



Energy is our Future: Chat No. 2 Building for a Sustainable Future: How to reduce Energy Consumption in Housings?

Age group: 12-19

Date: 05 November 2007

Time: 11.00

Guest: [Dr Matthias Hensel](#), Director of Luwoge, Germany

Language: English

Participating schools

Bulgaria: Hristo Botev Secondary School, Vratza

FYROM: SUGS "Braka Miladinovci", Skopje

Italy: Liceo Scientifico "Pellecchia", Cassino

Italy: ISC Cardarelli-Massaua, Milan

Poland: Miejski Zespól Szkol nr. 3, Bedzin

Romania: Secondary School Corocaiesti, Suceava

Slovakia: Zakladna skola, Poprad

Spain: Decroly, SL, Santander

Chat transcript

EUN-Petru: Good morning everyone and thank you for joining us today! As you know our chat guest is Dr Matthias Hensel, Director of Luwoge, in Germany. Let's start our chat activity.

Hensel1: Good morning everybody, pleasure to be with you all in this chat room. LUWOGÉ is a housing and real estate company that is part of BASF, the Chemical company. We operate more than 8000 apartments and gained public recognition with the "3-Liter-House". Now shoot your questions!

Spain: How does the thermal radiation system work in order not to need radiators?

Hensel1: Spain: If you don't want to have radiators in your house you have to build a so-called passive-house. Passive house means extensive thermal insulation, controlled ventilation system with heat recovering and triple glassed windows

Italy1: How long is it possible to go on this way before it's too late? What we mean is consuming not reducing Co2, not pay attention to the environment.

Hensel1: Italy: The housing sector contributes by about 40 per cent to the CO2 problem. Whatever you do here has a huge impact on climate change

Spain: Is it advisable for very old buildings to invest in this technology?

Hensel1: Spain: our experience and calculations we did suggest that a reduction from 20 to 25 litres to seven litres per square metre always makes sense. Apart from that it depends on the location of the building. And keep in mind, that to improve energy efficiency in existing building is also a good investment because it creates jobs and improves the tenants' comfort.

Italy1: One of the main problems in the southern Italy is the lack in the diffusion of solar panels and photovoltaic systems, do you think that would be useful?

Hensel1: Italy: we use solar panels and photo-voltaic whenever it makes sense, but it has to be integrated in "the system house". Today you also need public sponsoring, but I know that BASF and other companies are working on a technological breakthrough that is much more cost efficient.

FYROM: How can be solved problems with serious indoor air pollution as well as greenhouse gases when 2,3 billion lack access to clean cooking fuels?

Hensel1: Fyrom: your question is directed toward a general problem of poverty and development, the plastics industry can definitely contribute here, but the incentive has to come from supranational organisations.



Figure 1: Students from Miejski Zespól Szkól nr. 3, Bedzin (Poland) during the chat (Coordinating teacher: Beata Grela)

Bulgaria: What kind of incentives should be used in order to make people save energy in their homes? Should there be a state policy obliging citizens to do so?

Hensel1: Bulgaria: support by the state is probably needed in this stage. The state has to set clear regulations about the standard of energy efficiency and give direct financial incentives. But another problem we have is the knowledge about products and the quality of the craftsmen.

Spain: If the building is very old, is it safe for the workers?

Hensel1: Spain: safety regulations have to be followed, that is obvious. Sometimes its the best solution to tear down the building and build a new one.

Italy1: Where we can get complete information about this topic? (Our school building is in progress we would like to send that to our politicians).

Hensel1: Italy: what is needed is a concept put together by an engineer, if you have details questions please contact me afterwards.

Bulgaria: Are there many companies in Europe that build energy-efficient houses? According to you, is the number of people, willing to make their homes energy-efficient, increasing?

Hensel1: Bulgaria: the number of housing companies is increasing year by year, because the technology is available and cost-efficient. However, the scale-up of this technology does not yet really work in the private sector. Here the state has to support.

Spain: How much time is involved in modernizing a building five floors tall to make it more energy efficient?

Hensel1: Spain: planning takes about six months the actual construction 6 to 9 months.

FYROM: How green roofs provide environmental and human health benefits and how much they can be implemented in existing buildings?

Hensel1: Fyrom: we do not have a lot of experience with green roofs, sorry.

Bulgaria: Is it possible to construct a building that would be self-sufficient, i.e. it would produce its own energy, and environmentally friendly?

Hensel1: Bulgaria: to make this happen we used thermal insulation by 30 centimetres Neopor, a new polystyrene foam by BASF, high technology ventilation system and windows and solar panels to generate electrical power for heating. We just modernised an existing build with 16 flats into a zero heating cost building. That means the tenants to not have to pay for heating and warm water.



