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synthos

WE WANT TO BE A LEADER OF RESPONSIBLE SOLUTIONS

Interview by Grzegorz Przepiórka

We know that construction sector is far from being green. But what about chemistry? How far is this sector from not even the ideal, but from the standards set by the EU? How much does it have to do and how quickly are such changes implemented?

Zbigniew Warmuz: As an industry, we are just starting on this path. We have ambitious goals, ideas on how to achieve these goals, and even specific, initiated projects. But the road to reaching the goal is still very long. And expensive.

Changes at Synthos are determined by the Evergreen strategy, in which one of the primary goals is to reduce greenhouse gas emissions by 28% by 2030 per GJ of generated and purchased energy. This endeavour is supported by, among others, investments aimed at switching Synthos to zero- and low-emission energy sources. Four years ago, Synthos launched its first industrial photovoltaic farm on the premises of its plant in Oświęcim. What happened next? Has the company made any further investments in this area?

Z.W.: This year, we launched a new installation in Oświęcim that produces technological steam and electricity powered by natural gas. It replaced two worn-out coal-fired boilers. We continue to invest in photovoltaics, at this stage we are focusing on roof installations.

Where are you today in terms of the goal of reducing energy and utility consumption by ten percent (per ton of manufactured product)?

Z.W.: Over the past 2 years, we have implemented and continue to work on dozens of projects initiated by our

employees, focusing on saving energy and utilities. To provide a reliable answer to this question, we “only” need the market situation to improve, especially in the construction sector. Then our production facilities will be loaded and we will be able to correctly calculate the effects of the implemented projects.

The implementation of a hydrogen technology project is to help Synthos significantly reduce emissions. Hydrogen, that’s pretty ambitious. At what stage is the project? And by how much will it reduce carbon dioxide emissions?

Z.W.: We are starting to implement this project. We have a team, schedule, budget and we’re about to start. We have high hopes for this project. Hydrogen is the cleanest, although not the easiest technological element. We have an idea for using hydrogen, but it is too early to talk about it.

Another goal. 13% of the raw material base is to be bio-raw materials or recycled raw materials. I propose that we focus on products for construction, and let’s start with EPS. Synthos is the first manufacturer in Europe to introduce to the market grey EPS containing 20% post-consumer waste. It is subject to continuous improvement, thanks to which the current content of recycle in the product is already 30%. Are there prospects for more?

Agata Gładysz-Stańczyk: Absolutely, there are prospects for more in terms of the amount of product containing post-consumer waste that we will introduce to the market, but not in terms of continuous increase in the



content of recyclate in the product. The reason is quality barriers. Recycled raw material is very difficult to process and, unlike the basic raw material, it can have significantly variable quality parameters. That is why we are focusing on increasing the sales volume of products containing recyclates, but as Mr Warmuz mentioned earlier, the market situation needs to improve, because these products are more expensive than standard ones.

Synthos obtains polystyrene recyclate, among others, from manufacturers of audio/video and household appliances and food packaging that use polystyrene. You have contracts with several European suppliers. For today, that's probably enough. But what does the future hold for recycling? And how else does Synthos create mechanisms for obtaining the raw material?

A. G.-S.: There are many various models in Europe, which is due to the lack of uniform standards in European regulations regarding the collection and sorting of various materials. Firstly, we are building a very wide pipeline of suppliers, including outside of Europe. Secondly, Synthos is becoming part of industry consortia emerging on various markets, which will guarantee us access to the raw material. Also in Poland, we will try to convince the regulator to initiate a separate stream for the collection of polystyrene, both packaging and construction, especially since current and developing technologies allow for its recycling.

What changes are necessary to ensure that the recycling market does not trickle down like a stream, but flows like a fast river, while allowing companies that have an idea for using waste to take advantage of the opportunity?

A. G.-S.: First of all, as I have already mentioned, a separate system for collecting polystyrene should be created, excluding it from the general collection of household waste. Another issue is investment in recycling technologies. These technologies are constantly developing and while we can process clean polystyrene relatively easily, contaminated construction polystyrene – which will soon increase due to the wave of renovations – requires more advanced and expensive technologies.

Synthos is working on the development of modern, highly advanced recycling technologies that will allow for the effective processing of construction polystyrene, including

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that originating from the demolition of insulation. What do these technologies involve and when can we expect them to be launched?

A.G.-S.: Advanced chemical recycling technologies involve cleaning polystyrene waste from chemical contaminants, including flame retardants and dirt, and depolymerizing EPS to form styrene, which is the basic raw material used in the production processes of polystyrene, including EPS. These are expensive, complicated and high-energy chemical processes, which means that chemical recycling technologies are still at the pilot stage. There are no such industrial solutions yet. Synthos is currently evaluating several alternative technologies - we will probably make the final choice within 2 years. In the case of clean polystyrene waste from packaging, mechanical recycling technologies are already widely used. Synthos already has such installations.



