M	J	J	A	S	O	N	D
120,60	094,80	158,97	103,05	192,00	050,60	020,20	040,31	120,52	179,17	000,00	000,00

824

485 ml. 485 ml. 485 ml. 485 ml. 485 ml. 485 ml. 485

485 ml. 485 ml. 485 ml. 485 ml. 485 ml. 485 ml. 485

058

Denise Dyrvig C. Jørgensen
Birgitte Malling Eriksen
Rolf Blume-Jensen

MY CARTOONI SMART HOME

How can we help TRE-FOR generate more positive communication with its customers?

This is an augmented reality game called 'My Cartooni Smart Home', where children can upload their self-made drawings of electric appliances and electronic devices and investigate the electricity in their own house and its impact on the environment.

Knowledge of the TRE-FOR Company:
Older people are satisfied with the current appearance of the electricity bill.
Younger people don't read the bill —they only dwell on the price of consumption— they pay via payment service.

Our approach:
TRE-FOR ought to focus on and strengthen its tangible products that have an immediate and meaningful value. There is no immediate need for redesigning the electricity bill.
– The teaching programme for children
The communication between customer and energy supplier is characterized by topics on: factual errors in the bill, complaints about faulty reports, commercials etc.
Conclusion:
Currently there is no positive communication. When communication is needed it's always on negative topics: "there are things that don't work!" What is the reason for that?
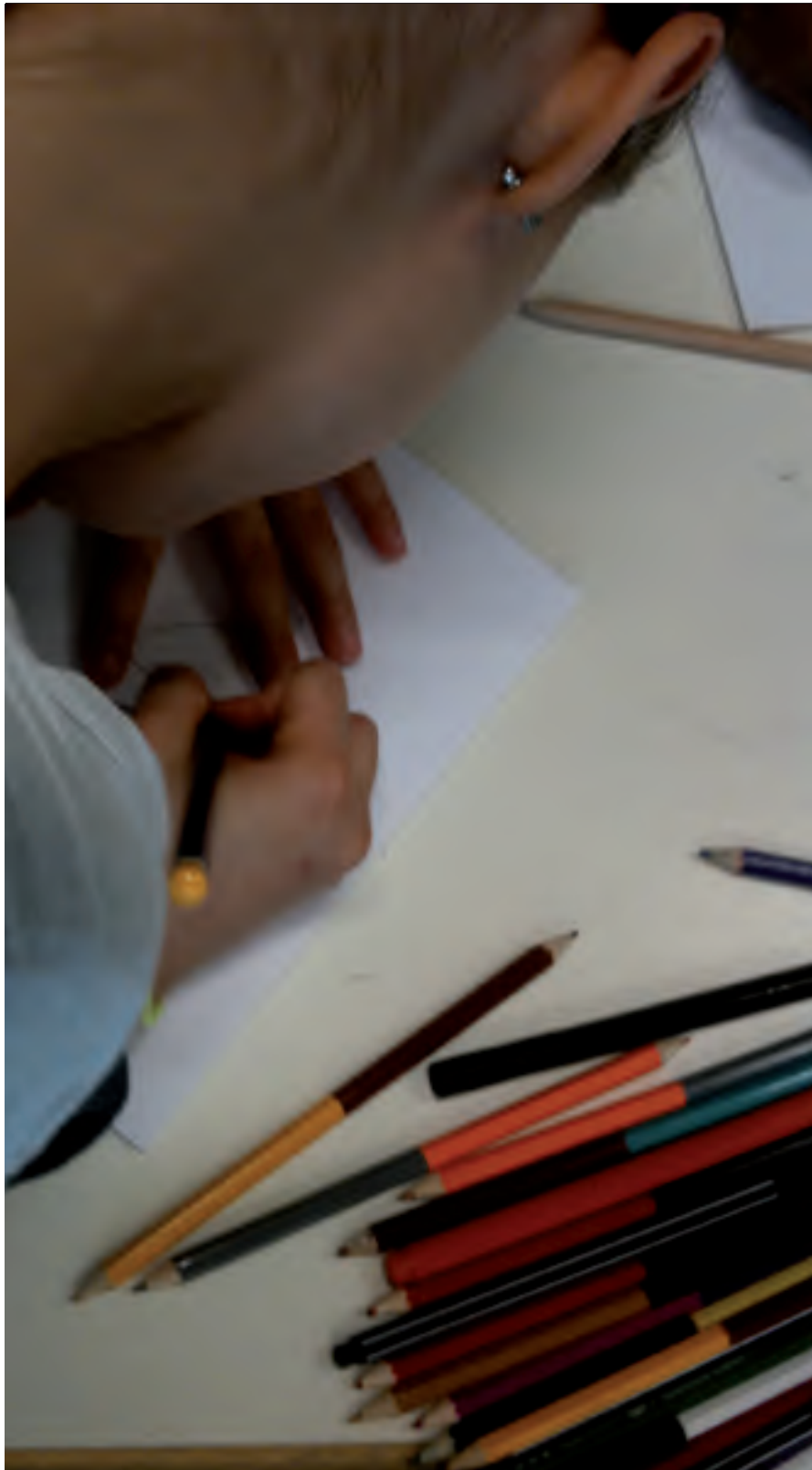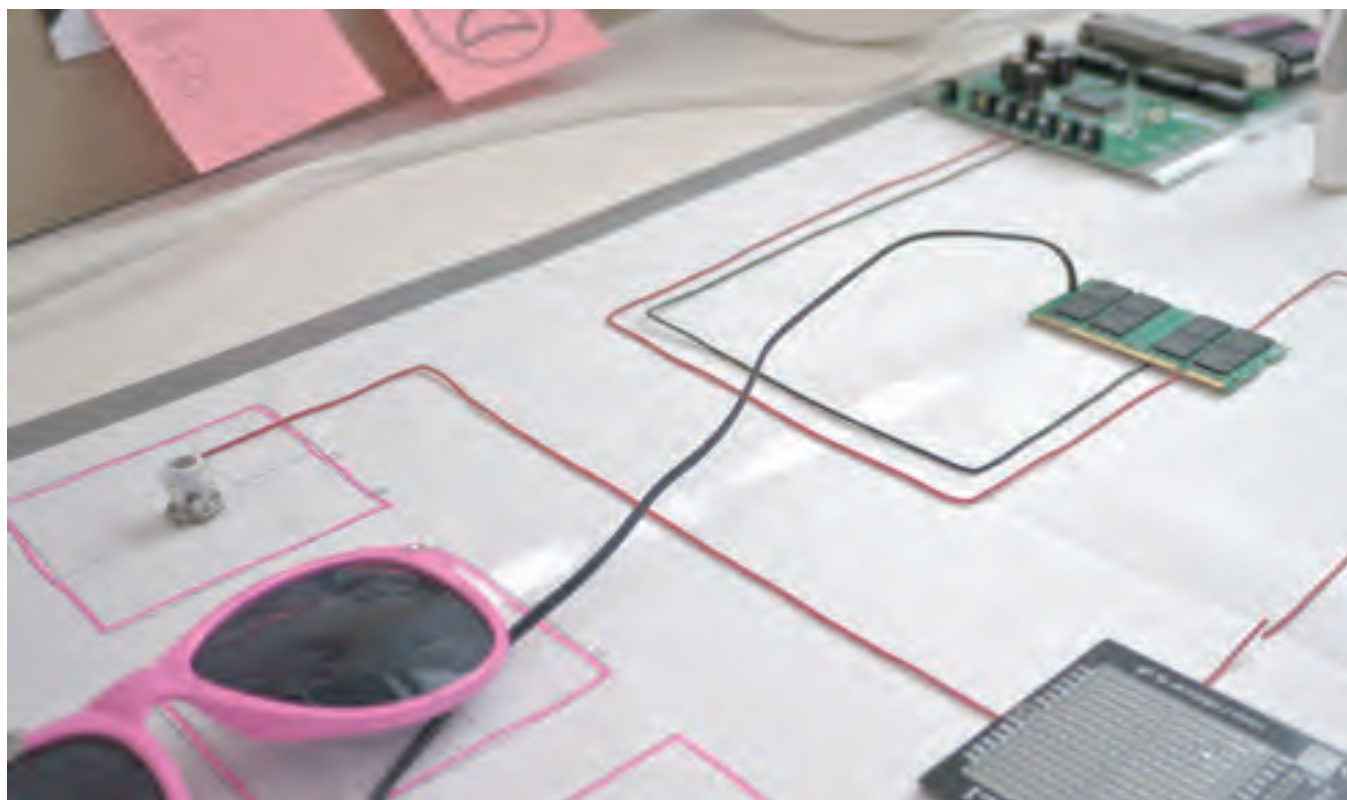
Group 10 has been especially interested in exploring the relationship between the company and its customers, and, based on interviews, we have identified a specific set of problems related to "negative communication." Most customers do not acknowledge the products TRE-FOR offers (water, heat, electricity, Internet etc.) as inherently value adding services, but tend to focus on the material demands the products fulfil: computer, mobile phone, Internet, refrigerator, television etc. From that perspective, TRE-FOR provides "invisible products," which only grab the customers' attention once there are errors in the delivery of these products. We see "visible products," which the customer perceives as desirable for their own sake, as a special prerequisite for being able to reach the consumers and hence generate a different, positive line of communication.