Figure 2: Students from Secondary School Corocaiesti, Suceava (Romania) during the chat
(Coordinating teachers: Lacramioara Clucerescu & Calin Pinzaru)

Poland: Can all existing buildings be renovated? What is the cost of the renovation and how much time do we need to renovate an old existing building?

Hensel1: Poland: from a technical point of view yes. From a business point of view it depends on the location, local market situation. In Germany we calculate of additional cost for energy efficiency of 100 to 200 Euros per square metre. The cost depends heavily on the local cost of labour material makes up for just 30 % in Germany.

Italy2: We know that everything we humans do indeed has an impact on the environment (i.e. going to school by car, leaving TV on standby, lights on at home while we are away), but what should we do in order to build a sustainable future?

Hensel1: Italy2: a sustainable building should not use any external energy. From a technological point of view that is possible using high tech materials like plastics. What we have to achieve is acceptance by the owners or tenants and public support.

Poland: Are there any rules in UE which order using environmentally- friendly technologies? If not, is it going to be introduced?

Hensel1: Poland: the EU sets standards for energy efficiency and is going to increase these standards. Which technologies are used depends on the regional contraction habits. However, there is a clear trend towards a passive house technology for new buildings.

Italy2: What are Zero-Energy buildings – ZEB – or Net Zero Energy buildings? Are they common in European countries?

Hensel1: Italy2: ZEB's produce the energy they are consuming. Right now these are technological prototypes but the development is going in this direction.

Slovakia: What do you suggest to make it cheaper?

Hensel1: Slovakia: the more buildings are modernized the cheaper it gets. High energy cost also help to initiate the process.

Slovakia: What differences does it make?

Hensel1: Slovakia: Investments in energy efficiency do not make sense from the economical point of view if prices for energy are low. If you want to scale up the process you can reduce cost e.g. by economies of scale or consider the investment as an insurance toward higher energy cost in the future

Romania: What do you think about Biohotels? What about Biohouses?

Hensel1: Romania: from my point of view the key challenge is not to be "bio" but to be energy efficient to reduce CO2 emissions.

Poland: When have you been interested in building techniques for the first time?

Hensel1: Poland: We started a development project in the mid 90ths, the first three litre house was completed in 2001.

Italy2: Which will be the main of sources for energy savings in the houses of the future?

Hensel1: Italy2: The thermal insulation by the building envelop, 60 to 70 % will come from that.

Slovakia: How many and where do Near-Zero Energy Houses exists?

Hensel1: Slovakia: By now we have about 8,000 passive houses in Germany. If you would add a solar panel and photovoltaic a passive house becomes a zero energy house. The University of Darmstadt recently won a world-wide competition for ZEB's in Washington. Look at the internet. That's breaking technology.

Romania: How can we decrease the energy consumption that is based on the coal?

Hensel1: Romania: You achieve big steps by controlling the room temperature, by replacing the existing heating system and by adding a thermal insulation around the building.

Poland: What is the total cost of renovation of a standard house? Most of Polish citizens earn not enough money to renovate their houses. Do you have any idea how to solve this problem?

Hensel1: Poland: Every year 2 to 3 % of the existing buildings are renovated. In an ideal world all these buildings are modernised to a high energy efficiency standard. In Germany we are not reaching more than half of this goal.

EUN-Petru: Dr Hensel, on behalf of all the registered schools with the Energy is our Future programme: in terms of reducing energy consumption in housings to make a contribution to a sustainable future, what is your message to the young generation?

Hensel1: To all: a lasts word: Energy efficiency is the key challenge for the future. The technologies and products are available. Start the process in your local environment with your school and your town. I wish you all a bright future.

Slovakia: Thank you very much for interesting information and we are looking forward next chat conference.

Italy2: Yes, we have enjoyed it very much and we hope to take part in another one.

Italy2: Many thanks to Dr. Hensel for his answers and to Petru for hosting us on this interesting chat. Good bye from Milan and see you next time. Ciao!

Poland: It was very nice to be here with you. We really enjoy the chat.

EUN-Petru: Dr Hensel, thank you very much for taking your time and being a teacher to eight schools from seven countries! To all schools, thank you very much! We hope that you have enjoyed the chat. Thank you Dr Hensel and all the best from Brussels!

Poland: Have a nice day and see you next time! Greetings from Poland!

PlasticsEurope: Warm thanks to Dr Hensel for his very constructive participation and to the schools for the well documented questions. Regards from Brussels!