Interreg North Sea Region 2imprezs
European Regional Development Fund

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PROGRESS REPORT

5th edition – November 2020

About

Most schools in the North Sea Region have high and increasingly more costly energy consumption that is not in line with today's CO_2 emission reduction policies. 2IMPREZS will stimulate change by fostering both behavioural and technical efficient energy saving 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—the behavioural, the technical and the financial approaches—rather than focusing on one specific field.

The implementation of the project's comprehensive transnational strategy will aim to reach 30% energy savings in 141 schools in the North Sea Region, representing an emission reduction of 7320 tonnes of CO_2 and will examine how to transform four schools into nearly zero-energy buildings.

By reaching schools and experts throughout the North Sea Region, 2IMPREZS will be able to collect and share experiences but also develop an energy saving programme, compiling measures that are proven to be efficient in various settings. So far, 2IMPREZS has reached 83 schools in five countries.

Project progress

WP1 Project management

During this reporting period, IOK organised a digital partner meeting from the 19th-23rd of October. Normally this meeting would take place physically, but due to the ongoing COVID-19 pandemic, the partnership opted for a digital meeting. Additional virtual meetings were held when necessary (e.g. 2IMPREZS project extension, WP4 brainstorming sessions, etc.). For some WPs, these meetings are organised at a regular basis (e.g. monthly for WP2 and WP3). These video conferences prevent long distance travelling and thus also prevent greenhouse gas emissions and offer a good solution to deal with the COVID-19 measures currently in place.

During this reporting period, there was an extra focus on monitoring project progress (through thematic meetings with partners) to ensure all deliverables are finalised by project end.

The responsible beneficiary of this Work Package (WP) is IOK.

WP2 Communication activities

WP leader atene KOM took initiative for WP2 (Communication) to ensure regular communication and dissemination of the project, particularly surrounding project results and impact (i.e., energy savings and carbon reduction via 2IMPREZS). All partners utilise the document depository and communication channels established by atene KOM to communicate efficiently to their target groups, and a bi-annual project newsletter is written to disseminate project activities and results and the various communication channels have been updated – although the frequency of regional updates was lower due to COVID-19.

During this reporting period, the online platform 'the Interactive Factsheets' (IFS) was finalised. The platform showcases participating schools and their energy saving results by participating in the transnational 2IMPREZS Energy Challenges, in addition to serving as the 'location' for the digital Transnational 2IMPREZS Online Event in May 2021. The IFS have been developed and migrated to the Energy Challenges website, where they shall continue to be hosted even after the project end, and will be on short term.

To assure European-level project exposure, atene KOM and IOK applied for the North Sea Region Video Contest as well as the North Sea Region Photo Contest. 2IMPREZS won first place for the 'People in Focus' category of the North Sea Region Video Contest 2020; the title was awarded by a jury of 14 judges appointed by the North Sea Region Programme's Monitoring Committee. Although 2IMPREZS did not win a prize for the NSR Photo Contest, participation in the competition allowed for additional project exposure at the EU-level. On the horizon for 2IMPREZS is the application of the project for the REGIOSTARS Awards 2021.

The responsible beneficiary of this WP is atene KOM.

WP3 Energizing School Agents with the capacity 2IMPREZS

A customised approach, that starts from the ideas from students and teachers and takes into account the specific situation of every school, is used by the partners. Project partner House of Science created an 'awareness study' to measure behavioural change, with the help of the other project partners. Students from several schools were encouraged to fill in this study, in order to measure their behaviour before and after the implementation of the project. Due to COVID-19, the survey at the end of the previous school year could not be executed since many schools were closed. Partners are looking for alternatives.

2IMPREZS partners maintained contact with schools by digital means to develop a tailor-made approach to save energy. Already 121 schools in the North Sea Region have joined the project.

Most of the Key Performance Indicators (KPI) data on energy savings of school buildings has been gathered from schools, municipalities and municipal utilities and is ready to be fed into the Interactive Factsheets (IFS) platform that is now completed. The IFS shall process the energy data to provide visualisation of the energy savings information onto an interactive web platform, a task overseen by atene KOM. All partners' KPI data shall be fed into the platform once the system is migrated from the developer's server.