We propose that the existing educational program for 7-11-year olds be extended with an app for smart phone, iPad and regular webpage, which acts as an augmented reality game.
Here children can upload their own drawings of electric appliances and electronic devices and learn about their personal consumption of energy and also communicate with their parents. They can scan their home with e.g. an iPad camera, and their

drawings will be part of a live view that dresses the physical objects, like clothes on a cut-out doll. As the child is uploading the drawings My Cartooni Smart Home will go from a live look to becoming a cartoon. Children and parents can collect information about the various electrical appliances in their own home through My Cartooni Smart Home and also become aware of the effect of these appliances on the environment through the character "Mr. Powers."

The objective of the project is to take advantage of the special aesthetic value of a child's drawing in terms of spontaneity, humour, simplicity, familiarity, and feeling of safety to create a different type of data visualization for TRE-FOR. My Cartooni Smart Home could be included in a preliminary program to arrange visits to TRE-FOR and follow-up studies back in school.
The project will focus on combining play and learning providing the students with a sense of ownership related to the contents of the class, since their own drawings and their own home are part of the educational material.

064

Ditte Ravn
Mette Fredsted Gram

3D HOLOGRAPHIC BOARD GAME

How can board games and computer games be combined and through data visualization teach both children and adults about energy consumption in an exciting manner?

Our project is a 3D holographic board game that enhances the customer's awareness about energy use.

Taking the energy company TRE-FOR as its starting point, the project attempts to widen the perception and appreciation of energy consumption through play and games.

Our project combines board games and computer games using the latest technology within 3D projection in order to appeal to a wide audience.
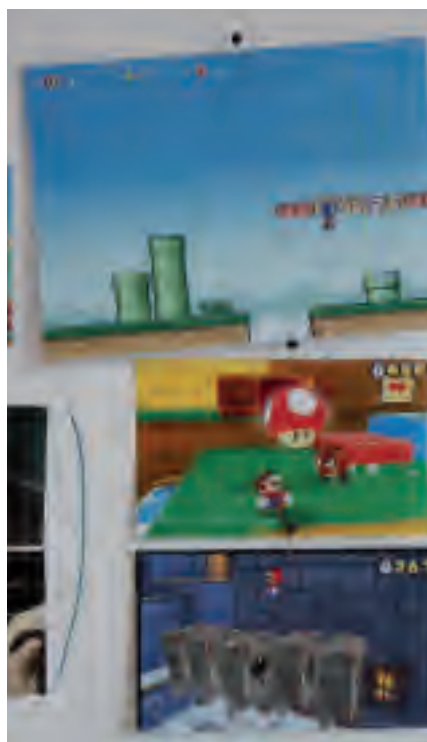
070

Camilla Rasmussen
Trine Løgstrup Sørensen
Maria Ósk Jonsdottir
Maja Bæk Christoffersen
Alba Castelltort Vinallonga

THE 10 PERCENT CAMPAIGN

How can TRE-FOR, through data visualisation, communicate energy waste in a tangible way and thereby create a stronger relationship to its customers?

We want to create a campaign that informs our target group—people in the Triangle Area, and more specifically households with children living at home—about standby consumption.

Ten percent of electricity consumption is pure standby, on average it equals 850 DKK per year.

10 % standby

Do you konw that the 10 % of the electricity
is wasted on standby?

this 10 % is stand by
10 % stand by
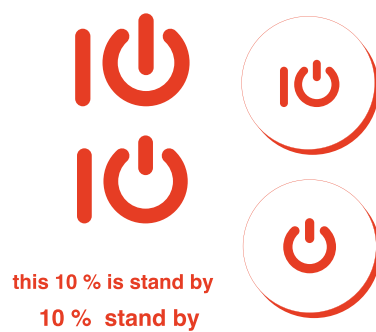
Vidste du at 10% af dit el-forbrug
er standby?

Vidste du at 10% af dit el-forbrug
er standby?

076

Ólafur Haraldsson

WE WERE ASKED FOR ONE SOLUTION AND CAME UP WITH ANOTHER

The task TRE-FOR asked of the students at Kolding School of design was to design a bill the consumers would understand. What they got was a smartphone app.

