2IMPREZS Newsletter #5

What's the Issue?

Most schools in the North Sea Region (NSR) were built in more careless times—they have a high and forever more costly energy consumption that is not in line with today's CO_2 reduction emission policies. **2IMPREZS fosters both behavioural and technical energy efficiency measures in existing schools, reducing energy consumption and thus reducing CO_2 emissions.** For the first time, this project will tackle the whole spectrum of energy efficiency measures by using behavioural, technical and financial approaches instead of focusing on one specific field.

Let's Get Energised!

Based on active participation and initiatives of school stakeholders (teachers, students, management), as well as on the project partners' experiences, 2IMPREZS creates a **joint energy saving programme** through Energy Challenges in schools and an innovative decision making model, developed, tested and validated to best incorporate cost-effective educational, technical and financial measures.

The project had planned to open the local challenges to a **cross-border Energy Challenge initiative** in 2020, in which pupils would collaborate internationally to find the best ways to reduce energy consumption in their schools. However, due to the COVID-19 pandemic, pivots are being made.

2IMPREZS Long-Term

Learning from the 6+ years of experience of our Dutch partner, **Energy Challenges Foundation**, such behavioural changes can result in at least **15% energy savings in schools** alone. At this time, four schools that have already taken all necessary energy efficiency measures are raising their ambitions and striving to become near zero-energy schools by implementing renewable energy technologies.

The main project result is an estimated **carbon reduction of 30% (7320 tonnes CO_2) in the 141 schools directly involved.** The main output is a joint energy saving programme, tested in different school environments and conditions and replicable in and beyond the North Sea Region, which will support the new **2030 Framework/EU Strategy for climate & energy** for a sustainable Europe.

Interreg North Sea Region 2imprezs European Regional Development Fund — EUROPEAN UNION

What's Inside?

Save the Date!

Energy Challenges Finale (Online) — March-June 2020

2IMPREZS Partner Meeting— October 2020, Netherlands

COVID-19 Updates: Joint Energy Challenges Finales will be digitally, whenever possible

Funding Programme: Interreg VB North Sea Region Programme

Eligible Budget: 3,743,597 €
ERDF Funding: 1,871,799 €
Funding quote: 50%

International Exposure for 2IMPREZS

Destination: Denmark

The students of the College Hagelstein in Sint-Katelijne-Waver, a secondary school in Belgium, have been working hard for an entire school year on decreasing their energy usage. In early March, the Energizers traveled by train to Sønderborg to compare their findings with their Danish counterparts.

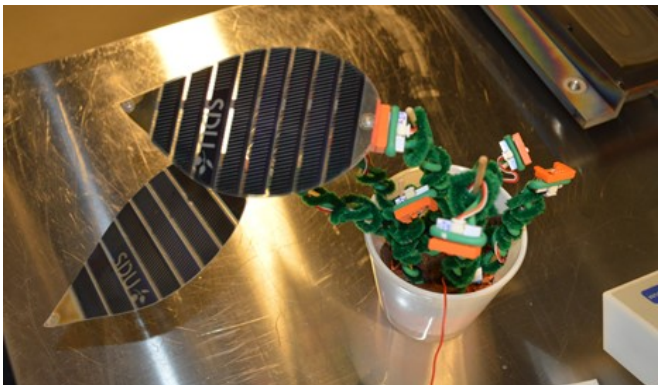
The Belgian secondary school students of College Hagelstein packed their bags for the Sønderborg Energy Challenges finale

The students of College Hagelstein in Belgium were very curious as to how other people in other countries decrease their energy usage — and luckily the Danish students were hosting their 2IMPREZS finale celebration on the 11th of March, a perfect opportunity for international exchange. Therefore, off to Sønderborg, Denmark they went!

The students were given the choice to go by plane or public transport. The choice was quickly made after they calculated how much CO_2 they could save by going by train — even if that meant taking five of them.

The Danish 2IMPREZS finale was planned to be full of fun activities, such as a 'nudging' workshop, an energy lab and a sustainability relay. The Danish and Belgian pupils were to learn about the waste handling system in Sønderborg and how to make climate-friendly food, in addition to building solar cells. The Danish pupils were also to receive their participation diplomas, with the three top-scoring energy-saving schools winning prizes. As a special treat, the students of the Belgian energy saving council pulled together an 'escape room' to increase awareness of the importance of energy saving. Students could only find the key to escape by lowering the room temperature, checking the radiator and shutting off the lights (and using black light).