The first evaluation of the KPI-data (30 sheets completed) demonstrate that:

- Participating schools saved on average 27% energy.
- The 30 schools saved 1926 tonnes of CO_2.
- The 30 schools are saving in total 344.000 euros on a yearly basis.
- Results reflect regional differences: overall, UK schools had the highest energy consumption before the project and have saved the most energy.

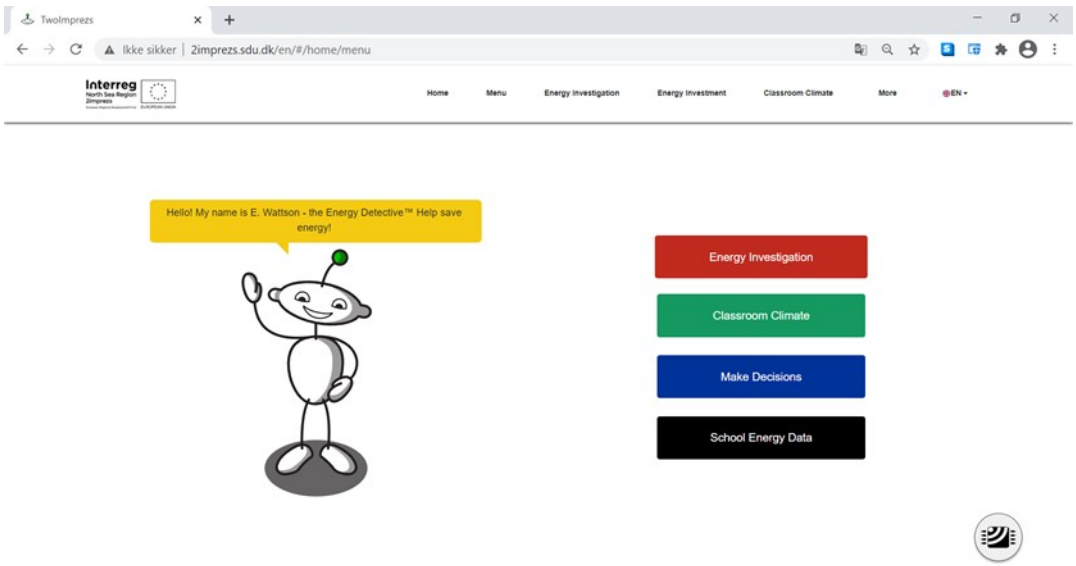
The responsible beneficiary of this WP is Energy Challenges Foundation.

WP4 Energizing financial capacity and supporting 2IMPREZS business models

The NZE-schools, E. Wattson and the business model sessions are some of the topics discussed at all WP4 meetings.

The principles of 2IMPREZS' business model are being put to test in Southend as a number of schools seek to introduce LED retrofit programmes partly funded by loans. The business model seeks to empower schools and local authorities to identify appropriate and effective energy projects to ensure best value financially and in terms of carbon reduction, helping schools achieve reductions not only within themselves but giving them a role in accelerating progress towards local and municipal net-zero ambitions. The schools in Southend can happily anticipate up to 15% reductions in their current emissions from their LED programmes, contributing brilliantly to 2IMPREZS' goal of 15% reductions in emission from technological interventions, as well as improving the learning environment for staff and students alike, giving them additional opportunities now and in the future to benefit from 2IMPREZS' principles and take them outside of the classroom. As the business model gains traction, further, more elaborate projects become more and more possible, paving the way to greater reductions in future and ensuring the longevity of 2IMPREZS' message for years to come.

Use of the business model is additionally supported and complemented by E. Wattson, the energy saving detective. E. Wattson allows staff and students to calculate anticipated savings for a number of different energy projects, providing valuable initial input into the feasibility of energy projects and offering quantitative data to put together a business case for these projects.



E. Wattson consist of three elements: An interactive web tool, a Classroom Climate Sensor Box, and an Organic Solar Cell Kit.

