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## **MACROENVIRONMENT ANALYSIS OF THE HEATING INSTALLATIONS MARKET IN POLAND – IMPACT OF LOCAL AND GLOBAL FACTORS**

*The main aim of this paper is to analyse the heating installations market in the macroenvironmental context. In this paper the objectives of the macroenvironment analysis will be presented and the current state of the HVAC branch in our country will be assessed. Finally, the PEST analysis will conclude all the considerations.*

### **1. Introduction**

Managing the company in a successful way would be impossible without the knowledge of the firm's environment. The understanding of the enterprise's surroundings is crucial to make wise decisions connected with the company's strategy. Various factors, which can be totally independent from the firm's actions or resulting from its undertakings, influence the company in a serious way. The key to success for the management is to be able to observe the environment closely and draw conclusion from such analysis, resulting in the awareness of the threats and opportunities for the enterprise.

In the heating installation business, which is the major part of the Heating, Ventilation and Air Conditioning branch and often being treated as its equivalent, the market is very dynamic and the components of the environment are changing rapidly. Therefore, a constant, in-depth monitoring of the company's surroundings is fundamental for adjusting the strategy to the existing situation as well as possible.

The aim of this paper is to analyse the HVAC branch macroenvironment, concentrating mainly on the heating equipment part of the market. All the environmental factors which have an impact on the business should be identified and used to create the PEST analysis. Such elaboration can be later used as an input to the SWOT analysis of the company operating in the HVAC sector.

In this paper, firstly, the definition of the macroenvironment and the principles of its analysis will be presented. The next step will be the actual analysis, consisting of describing the general situation on the market as well as the development of the specific devices' markets. Finally, a table containing the PEST analysis of the HVAC branch will be presented.

## **2. Macroenvironment analysis objectives**

The company environment can be described as a set of factors, e.g. workforce, available materials, financial issues, accessibility of information, etc. which are not the direct components of the company, but the change in these features might cause a change in the condition of the company itself [1]. The marketing environment consists of all the participants of the market, connected with the firm in any way, as well as all the forces outside marketing which have an impact on company's ability to sell their products and maintain a successful relationship with the customers [2]. These factors can be divided into macroenvironment (a collection of general conditions) and microenvironment (the forces closest to the company). Both elements, combined together, create a collection of the non-controllable elements of marketing. The effective management may minimize the negative impact of those forces and use the possibilities arising from them by adopting a highly proactive strategy.

The first part of the analysis is the research connected with the macroenvironment. The macroenvironment is made up of a broad set of forces which has an impact on the company's operation, however are completely independent from the company's actions [3]. The factors of the macroenvironment create possibilities of improvement for the company, however they can also pose threats for the firm's activities. These factors include demography, economy, technological trends, political and legal issues, social-cultural conditions, etc. [1]. In this paper, the six most important of them presented.

Firstly, the demographic environment is crucial in terms of deciding to whom the offer should be directed. Demography describes human populations in terms of size, density, location, age, gender, education, race, occupation, and similar statistics [2]. Changes in these factors have a huge impact on how the company's marketing strategy should be formulated, thus the demographic data should be often updated and revised by the firm.

Demographic environment can be considered in two variations: consumer and business demographics. The consumer demographics is knowledge connected directly with the human population and its changes, which affect the company's strategy e.g. growing number of young people requires adjusting the advertising

to their language, increase in birth rate creates an opportunity to sell child care products, growth of average household income suggest the possibility of bigger spending, etc. On the other hand, the business demographics deal with the changes in the industry, e.g. the number of companies in a region, number of the employees, average profits, etc. This section of environment analysis shows also the formation of new business trends, which form the opportunity to benefit from them [4].

Next part of the macroenvironment is the economy and its current fluctuations. The analysis of this section involves economic factors that affect consumer purchasing power and spending patterns, e.g. income, debt, credit usage, buying power, as well as the general trends in economy – growth, stability or recession [4]. Such knowledge is especially important in predicting the sales levels – an increase in personal income means also an increase in consumer goods sales, while the growing debts of the companies indicate that these firms will not be willing to invest as much as before. It has to be remembered that the economy should be analyzed not only locally, but also in the global range as the changes in one place might have an impact on another location. An example of such impact comes from the construction industry, where a decrease in number of construction works in one country, might mean great problems for the construction machines producer.

Another factor discussed in the macroenvironment analysis is natural environment, which involves the natural resources that are needed as inputs the resources which are affected by companies' activities [2]. In this part of analysis, marketers concentrate on resources, such as water, coal, gas, wood, etc. and their availability to the business. Here, also the issues of environmental protection should be considered. Currently, one of the biggest problem of the humanity is the fact that the resources are diminishing and the nature is becoming more and more polluted. Such situation compelled the governments and organizations to introduce rules against environmental damage. Such rules may take forms of emission caps [5], used to reduce CO<sub>2</sub> pollutions, limits on fishing, obligation to dispose the waste in a certain way, etc. All of these factors have a real impact on the company, as its operation must be adjusted to the current ecologic situation and laws.

