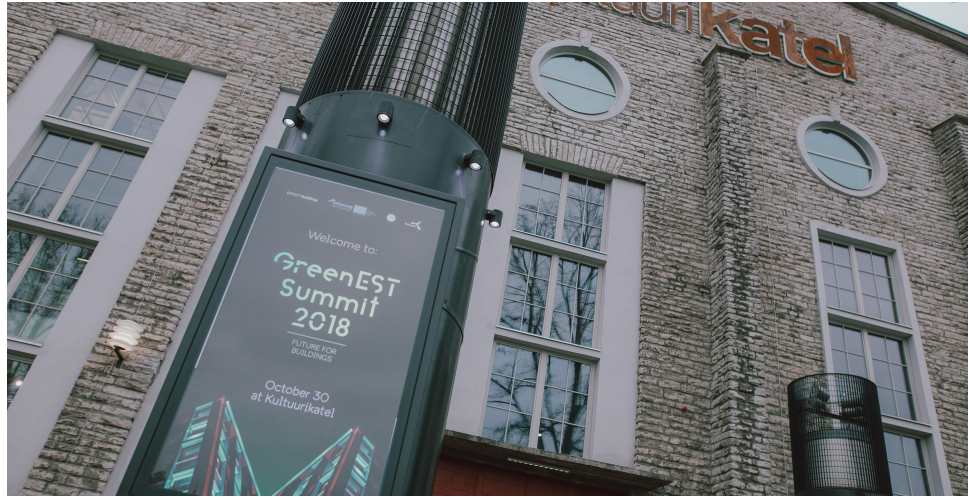


Energy efficient technologies for buildings in the Baltic Sea Region



18

greentech companies presenting technological solutions at the Green Est Summit in Estonia



Engineering solutions from Estonia, Finland, Norway, Sweden, Poland and Latvia

GreenEST Summit 2018: Future for Buildings - 18 smart solutions from 6 Baltic Sea states presented

Future for buildings was the focus of the first GreenEST Summit. More than 200 energy efficiency experts, building managers, architects and 18 greentech solutions providers gathered together on October 30, 2018 in Tallinn Creative Hub. The aim of the event was to improve energy efficiency in buildings. Read more about GreenEST Summit: Future for Buildings

EFFECT4buildings project team had chance to make 15 interviews with representatives of companies and prepared some brief introduction about each solution/product. We hope that these small descriptions will help building managers to learn more about various solutions for improving energy efficiency in buildings.



<http://www.effect4buildings.se/>

Smart Load solutions OÜ, Estonia

Product

Themo – thermostat for electrical floor heating that monitors different conditions (temperature, weather forecast, etc) inside and outside of the home and optimizes the energy use according to the actual energy price fluctuations.

Features

Simple installation, on-line and app surveillance. An interactive LED circle on the thermostat indicates the current energy price. When glowing red the price is at its peak signaling that might be a good idea to shut down other energy consuming devices in the home.



Energy savings

Savings of up to 60% of energy cost possible. When a lot of renewable energy is available in the grid the energy price drops and the thermostat will use this kind of green energy and thus reduce the amount of fossil energy used.

Interesting facts

The product was originally developed by some PhD students in Tallinn. The company has made an extra effort in product design, won second place in Design Award Estonia.

Read more : www.themo.io



Itula, Finland

Product

Itugraf, radiant heating and cooling panel.

Features

Ceiling-mounted panels, heated by warm or cooled by cold water. Low intensity infrared waves distribute the heat or the cooled air. Graphite filling inside the panels ensures efficient thermal conductivity. Suitable for installation in larger buildings; offices, hotels, public buildings and industries and warehouses.

Energy savings

Up to 30% of energy used for heating or cooling. Can be connected to all kinds of energy sources, including green energy like wood boilers and solar energy.



Airobot, Estonia

Product

Smart heat recovery ventilation unit.

Features

Monitors and controls the indoor climate. Temperature, moisture, CO₂, ventilation etc and adjusts according to needs and set parameters. Also goes into low-consumption mode when there is no one in the room and automatically starts cooling during summer or increases the ventilation when someone is using the bathroom. Can be installed in old and new apartment buildings or offices, hotels, etc. Maintenance need is supervised via on-line interface and manual maintenance needed twice a year normally.



Interesting facts

Itula is the leading supplier of radiant heating and cooling systems in Finland and has been active for almost 30 years.

Read more: <https://www.itula.fi>



Energy savings

Up to 40% of energy use.

Interesting facts

Planning to start marketing/exporting the units to EU countries with similar climate.

Read more: www.airobot.ee

Healthy Homes, Sweden

Product

Endura Delta, a demand-controlled heat recovery unit.