When the Belgians arrived on Tuesday in Sønderborg, they were greeted by the sad news that the COVID-19 pandemic forced the cancellation of the Danish meeting. While the cancellation meant the Belgian Energizers could not exchange (in person) with the Danish students, their walk in the countryside of Sønderborg offered them a new appreciation of how saving energy is necessary if we are all to enjoy our current climate a little bit longer.



These small leaves are organic solar cells, produced by 2IMPREZS partner, University of Southern Denmark (SDU), who partnered with HoS to plan the student activities for the finale

2IMPREZS responds to COVID-19: Energy Challenges 2020

Unable to meet in person due to the COVID-19 pandemic — but still able to capture a selfie with climate activist Greta Thunburg (*see photo, left*), whom they ran into along the way — the Belgian pupils were therefore the first of the Energizers to pivot as a result of the global crisis. However, in order to continue the knowledge transfer and interregional exchange amongst the young pupils, the 2IMPREZS partnership and schools are currently working together to find an optimal solution to hosting international Energy Challenges finales in a safe and effective way — the optimal solution now being an engaging digital conference, whenever possible. Stay tuned.

Energy Challenges across the North Sea Region

Flemish schools well on their way to saving 30% or more energy

More than 50 schools in Flanders have joined the 2IMPREZS Energy Challenges. Knipoog from Ranst, Sint-Clara College from Arendonk and Sjabi from Puurs are three of the schools that are well on their way to saving 30% energy — and perhaps even more.

Knipoog is a primary school located in Ranst, Belgium. All classes are working to reduce their energy use. In this way, the school reduced their CO_2 emissions by 8% in the last school year alone. Next year, the school's heating installation will be renewed, which will allow the school to reduce their emissions by 40%.

Sint-Clara College is a secondary school located in Arendonk. Energy and climate action is nothing new for these Energizers: in 2015, a new building with high energy performance was put into use. Throughout the 2IMPREZS Energy Challenges, the walls of the workhouse were insulated and the school invested in a solar panel installation. As a result, the school has reduced its annual carbon emissions by 24 tonnes. More measures are scheduled: a new insulated roof and heating installation for the workhouse, a renovation of the sports hall and an existing block to be demolished and replaced by a new one.

Sjabi in Puurs is a large secondary school located in Puurs Sint Amands. A student work group called the AMIGOS is responsible for lowering the school's energy consumption. They work very innovatively on this task and focus on getting each and every student involved. They make movies and have launched a poster campaign. The challenge worked: they consumed 22% less energy over 2018-2019. In October 2019, representatives from the AMIGOS of Sjabi in Puurs attended the 2019 Project Slam as a part of the EU Regions Week, taking home the gold for 2IMPREZS.

.New mural for Southend school thanks to 2IMPREZS

This February, a Southend school received a new mural to inspire reflection on environmental matters.

Chalkwell Hall Junior School now boasts a beautiful mural in their playground, created by world-leading mural artist, Louis Masai, whose previous work has featured across ZSL London Zoo. Louis, who specialises in raising awareness about endangered species, worked with the school to identify a species that would reflect the seaside nature of the town. The blue fin tuna — the largest tuna in the world, which can live for up to 40 years and dive deeper than 3,000 feet — was chosen as it is endangered due to overfishing.

The mural was awarded to the school after they completed a series of challenges to reduce their energy consumption by 15% via a council-backed initiative, the 2IMPREZS Energy Challenges UK. Delivered in partnership with the Young People's Trust for the Environment (YPTE), Energy Challenges UK provides completely free learning materials, lesson plans and environmental challenges for pupils at participating primary schools in Southend-on-Sea.

The students of Chalkwell Hall Junior School pose in front of their new mural, painted by the talented Louis Masai

Once a school completes the challenges, they are entered into a competition to win prizes for their school. The next prize will be an installation of a green wall for a primary school. To enter the competition, participating primary schools in Southend must log into their Energy Challenges UK profile page and ensure that they have completed all seven of their challenges.

(continued on p. 4…)

Energy Challenges across the NSR

Nicola Mason Murray, lead teacher for Energy Challenges UK at Chalkwell Hall Junior School, said: "We all think the mural is absolutely amazing, and we have had so much positive feedback from children, parents and staff. It is such a brilliant addition to our playground and it also has such an important message."