Synthos production plant Breda, Netherlands



Synthos Dwory production plant in Oświęcim

Let us now debunk a myth that is still alive in the industry, namely that what is recycled is of lower quality. Let's use InVento as an argument, whose thermal conductivity coefficient does not exceed 0.031 (W/m x K).

How was this achieved?

A.G.-S.: This is the result of a huge number of tests performed on the installation. We adjust the parameters on our installations to the changed raw material composition. We work very closely with our customers, and each new product is subject to their assessment. The biggest challenge is, as I have already mentioned, finding a balance between the level of recyclate content, its quality and the quality of the final product. While basic raw materials provide us with constant parameters, in waste raw materials each batch is different, which translates into the need to implement completely different standards in the quality control process and the number of tests. It is painstaking work.

Apart from the challenges related to recycling, what will be the key challenges for the expandable polystyrene industry?

Z.W.: There are many. We are constantly working on improving the performance parameters of our products. We want to produce and deliver safe, recyclable and technologically advanced products to our customers. An example of such a product is our grey expandable polystyrene.

A.G.-S.: Another challenge for the industry is the European Union's climate agenda and the constantly changing goals of the circular economy, including recycling in individual applications. Unregulated and unstandardized certification systems for green products, as well as the lack of uniform standards for calculating the carbon footprint.

In a previous interview for "Builder", you mentioned that thanks to an innovative approach, grey polystyrene boards are gaining more and more recognition.

Do you know what the approximate market share of grey polystyrene boards is today?

A.G.-S.: At the European level, it is about 30% grey boards and 70% white. The trend is clear. Demand for grey



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polystyrene will grow more dynamically than for white due to its better insulation parameters.

How do you assess the pace of thermal modernisation in Poland, the adequacy and popularity of programmes designed to support this process, the basis for future changes in this area?

A.G.-S.: There are many programmes supporting various forms of thermal modernisation. Starting from changing the insulation systems in buildings, to changes in the scope of heat sources and energy acquisition in buildings. However, this multitude of programmes and relatively low subsidy thresholds mean that in our opinion these programmes are not effective and require change. Several elements are needed. Redefining the subsidy thresholds to make them widely available.



Appropriate education at the national level, so that end users are able to decide easily and quickly which programme is best for them. They should also be aware that the building must be properly insulated first, and only then decide what heat and energy sources will be installed. Not the other way around.

Synthos is aware of these needs. We are a partner of the nationwide #poznajstyropian campaign, the aim of which is to educate end users about the impact of insulation on reducing emissions and energy consumption, which also translates into their wallets.

We hope that the newly approved European Directive on the Energy Performance of Buildings (EPBD) will spark a more dynamic discussion at the government level and that the path of introducing implementing regulations for the directive, which Poland must present by 2026, will take into account ambitious goals, not only due to the scale of CO₂ emissions, but also due to rising energy costs. A well-built national EPBD enforcement programme will allow for obtaining appropriate subsidy thresholds from the European Union.

Synthos is the number one producer of expandable polystyrene in Europe. How did the company get to this position? What does this mean in numbers, percentages, both in Poland and in terms of export?

A.G-S.: We have achieved this position by building long-term relationships with our customers, thanks to a wide portfolio of high-quality products and acquisitions that we have made in the Czech Republic, the Netherlands and France.

Nearly 80 years have passed since the company was founded, and exactly two decades since its debut on the Warsaw Stock Exchange. How has the company developed over the last 20 years?

Z.W.: Fast and intensively. We have built new installations and purchased new businesses. We are in a completely different place now than we were 20 years ago.

We started our conversation with the issue of sustainable development and ecology, because this is the area where the most work needs to be done, however, the

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responsibility that the EU requires concerns three areas. Synthos' report on sustainable development is due to be published soon. What image will the company bring in the other two areas? What kind of work environment is being created at Synthos?

Z.W.: For the past two years, we have been working intensively on developing the organisational culture. By developing our activities in the ESG area, we want to create a work environment in which our employees can not only fulfil their professional ambitions, but will also be convinced that they actually have an impact on the lives of future generations and the future of the planet. Our goal is to build a culture focused on partnership relations and the development of competences. It is a long-term process that requires determination and consistency. A lot has been changed, but there is still a lot to do.

What other aspects, not mentioned in this interview, will Synthos focus on in the coming years? What is the company's vision?

Z.W.: We want to be a leader in innovative and responsible chemical solutions. We want to have a motivated, energetic, creative and satisfied team. Speed and flexibility. That is Synthos.



Synthos Kralupy production plant, Czech Republic