Features

Collects data from sensors, e.g. temperature, humidity, CO2 in the rooms and adapts the ventilation accordingly. Heat from extracted air will be transmitted to the supply air. Equipped with an automatic summer bypass where the heated air doesn't pass through the heat exchanger thus achieving a cooling effect. Also equipped with a frost protection mechanism. Can be monitored and controlled via an app. Suitable for family homes, summer houses and apartment buildings.

Energy savings

Up to 89% of the heat is in the ventilated air is transferred to the incoming air. Can be set in holiday mode for minimum energy use.

Effektiv Energi, Norway

Product

EE+ Hands on adaptive regulation for waterborne local and district heating.

Features

A digital platform for energy- and cost-effective management, operation and maintenance. Indoor climate is supervised via wireless sensors with value signals that are reported to smart software. Correct operating temperature is calculated maintaining the temperature at a desired level.

Energy savings

10-25% of the purchased energy.



Interesting facts

The need for ventilation usually peaks in the morning during bathroom and kitchen use. A second peak, on a lower level, is in the evening at dinnertime. During traditional ventilation the air flow usually exceeds the need during most of the day but is insufficient during the morning peak.

Read more: <https://www.healthyhomes.se>



Interesting facts

Effektiv Energi is collaborating with district heating company Eidsiva Bioenergi in Hamar, Norway, on how to develop services behind the substations to its customers. Also interested in developing partners in other countries.

Read more: <https://www.effektivenergi.no>

Tarkvent OÜ, Estonia

Product

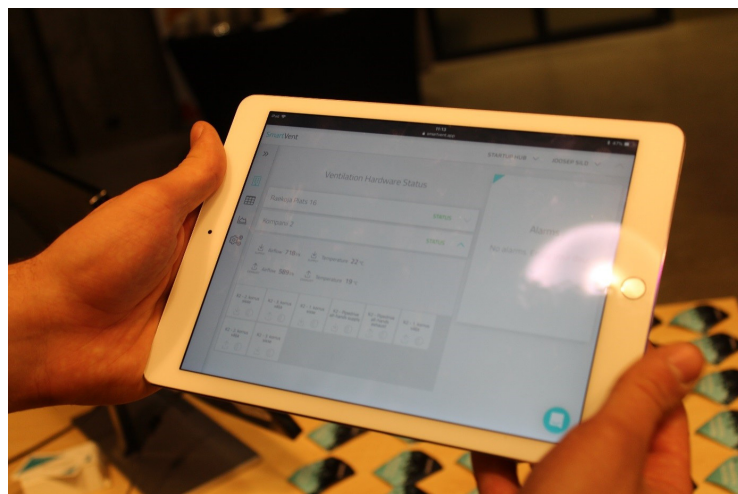
SmartVent, a cloud-based solution for indoor climate surveillance.

Features

Developed for mainly larger apartment buildings, commercial and public buildings. Monitors air climate and energy use in individual rooms or areas. Alarm and user feedback functions. Possible to get a quick overview/status report via the cloud-based interface and historic report for follow-up.

Energy savings

Possible to achieve energy savings via better control of hardware, making planned adjustments and maintenance instead of urgent actions.



Interesting facts

The company is also established in Latvia and Finland. Installation of SmartVent in the first school building is scheduled in 2009.

Read more: <https://about.smartvent.app/>

Velux Active, Denmark

Product

Automated indoor climate control connected to roof windows or flat windows.

Features

Supervision of indoor climate (temperature, moisture, CO2) and automatically opens windows activates blinds and shutters. Can also be controlled manually. Set values can be controlled and altered via the product app.

Energy savings

Can be connected to solar panels, maintains a healthy indoor climate.



Interesting facts

The product is a result of a cooperation between Velux Group and French company Netatmo. Marketed world-wide. A healthy indoor climate is vital because the people in the northern countries spend around 90% of the time indoors.

Read more: <https://www.velux.com/>

Fututec, Estonia

Product

Information system for real estate management.

Features

Cloud-based software intended for large real estate owners like shopping galleries, large buildings, offices and others. Enables collection, analysis and storage of energy use data. Modules for maintenance and statistics.

Energy savings

Mutual energy saving agreements between owner and tenants can be supervised and controlled resulting in reduced energy use and split cost reduction.



Interesting facts

Launched an up-dated version with extended features for shopping centers in November 2018.