The task TRE-FOR asked of the students at Kolding School of design was to design a bill the consumers would understand. What they got was a smartphone app.

TRE-FOR is content, the students and I – their teacher – are content, and I am sure, the consumers will appreciate that TRE-FOR gave us the chance to think and work much broader than originally intended.

Because that is the task you should give designers: Think broad. Think of the users' needs. Think of solutions that will make their lives easier and better. In this case the consumers will get a smart app where they can choose between various mini apps and design their own screens in terms of "widgets" and accessible apps and features.

The outcome
The app contains different widgets for power, heating and water consumption. It is possible to follow the consumption per hour, day, week, month, and year and compare usage of one year with another year and to see a forecast of consumption for the current year based on data from the previous year(s), at least for electricity consumption. Information can be accessed as raw numbers as they are today, graphs and comparison charts, as well as a more creative visual interpretation of the customer usage along with over-use warning sent by the application on the device or using other types of media like text message or e-mail.

Widgets will offer the possibility for the application to grow and new, better features to be added to it as it develops. In the beginning – along with the consumption widgets – there will be possibilities to contact and locate TRE-FOR and connect to

self-service where you have overview of your instalments and package plans and see the most frequently asked questions and power stories for saving energy.

Two-way communication
The outcome from the workshop at Kolding School of Design which started the project lead to an idea of an open platform for TRE-FOR to communicate two ways with their customers, offering faster and better service and feedback back and forth.

The ideas we developed:
Make sure to involve the customers in some of the upcoming projects on their way into production, as well as already completed projects and what the users think about them.

Improve the self-service so customers can manage better on their own, without the help from customer relations, or they can prepare the problem/case before they get in touch with TRE-FOR. The platform would be a growing learning tool that would improve with input from the users and the corporate side of TRE-FOR.

There must be focus on a healthy relation between TRE-FOR and the customers. Make sure they want to use the platform for more than just complaining. Make sure TRE-FOR listens.

TRE-FOR should manage to use the input into the platform as crowd sourcing of feedback, ideas, and suggestions.

Establish "Contact history" with use of case numbers where the client and TRE-FOR can back-track previous history of communication between the customer and TRE-FOR.

An open platform should be used as an internal tool in TRE-FOR. Develop the open platform in a way for TRE-FOR to improve communication in-house. The open platform idea was incorporated

into a project TRE-FOR wanted to do: An application for tablets/smartphones.

Make sure the application can grow. Make sure it is built/designed in a way for future updates to be possible and make sure it will grow.
Offer the users to be involved in giving feedback to ask for their personal features for the application.

Still working on the project
We are still working on the project, but are already confident it will become a success; particularly because, in the ultimate phase, we cooperated with the Aarhus-based app company Kiloo, which has contributed with many good solutions.

Ólafur Haraldsson
E: info@olihar.com
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Education:
2011: Kolding School of Design, Master's Degree in Interaction Design
2009: Kolding School of Design, Bachelor's Degree in Interaction Design
2008-2009: University of Sydney – UG, Photography
2005-2006: NoMA, IP – Multimedia Design
2002-2005: Flensborgarskólinn í Hafnarfirði, HS – Radio and Television Technician
2003-2004: Nelson Collage, Y13 – Photography, Arts, Trade Building, Woodworking, Metalwork