Furthermore, the macroenvironment includes the technological environment, probably the quickest changing and surprising element of this analysis [2]. The emergence of new trends in technology may facilitate the company's operation (GPS, Internet sales, etc.) or become a possibility of creating a new product (smartphone applications). While analyzing the technological environment, the marketers have to consider following impacts of innovations in this sector: how



they influence the buyers, the competitors, the suppliers, what are the new laws and regulations connected with the new technologies, what substitutes of the products may emerge because of the changes.

Next factor, belonging to the macroenvironment, are the political and legal trends [4]. The most important part of this environment element are the laws and rules, which influence the company's operation. These regulations might consider almost every aspect of the firm's activity. Firstly, there are laws describing the obligations connected with the legal form of the company, e.g. taxation rules, excise duties, labour law (describing company's liabilities to its employees), etc. Moreover, the law might regulate also the situation on the market by banning the unfair competition, e.g. by implementing the antitrust laws or deregulation of some branches. Finally, the regulations might consider also environment protection, methods of product packaging, obligation of placing certain information on the product, etc. In addition to the law, political trends are also important for the company as the changes in political situation might indicate changes in the legislation.

The last major category of macroenvironment analysis are the socio-cultural aspects [6]. This element of the analysis is connected with research on the state of social and cultural differences of the whole societies and the target markets. Nowadays, the diversity of the markets is growing therefore knowing the nature the socio-cultural trends is crucial to react quickly for the changes. Such knowledge includes several groups of information considering the society, e.g. ethnicity, languages spoken, religion, beliefs, etc. Moreover, the marketers need to follow the trends in the popular culture closely as it tends to be volatile and the managers need to react fast to any switch in the trends. In addition, the core beliefs and values of the society are also the subject of relatively fast transformations, therefore this aspect needs to be monitored as well.

Summing up all of the above considerations, the macroenvironment research can be presented in form of the PEST analysis, which involves a division of all the factors, described in this subchapter, into four categories: political, economic, socio-cultural and technological factors. Such analysis is the basic tool used the companies to realize how the external forces, not necessarily directly connected with the business, are influencing their operations. The simple scheme of the PEST analysis is presented below.



Fig. 1. The PEST analysis

Source: author's elaboration based on A. Pomykałski, *Zarządzanie i Planowanie Marketingowe*, PWN, Warszawa 2012.

### 3. Macroenvironment analysis of the heating installations branch in Poland

Environment analysis, in case of the heating sector, would mostly be consisting of economic and technological aspects as the most important groups of the factors affecting this market. Obviously, the economy and buying power of the potential customers always have a great influence on any company. In the HVAC business, technological trends determine the development of the market and the success or failure of the firm. Still, the other factors should not be forgotten, as they still can have an undeniable impact on the enterprise's well-being, e.g. political factors, such as applicable laws.

To describe current trends related to the HVAC market situation, one must take three aspects of the industry into consideration: housing and industrial construction market, the market of heating appliances and the development of the renewable energy sources, applicable in the heating processes. Moreover, the knowledge of a general situation on the main markets also helps in determining

what the future opportunities or threats might be. It has to be noted that, while researching the data connected with these branches, the main area of interest should be Poland, however general, worldwide and European, trends should not be omitted.

Firstly, the overall condition of the European and Polish markets should be examined. The basic index visualizing the economic situation is the Gross Domestic Product per capita (fig. 2).

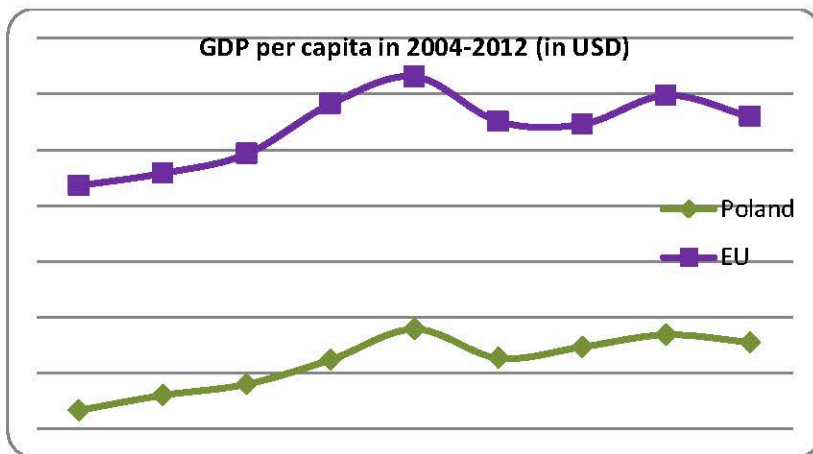


Fig. 2. GDP per capita in Poland and EU in years 2004-2012 (in USD)

Source: Eurostat, May 2014.

The figure 2 depicts the Polish GDP and compares it to the average GDP in the European Union. It can be seen that both values undergo similar changes, however Polish GDP is still much smaller than the average European value and the difference between both is not decreasing. The data shows an improving trend up to the year 2008, when both values reached their peak – 13 886 USD in Poland and 36 537 in the European Union. It has to be noted that in the first four years after entering the EU, Polish GDP has increased by 52%. Unfortunately, since that time the GDP seems to fluctuate around in the lower regions. Since 2008 the GDP value has fallen by almost 10% to 32 954 USD in the EU and has dropped by 9% and reached the level of 12 710 USD in Poland. Therefore, the situation can be described as deteriorating and, as a result, the situation on the construction and HVAC market may deteriorate as well.