Artist Louis Masai also had a response to share: "It was a pleasure to meet so many actively engaged young people in Southend!"

Finally, Councillor Carole Mulroney, cabinet member for environment and planning, gave her statement: "I am very pleased to hear that the school has reduced their energy consumption by 15% with the help of Energy Challenges UK and they have been rewarded with this wonderful and thought provoking mural."

Lower Saxony launches their 2020 Energy Challenges

On January 24th, the German Energizers joined the international partnership in hosting their local 2020 2IMPREZS Energy Challenges.

Pupils craft "Energiefresser", or "Energy Eaters", at a craft station run by the Elfi. They will use them afterwards as energy awareness tools in their schools!

At the City Hall of Rotenburg Wümme in Lower Saxony, over 90 German pupils launched their international Energy Challenges competition in cohesion with the five other participating North Sea Region countries participating in the project, who simultaneously hosted 2020 2IMPREZS "Inspiration Days" or kick-off celebrations of their own. The German kick-off was overseen by the European Institute for Innovation.

The Mayor of Rotenburg, Bürgermeister Herr Andreas Weber, invited the 2IMPREZS pupils of Lower Saxony to the City Hall of Rotenburg (Wümme) in order to formally address and applaud the pupils' energy-saving initiatives. Following his inspiring introductory speech, the diverse group of students, ranging from ages 5 to 16, introduced themselves by school.

The German Energizers at the 2020 2IMPREZS kick-off

The three stellar schools of the 2019 2IMPREZS Energy Challenges – IGS Achim, Halepaghen Schule Buxtehude and Grundschule Eversen – returned with new pupils to the stage for another round of the Energy Challenges this year. They spoke about their energy-saving initiatives from the previous year of the project and how they are going to build on these experiences, in addition to outlining key points and actions for this year's challenges. These dedicated pupils can only serve as inspiration for the additional four German 2IMPREZS schools that have joined for the 2020 international challenges: Grundschule Tegeling, Stadtschule Rotenburg, IGS Rotenburg and Oberschule Soltau.

Although the Energizers come from all over Lower Saxony with varying backgrounds, they all share a common goal: save energy and lower carbon emissions. To conclude the day of energy festivities on a high note, the IGS Rotenburg was inspired to request the City of Rotenburg Wümme to switch their school to green energy from this year onward. Following some energy surveys and cost analysis was the decision of the mayor to switch not only the school, but also the entire city council of Rotenburg Wümme to renewable energy – a remarkable initiative inspired by the young people of Lower Saxony.

Energy Challenges across the NSR

2IMPREZS in the Netherlands

As a result of school closures across the Netherlands and the globe, Team Energy Challenges in the Netherlands has decided to go online! Every week there will be published a newsletter as well as a video for the 2IMPREZS Energizers to enjoy from the comfort of their own homes

Energy Challenges NL had a lot of fun recording the first video. One of the reporters, Sofie, takes you to the vegetable garden of the neighbour, Henk. We hope you will like it too!

Now that the whole world is upside down and Energy Challenges NL are also no longer able to continue sending the 'Raging Reporters' to check in on the schools' energy savings in person, Energy Challenges Netherlands have thought about how they can continue the Energy Challenges campaign online.

In these virtual Energy Challenges, Sofie of Team Energy Challenges Netherlands takes the pupils to many interesting places! The first destination is neighbour Henk's garden, where plenty of delicious vegetables are growing. In the videos, Sofie asks some low-carbon, energy-related questions to which the pupils can respond to win sustainable prizes! In this way, the pupils are able to learn about energy at home.

The Dutch Energy Challenges also send out a newsletter to their local Energizers every Monday. Each newsletter contains an easy-to-understand video with information and an assignment. Of course, it is up to the Energizers themselves to decide to participate – after all, they are still in charge of their own energy consumption habits and remain at the centre of the 2IMPREZS Energy Challenges campaign. Every week, Team Energy Challenges Netherlands picks the best, craziest and most inventive response and rewards it with an inspiring low-carbon prize. The first week, a beautiful Elfinbook was taken home by the winner, and the following week, a reusable water bottle made of cane sugar was awarded. Energy Challenges NL also invites Energizers from across the NSR to participate in the assignments — more info to be found on the our website.