The interactive web tool consists of a so-called Energy Investigation, which takes school children/high school students though three different energy scenarios: Light Bulbs, Solar Energy, and Other Equipment. By completing the exercises of the scenarios, the students increase their knowledge about these important aspects of energy or energy use. The students will also reflect on their own behaviour in terms of energy usage.

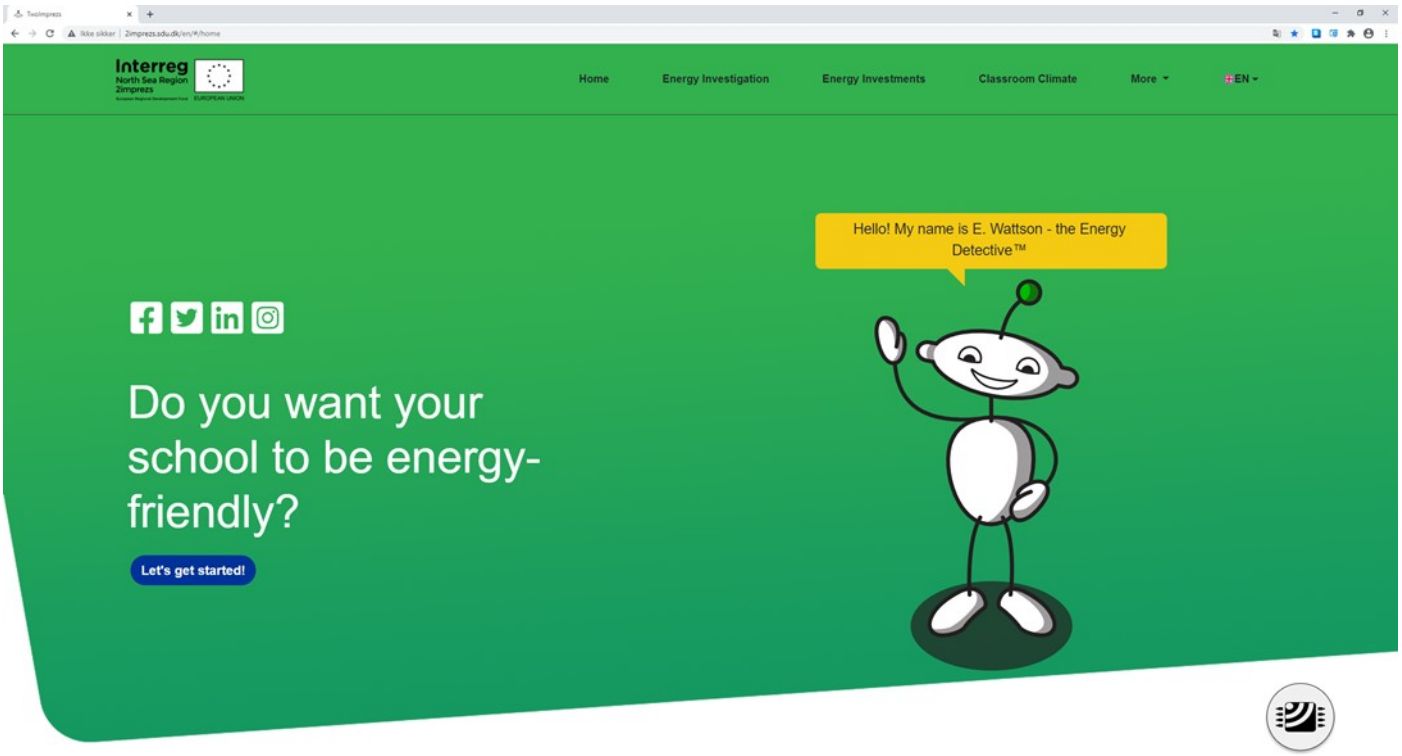
Moreover, the web tool offers the Energy Investment feature, which is most relevant to older school children or high school students due to the level of complexity. It allows these students calculate the financial impacts for schools doing energy investments. The students must find an energy area or technology for the school to invest in and then assess the necessary amount for the investment.

Finally, the web tool entails the “Make Decisions” guide, which prepares school children/high school students to argue their case for energy improvements at their school in the best way possible. It also provides them with a tool that serves to try to commit the school decision makers to implement energy improvements at the school.