Read more: <https://www.fututec.com/>

Aiotec, Estonia

Product

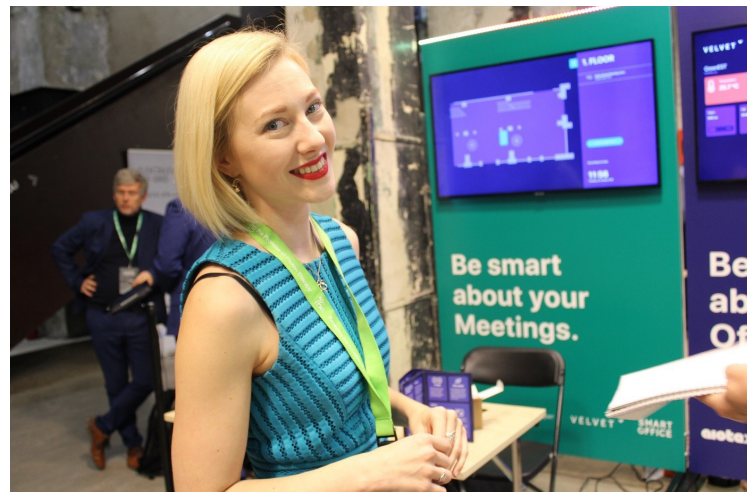
Smart Office

Features

A system for resource management of meeting rooms including surveillance of room climate (temperature, noise, oxygen and more) and adjustments to fit current use. The concept includes everything from booking system to detection of occupancy in the room and adjustments (e.g. increased ventilation) accordingly. Can be connected to all standard on-line booking systems.

Energy savings

When meeting rooms are unoccupied or pre-booked and released the low-occupancy mode is activated, reducing the need for energy use (heating, ventilation, etc) from around 600 W/h to 150 W/h = 75% savings.



Interesting facts

The system also collects data about the length of each meeting. Records from 117 632 meetings using the system in Estonia shows that a “standard meeting” is 56 minutes long. Three companies, Aiotex (IoT infrastructure services and hardware), Velvet (design) and Roomkeeper (software solutions) have collaborated during the development.

Read more: <https://smartoffice.live/>

Passive House Factory, Latvia

Product

Passive houses in two versions; energy use 15 kWh/square meter or 30 kWh/square meter annually.

Features

Up to five stories possible. The building elements are pre-manufactured for quick assembly on building site. Standard models and personalized designs possible as well as public buildings like kindergartens, schools or offices.

Energy savings

The construction is optimized for a healthy indoor climate all year round with e.g. insulation, ventilation, air-tight solutions and heat recovery, achieving an almost self-sufficient solution.

Roofit Solar, Estonia

Product

2-in-1 roof solution with integrated photovoltaic solar panels.

Features

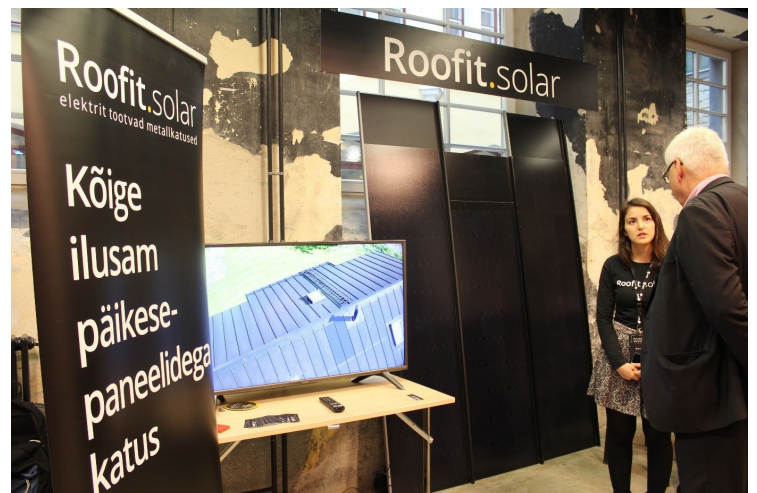
Suitable for new buildings like private homes or public buildings or for complete roof renovations. While the solar panels are integrated the installation is fast and more economical – in comparison with separate roof and solar panel installation. Looks like a standard roof. Can be connected to the grid and surplus energy can be distributed to the grid during sun intensive periods. Estimated life-time 50 years.



Interesting facts

So far (autumn 2018) around 10 houses built in Latvia. The company's construction is the first prefab house being certified in Latvia. The company's operation started in 2017 and marketing abroad is planned.

Read more: www.passivehousefactory.com



Energy savings

Produces 8-7000 kWh solar energy depending on roof size and the location/angle.

Interesting facts

The first roofs were installed in 2017 and has operated for a full season. The company aims to market their products mainly in Estonia and Scandinavia.

Read more: www.roofit.solar

Vesta Eco, Poland

Product

Insulation products made of agricultural biomass (from annual plants) for eco buildings.