Experience:
2003-present: OliHar.com – Photographer and Interaction Designer, freelance designer, photographer, image retoucher and teacher
2010: xRez Studios – Los Angeles, got a taste of the work done in the movie industry and other related fields in California
2010: University of Harvard, Consultant to PhD Student and Professor at the Engineering and Applied Sciences Department.
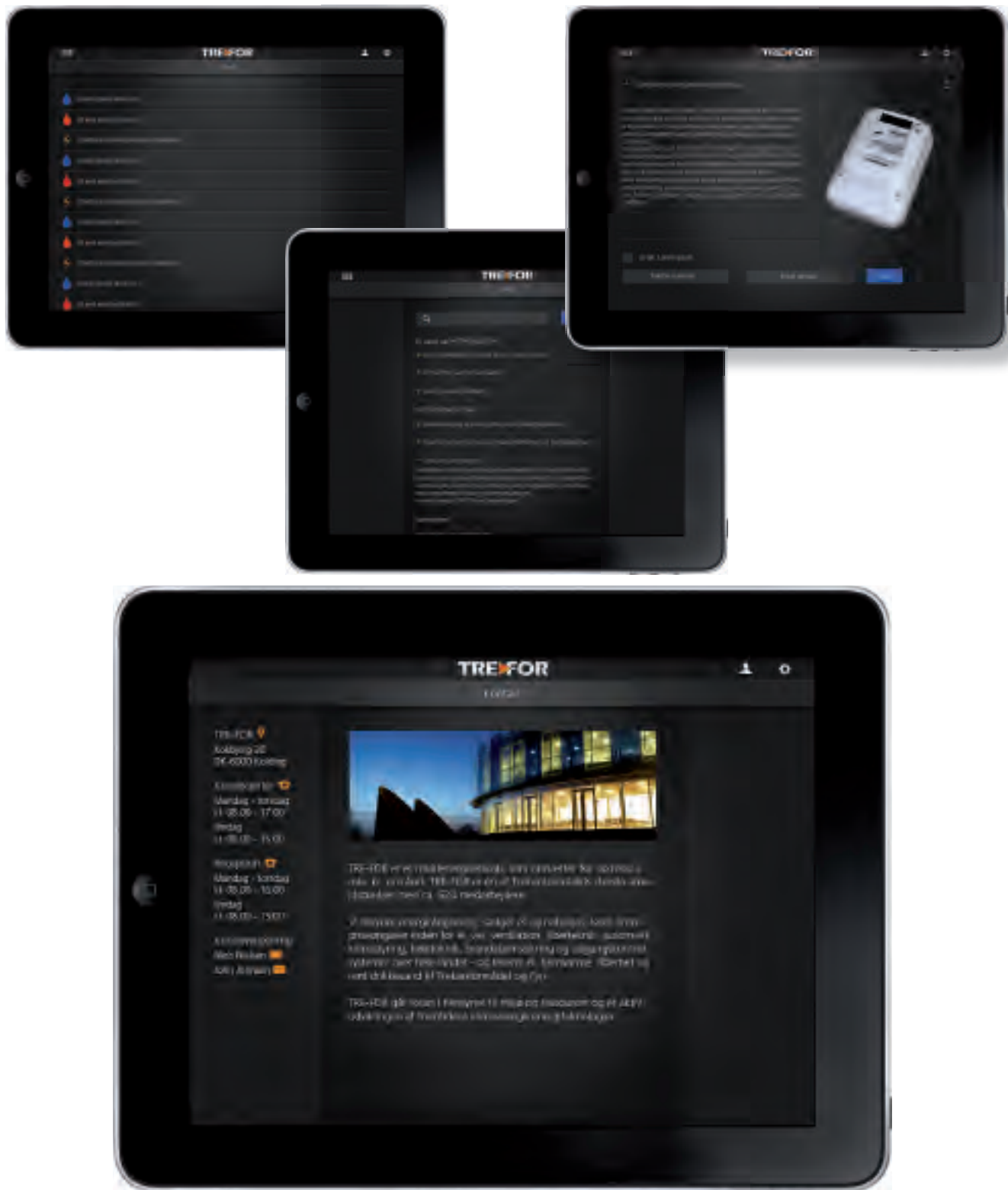
"IN RELATION TO THE COLLABORATION BETWEEN TRE-FOR AND KOLDING SCHOOL OF DESIGN IT IS OUR EXPERIENCE AS DESIGN MANAGERS THAT DESIGN CAN CONTRIBUTE IN CHANGING A BUSINESS' PERCEPTION OF THE WAY NEW BUSINESS INITIATIVES ARE DEVELOPED".

The results from the data-visualisation course, achieved by the design students and design management students, have created a foundation for Design Thinking at TRE-FOR which shows the existence of multifarious opportunities that go beyond finish and redesigning of something concrete.

A study made by the Danish Enterprise and Construction Authority (2008) concludes that businesses employing design and design competencies as a central and integrated part of their development and business processes make better profits than businesses that do not integrate design at a strategic level, but only apply it at a more operational level or as a finish".
Maja Bæk Christophersen and Camilla Rasmussen, Master of Arts in Design management

"COLLABORATING WITH KOLDING SCHOOL OF DESIGN WAS EXCITING

AND INNOVATIVE. WE WERE ABLE TO PRODUCE CONCRETE SUGGESTED SOLUTIONS TO HOW TO GET ENERGY CONSUMPTION AT EYE LEVEL".
Brian Jonasson, Chief Consultant, TRE-FOR

Different ways of thinking
Everyone gets a chance to think like a designer One element of the collaborative agreement between Kolding School of Design and TRE-FOR was a workshop about design thinking directed at the employees. That is, an introduction on how to use design methods to ensure a holistic, user-driven, multi-disciplinary and future-focused development and implementation of new ideas in the company.