The Classroom Climate Sensor Box is a small custom-built unit equipped with sensors that measure the levels of humidity, temperature and CO2-level in a classroom. The sensor box tracks data and displays them in E. Wattson™. The data can be analysed by the class by e.g. monitoring the CO2 level and noting how the indoor climate is affected by their behaviour in terms of opening/closing windows and regulating the temperature etc., and how a fruitful learning environment is dependant of the indoor climate of their classroom.

The Organic Solar Cell Kit consists of an organic solar cell and a multimeter. With the kit, students can test and measure how much power and voltage an organic solar cell can generate. The Organic Solar Cell Kit can be used alone or with the E. Wattson interactive web tool by completing the Solar Energy scenario of the Energy Investigation.

E. Wattson ensures coherence with the Interactive Fact Sheets (IFS), as these can be linked to from E. Wattson via School Energy Data. Furthermore, E. Wattson is graphically created to on the IFS platform to secure a uniform user-experience when roaming from one platform to the other.



COVID-19 has sadly stopped our ability to take E. Wattson into the classroom for the moment, but staff and students alike that have been introduced to E. Wattson are very excited to utilise all it has to offer beyond the pandemic, letting it play its important role in energy and education beyond the project lifetime.

Check out E. Wattson – the Energy Detective™ here: http://2imprezs.sdu.dk/en/

The responsible beneficiaries of this WP are Southend-on-Sea Borough Council and Mads Clausen Institute.

COVID-19

Overall, during this reporting period COVID was very challenging for the project. Contact with schools deteriorated sharply and project activities were put on hold. The impact was the most significant for WP3, since schools' pupils are the driving forces of the 2IMPREZS energy saving programme. Since pupils are missing classes and sometimes are prohibited to go to school, they cannot play this role anymore. The partnership tried to identify alternatives for physical interactions (e.g. focus on virtual contact), but the dynamic and results of the current programme-turned-digital cannot be compared with a physical campaign at school.

Progress per country

Flemish partners

Due to COVID-19, the work of **IGEMO** was made difficult during this period. COVID-19 has had a very measurable impact on the project in terms of school outreach. Schools that were previously very enthusiastic were suddenly not sure whether they wanted to participate. At times teachers wanted to continue with the project, but head directors were weary. IGEMO tried to keep contact with the schools and are slowly making up for the disruption by working out a digital educational offer.

The Province of Antwerp has organised several meetings by phone or online, due to the strict measures that were applicable to the schools in Flanders. However they also managed to organise some physical meetings to give feedback on the energy scans that they performed during winter/spring 2020. As part of the feedback, an external energy company (Exergie/VEB) gave advice to the schools to make investments the upcoming years to save more energy.

The Province of Antwerp purchased CO_2 data loggers and some CO_2 displays for all participating schools. They explained to the teachers and students how to use these devices correctly and paid extra attention to the air quality in the classrooms due to the importance of ventilation during the COVID-19 pandemic.

On the educative level they took time to develop e.g.. measure cards and a toolbox, improve the manuals from de energy boxes,.... As schools have other priorities and students are not allowed to pass through the school building to do measurements or to organise energy saving actions, it is difficult to motivate them. Nevertheless they continue to look for ways to support them as well as possible.

IOK had (mainly virtual) contact with schools to develop a tailor-made approach to saving energy. IOK has drawn up a framework contract for the performance of energy audits and the implementation of some energy-saving measures. During this reporting period, several schools carried out a scan or one of these measures. IOK and local partners are supporting 28 schools to save

energy. One extra school, 'VITO Hoogstraten', joined the project this school year.

Danish partners

The focus of **House of Science** during this period has been to complete as many deliverables as possible, gathering data to fulfil the KPI spreadsheet and keeping preschools engaged with the learning boxes. 2IMPREZS was on the schools' radar but not prioritised, and after the summer holidays it was near to impossible to engage schools in the Energy Challenges.

The planned finale, in which students from Belgium were invited to participate, had to be cancelled at a very short notice. Given the circumstances, the schools' focus was on offering the best possible teaching within their curriculum.