Features

Different kinds of fiber board for all insulation purposes. Produced in a hydrothermal process with hot pressing for low energy use during process. Max width 120 mm. Gives several positive indoor climate effects, e. g. effective insulating against noises.

Energy savings

Specific properties of the product allow it to protect buildings against overheating during summer and excessive cooling during winter.



Interesting facts

The raw material is retrieved from the company's agricultural surroundings, around 1/3 of the residue is used. The rest goes to animal food and is left on site. Products also used for renovation of historical buildings. Active in Poland and the neighboring countries.

Read more: <http://www.vestaeco.com>

FM Mattsson Mora Group, Sweden

Product

Water mixers and showers with reduced warm water use.

Features

Mixers with “cold start” with handle in front position enables short rinses without any use of warm water. Showers with special jet design reduces the water flow with maintained shower comfort.

Energy savings

Two installed mixers using this “cold start” can save up to €150 annually (based on a family with average consumption). The example is based on an energy price of €0.01/kWh, water €0.2 /1000 liters, warm water feed temperature of 60 degrees C and cold-water feed of 10 degrees C. Actual savings depends on user behavior and



which mixers that are replaced. Top shower model can cut water and energy use in half.

Interesting facts

World-wide marketing and representation in most European countries. The company has developed “green solutions” for several years and has more recently experienced an increased interest for energy saving solutions on many markets.

Read more: <https://www.fmmattsson.com/>

Wisemet OÜ, Estonia

Product

Remote reading systems for water meters in apartment buildings.

Features

Collects data from sensors, e.g. temperature, humidity, CO2 in the room. Supervision of water, heat, gas, electricity, etc. Accessing of all data via one single gateway and function for sensor control.

Energy savings

Irregularities like water leaks can be spotted at once.



Interesting facts

Up to 1000 sensors can be connected.

Read more : <http://www.wisemet.ee>

Elektrilevi, Estonia

Product

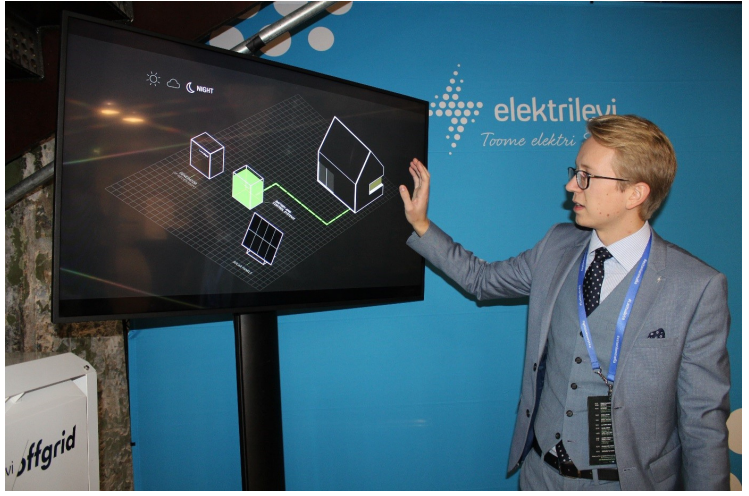
Off-grid energy supply solution for remote buildings.

Features

Consists of free-standing or roof mounted solar panels, battery pack and a diesel generator. The solar panels are automatically charging the battery pack for energy use during dark hours. Diesel generated energy used when the battery pack runs low. Installation time around two days. Special attention has been taken to reduced sound level.

Energy saving

Less fossil energy use than solutions with only diesel generated energy. The diesel engine runs for about 5% of the time and need to be fueled once a year – less energy used for transports.



Interesting facts

Currently set-up at four pilot sites and many pending projects. Elektrilevi is Estonia's largest energy supplier and the solution is also developed as a possibility to replace old and energy lines to reduce the total cost of electricity supply for rural homes and other remote buildings. Especially suited for summer homes.

Read more:

<https://www.elektrilevi.ee/en/offgrid>



EFFECT4buildings

GreenEST Summit 2018: Future for Buildings was organized by Science Park Tehnopol in the framework of the project "Effective Financing Tools for implementing Energy Efficiency in Buildings" (EFFECT4buildings). EFFECT4buildings is implemented with the support from the EU funding Programme Interreg Baltic Sea Region (European Regional Development Fund) and Norwegian national funding. The aim of the project is to improve the capacity of public building managers in the Baltic Sea Region by providing them a comprehensive decision-making support toolbox with a set of financial instruments to unlock the investments and lower the risks of implementing energy efficiency measures in buildings owned by public stakeholders. For more information: <http://www.effect4buildings.se>