The workshop followed two classes; the class at the Department of Communication Design presented in this publication and the DesignCamp 2011 which focused on making electricity tangible and wonderful. The DesignCamp outcome is described in the publication DesignCamp 2011 which you can order by sending an email to info@etrans.dk

The specific subject of the workshop was how design thinking and design processes can shift energy awareness of the Danes and energy suppliers. The event was planned as a guided tour of how energy and design interact. Also, the workshop investigated whether TRE-FOR has a clear image of its clients and users; and whether it makes sense to separate the two concepts.

The workshop took the student ideas as its starting point, and applying the same methods and techniques that were used during class, the employees were asked to "mature" the ideas by identifying which elements required alteration in order for the

ideas to fit TRE-FOR. This directed attention to how design thinking can be used within the company to ensure a user-driven, multi-disciplinary and future-oriented development and implementation of new ideas internally as well.

The evaluation of the workshop showed that the participants from TRE-FOR – representing a number of different departments and holding diverse competencies – believe that design thinking should be integrated in TRE-FOR.'s development process.

Statements from the evaluation:
· We should not allow ourselves to be confined by what is possible but rather focus on the customer from a helicopter view.
· We must put the customer at the centre – in a creative and real way.
· We must break with what we think we know about the customer. Do we know the customer?
· We will focus long-term and on how to sustain interest in energy.
· We must learn how to create social aspects.
· We must use prototyping.
· We must devote time to contemplative practices.
· We must develop elements from another – visual and virtual – way of presenting consumption combined with what is used today.
· We must reach for younger segments, e.g. through educational programmes such as "Miljøstrup".
· We must dare to gamble.

"TRE-FOR AND KOLDING SCHOOL OF DESIGN FULFILLED THEIR AGREEMENT TO COLLABORATE IN AUTUMN OF 2011 AND SPRING OF 2012. THE COLLABORATION WAS A MUTUAL EXPERIMENT TO EXPLORE WAYS

OF MERGIING DESIIGN AND ENERGY.

Mette Mikkelsen, Project Manager, etrans

The formal collaboration agreement states:

The future market for energy and electricity is experiencing a rapid development in terms of technology and market with an increasing focus on environment and sustainability, etc.

This development can potentially involve the role and significance of electricity in the everyday lives of people to change radically. Therefore, TRE-FOR and Kolding School of Design want to collaborate closely on the subject of how to develop the Danes' relationship with electricity.

The objective is to support Kolding School of Design's teaching and artistic development work in relation to this development and to contribute to TRE-FOR's understanding of design's potential in relation to the field of energy.

At the same time, TRE-FOR will contribute significantly to the talent development aspect of educating designers that are capable of handling user-driven innovation, complex systems, service design and design related to energy.
Collaborating with TRE-FOR has given us a unique opportunity to combine the design students' ability for innovative thinking and an "out of the box" approach with the challenges that face a modern energy supplier.

At the same time, we have been able to integrate research-based knowledge and development into the project on an on-going basis making it easy to "tame" the wild ideas and translate them into a concept which is implementable and makes sense to TRE-FOR.

The positive result is contingent on the open, active and contributing effort of the company. TRE-FOR has put a lot of energy and man-hours into introducing the company and the problems it is currently facing.

The TRE-FOR employees have contributed significantly to the process of generating the initial, wild ideas and subsequently creating a new platform for understanding energy."

Mette Mikkelsen, Project Manager, etrans

084

Léon Kranenburg /
We.Ourselves.And Us.

VISUAL CONCLUSION

THE POWER OF DESIIGN

EVERY PICTURE HAS TO GIVE

A NEW IMPULSE TO ATTENTION,

TO CONSCIOUS THOUGHT, TO A

DESIRE FOR DEEPER KNOWLEDGE.

Otto Neurath, 1936

By: Léon Kranenburg / WOAU! / We.Ourselves.And.Us.

090

ACKNOWLEDGE MENTS

"THE VISUAL INTER-
PRETATION SHOULD AIM
AT BRINGING OUT WHAT
IS MOST EXCITING IN
THE FACTS SELECTED.

Marie Neurath, 1960

092

COLOPHON

design
skolen
kolding
DK:

TRE▶FOR

**INNOVATIONS
NETVÆRK**
FOR AVIKIED, KOMMUNIKATION OG FORBRUG