The Dutch Energy Challenges home assignments will also contain other themes than just saving or the smart use of energy. The main focus of the assignments, however, is also the core of the 2IMPREZS project: decreasing energy consumption to lower carbon emissions across the NSR and beyond. Assignments and tools like these will soon be available via the 2IMPREZS Interactive Fact Sheets, an online resource that displays and compares energy data per 2IMPREZS school across the NSR, in addition to offering fun and interactive learning materials.

Danish Inspiration Boxes

Due to Danish school closures as a result of COVID-19, it has not been possible to engage the Danish pupils. Thus, House of Science has continued to develop inspiration boxes for the 2IMPREZS preschools.

The 2IMPREZS preschool programme continues throughout 2020 with six themes. All six themes are central themes in the preschool curriculum and the change in behaviour will reduce CO_2 emissions at school and at home. Theme 2: "Waste-handling, recycling and material knowledge" has just been completed and the thematic inspiration box was delivered to the eight participating preschools. The teachers promised that, when they have the opportunity, they will incorporate it into their work. In the Theme 2 box there are five parts, ranging from an introduction to the theme to how changing behaviour in waste-handling reduces CO_2 emissions. There are also ideas for songs and books, tips and advice, equipment for energy experiments and even relevant games.

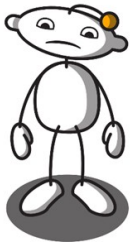
Inside the inspiration box is also equipment to build solar boats from recycled materials

The lasting legacy of 2IMPREZS

Watt's up with E.Wattson?

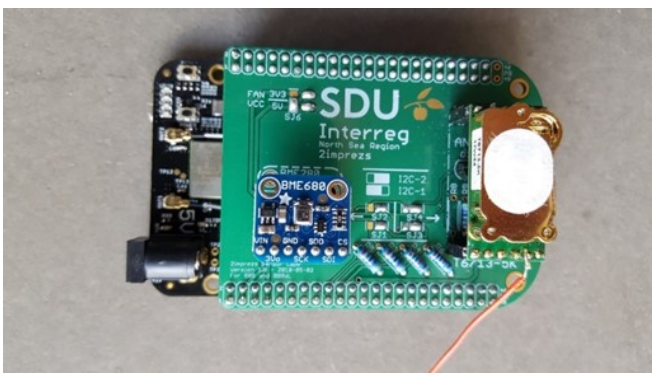
The Mads Clausen Institute gives updates on the Interactive Energy Optimisation Decision Model.

At the 2IMPREZS partner meeting in early October 2019 in Sønderborg, technology partner **Mads Clausen Institute (MCI)** presented the next version of the E. Wattson web universe with two functional energy saving scenarios – lighting and solar energy. MCI staff and a hired programmer had worked over summer and beginning of Autumn to get the new version ready.



Unfortunately, as the developer unexpectedly had to leave the institute and thus stop work on E.Wattson, the project has experienced some delays. A new programmer was hired in late January, so E.Wattson development work could start again. Since then, development has been concentrated on picking up the system and getting the back-end system re-organised. Furthermore, new features, such as language versions and a first draft of the financial model scenario, are in progress. In sum, the development of E. Wattson web universe is still delayed but the work is progressing.

The MCI has also faced some obstacles with the E. Wattson sensor box, which pupils can use to measure the indoor climate of their classroom. Luckily, a solution has been found by switching from Beaglebone to Raspberry Pi computers. The reconstruction of the sensor boxes awaits the opening of the university after the COVID-19 shutdown. Moving forward, the E.Wattson will also provide a link to the 2IMPREZS Interactive Fact Sheets, which provide end users with way to visualise energy savings by school and region.



The 2IMPREZS E.Wattson, developed by SDU MCI, uses a sensor box that is small enough to fit in your pocket

2IMPREZS Results Calculator

To measure the results of the schools — 30% energy savings and reduction of 7320 tonnes of CO_2 —the partnership developed the '2IMPREZS Energy Challenges Results Calculator'. Tom Vanhoof, 2IMPREZS-intern at IOK, explains.

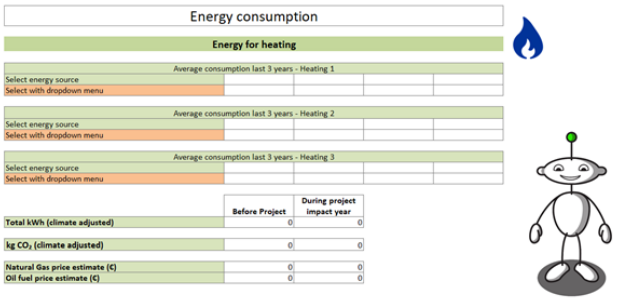
What is the goal of the 2IMPREZS Energy Challenges Results Calculator?