In 2021, 2IMPREZS will come to an end. This reporting period, and the next to come, will be marked by concluding on project results and communicating the findings. Sønderborg Kommune/House of Science is looking into how knowledge from this project can be anchored in future projects, how other local projects can merge with this initiative to ensure pupils will continue to be engaged in learning about CO_2 reduction and implementing sustainable behaviours in the future.

The development of E. Wattson (IEODM) by **Syddansk Universitet Mads Clausen Institute** (MCI/SDU) was hit by delays due to internal problems and the emergence of COVID-19. The consequences were that MCI could not progress at planned speed. Significant resources have been spent during spring and summer to sort out the back-end system of E. Wattson because the code apparently had been carelessly created, ignoring good programming practices. This became even more difficult because of the imposed home-office working situation.

After the re-opening of SDU in the summer, progression of E. Wattson has happened at a much higher pace. Many new features and improvement of features have been added; for instance, a scenario called "Make Decisions" has been integrated to assist school children and high school students in gathering the arguments, data and know-how needed to present a persuasive case for green energy change to decision-makers.

Furthermore, a multimedia designer has been attached to improve the visual/graphic expression of the system and to ensure graphical coherence with the Interactive Fact Sheets (in E. Wattson, named 'School Energy Data').

Check out the latest version of E. Wattson – the Energy Detective here: http://2imprezs.sdu.dk/en/

German partner

Over the past six months, **atene KOM** has continued to address both internal and external communication deliverables and goals as explicitly outlined in the communication and dissemination plan, which has been implemented by the entire 2IMPREZS partnership throughout the project. According to an established plan, all necessary tools/products needed to maintain a high level of communication have been developed and are operational by the entire partnership. During this reporting period, updates have been made to the webspace and social media to deliver the agreed core messages and results of the project to its various identified 2IMPREZS target audiences; atene KOM utilises the input of the project partners to regularly update the 2IMPREZS communication channels (webspace, Facebook, Twitter, Instagram, LinkedIn...). atene KOM has also supported the creation of video content and contest applications/submissions for the external communication of the project at the EU-level, which is also distributed across social media channels.

Due to the ongoing pandemic, atene KOM has developed a digital concept which addresses this situation by offering schools an added value that can be used according to the respective needs of the schools. The newly developed digital concept will be used to secure another 6 German schools for the 2IMPREZS Energy Challenges.

Dutch partner

Energy Challenges Foundation (SEC) has completed the campaigns in the schools with an adapted final due to COVID-19. They did not organise central meetings but did schedule meetings individually per school. All participating students have received a correct booklet and a certificate of participation. SEC then began recruiting schools for the new campaign for school year 2020-2021, which has been very difficult due to the ongoing COVID-19 pandemic – many schools have not yet made the decision to participate or not. A total of 17 Dutch schools are participating in 2IMPREZS this year.

UK partner

Southend Borough Council (SBC). The UK has suffered several lockdowns in which schools are closed to the majority of pupils and, in the intervals when they are not closed, school and administrative staff are often overburdened by additional educational and classroom commitments that are understandably prioritised. The volatility prompted by COVID-19 has also affected energy consumption within schools, with alternation between more modest consumption in periods of lockdown to greatly increased consumption when pupils are in school, often relating to

increased heating used to mitigate improvised ventilation, e.g. leaving radiators on for longer and at higher temperatures to counteract open doors and windows. However, SBC is expecting to emerge from lockdown in mid to late February, and is confident they can pursue the remainder of their work within 2IMPREZS.

During periods of lockdown, SBC has worked hard to develop ways of meeting or facilitating progress on our deliverables using alternative means. WP4, which has been most hindered by COVID-19, has sought to develop ways to achieve its deliverables digitally so as to ensure project success by the project end: a digital implementation model was developed to build awareness of E. Wattson's capabilities to support the identification and pursuit of appropriate energy projects for schools and will be rolled out when E. Wattson is fully translated.

The business model sessions have also been developed so that they can be digitally implemented and take the form of guides that can be easily distributed independently of any COVID-19 constraints or impacts. E. Wattson also has reached near completion, with only minor cosmetic and translational amendments to be undertaken.