Tom: To determine the impact of Energy Challenges at a school, we have selected a number of 'key performance indicators (KPIs)'. The goal of the Energy Challenges results calculator is to gather the necessary info and to facilitate and standardise the calculation of these KPIs. The output is automatically calculated and demonstrates the reduction in energy consumption and carbon emissions per school. In the tool, you first establish what the normal consumption is by filling in available data of the past three years. This will be the benchmark, used to calculate the reduction. Next you can fill in the energy consumption after you took part in the Energy Challenges project. With this data we can calculate a whole lot of numbers.

What parameters are calculated?

Tom: Besides the reduction in energy consumption and the amount of CO_2 generated, we also estimate how much money the school saved. We then translate the calculated reductions into more understandable quantities: the equivalent amount of trees planted or prevented kilometers driven by a car. The data is visualised with graphs, so all people with or without technical knowledge can see how much they saved.

2IMPREZS Energy Data & Interactive Fact Sheets



Soon, the energy savings data per school will be automatically updated into an interactive online platform to compare results

What are the first findings? Does the calculator show differences between the partner regions?

Tom: We are currently busy collecting and processing data from all schools. Of course we are very curious about the results as well. Comparing between schools and regions at this point is speculating and can be deceiving. But we can already see some fundamental differences between the countries' schools. Belgian schools participating in the project are in general larger schools with higher number of pupils, whereas Danish schools seem to have more surface area per student. If we want to compare between regions in the future, we need to make sure we do this on the correct basis. For example, we need to take into account the heated surface, the amount of pupils and teacher but also the extracurricular activities at the schools…

Can all schools use the calculator?

Tom: Yes, this tool is freely available, you can download it from our project website. Next, you can start filling in your data and calculate your energy savings and CO_2 reductions. Right now, we are constructing a web application where you will be able to upload your completed tool (or ask your project supervisor to do so). Once uploaded your project results are automatically visualised on the website and shared with the rest of the world. We hope in this way schools can inspire other schools to start an energy challenge as well and start saving energy. This tool may seem like a very complicated tool at first, but if you have experimented with it a bit, you will notice that it is not that complicated at all. Instructions are integrated into the tool. In addition, we have a webinar available (in English, see our project website) that explains how to complete the tool. We hope that schools will get to work on this.

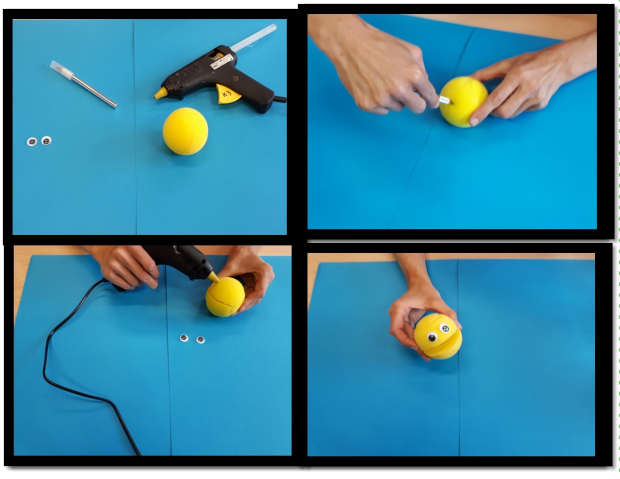
Interactive Fact Sheets

The energy savings and carbon emissions reduction data per 2IMPREZS school will be automatically updated into an interactive online platform — the 2IMPREZS Interactive Fact Sheets (coming soon) — to compare results by partner region. See the current IFS interface below:

2IMPREZS Energy Eaters DIY #stayhome

Energy Eaters are the little creatures devised by some Belgian Energizers that mark energy-intensive technology in schools! The little Energy Eaters are very easy to make:

1) Take a tennis ball-size ball (this could be an old tennis ball from a nearby tennis court, or a foam ball)
2) Cut a mouth in it, so you can fit it over a screen, door handle, radiator, your grandma (just kidding), etc...
3) Glue some eyes on it
4) Be creative and make them as funny as you like
5) The Energy Eaters are ready to invade your school and home! #stayhome



2IMPREZS Newsletter #5

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