Usually, the construction industry answers to the changes in the market situation. Prosperity periods are often followed by increased activity in the construction business, as investors want to use the money by e.g. building or renovating houses, industrial halls, etc. On the opposite, difficult economic situation brings construction market stagnation and investors tend to reduce their



activities. Still, there are not enough proofs that the increase of GDP influences proportionally the increased movement in the construction or HVAC branch. However, it is often observed that the general economic crisis tend to have a great impact on the companies operating in the business in question.

To start with analyzing the market of the heating, ventilation and air conditioning market, the condition of the construction business will be discussed. The fluctuations in the HVAC branch performance, as well as in case of the sanitary installations, are strongly connected with the general construction industry, thus it is crucial to understand this market fully before designing a marketing strategy for any company dealing with HVAC.

Table 1. Value of construction works in Poland in years 2011-2013 in comparison with analogical periods in previous years (previous year's period = 100)

Value of construction in comparison with analogical period of previous year (previous year = 100)	2011				2012				2013			
	I q	II q	III q	IV q	I q	II q	III q	IV q	I q	II q	III q	IV q
general construction product sales	118,6	120,6	118,1	116,1	114,6	107,8	101,4	98,9	84,9	78,5	84,4	88,0
consisting of:												
buildings construction	108,1	104,0	104,2	101,8	104,5	108,1	99,9	97,5	87,3	79,1	84,9	87,8
civil and water engineering constructions	127,0	139,9	130,3	125,9	136,6	108,5	102,1	100,6	79,9	72,3	79,5	84,7
specialist construction works	130,3	129,1	128,1	129,5	110,3	106,1	102,8	98,4	87,2	86,1	91,0	93,8

Source: Central Statistical Office, Poland.

The data from the Table 1 shows that the value of the construction works in Poland in the end of 2013 has decreased in comparison with satisfying results from the previous years. This drop in production is visible especially in the field of civil engineering construction, with the other sectors decreasing less significantly. Still, according to the Central Statistical Office of Poland, the

building construction sales in the end of 2013 consisted only of 87.8% of the value from the end of 2012. Moreover, the average price of construction product has been decreasing steadily since 2012 and in the end of 2013 has dropped by 2% in comparison with the previous year [7].

Another indicator of the situation on the construction market can be the place of the market in the business cycle, perceived by the entrepreneurs. Polish Central Statistical Office conducts such research each month, by asking the company owners how they evaluate their situation in comparison with the previous months. The results show the general mood on the market, which currently can be depicted in a form of the figure 3.

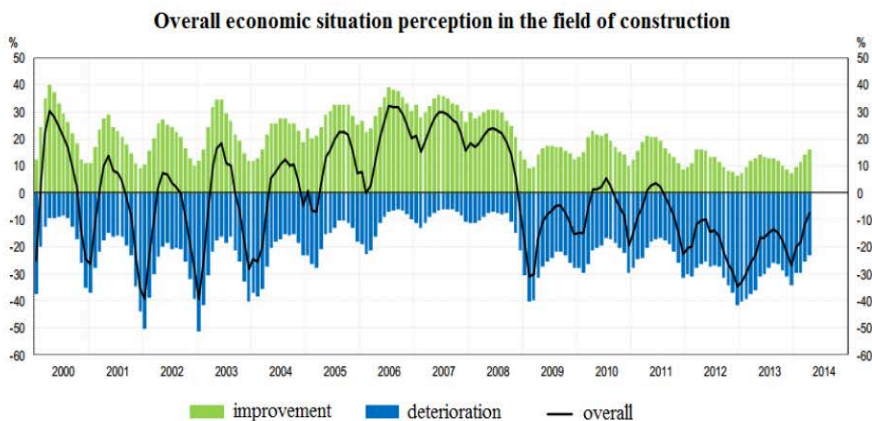


Fig. 3. Overall economic situation in construction in Poland in the years 2000-2014

*Source: Central Statistical Office, 15.05.2014.*

In May 2014, 16% of the construction companies rated their situation as improving, while 23% as deteriorating. The rest did not notice any change. That states the level of situation perception at the value of -7% (-12% in the similar period of the previous year) [8]. It can be observed in the data provided by Central Statistical Office, that the construction business undergoes yearly fluctuations, with the peak usually falling somewhere in the second half of the year. Following that pattern, it can be assumed that the year 2014 is close to its highest value and soon the decline will take place. It also has to be underlined that the economic situation has been in the low regions since a huge drop in the 2008 crisis and there has not been a month of positive conjuncture since 2010.

Moving on to the more detailed analysis, the number of dwellings built can be considered. According to the Central Statistical Office, three categories can be distinguished: dwellings completed, dwellings where construction started and those for which the permit has been granted. The data for the period from 2010 until May 2014 can be seen on the figure 4.



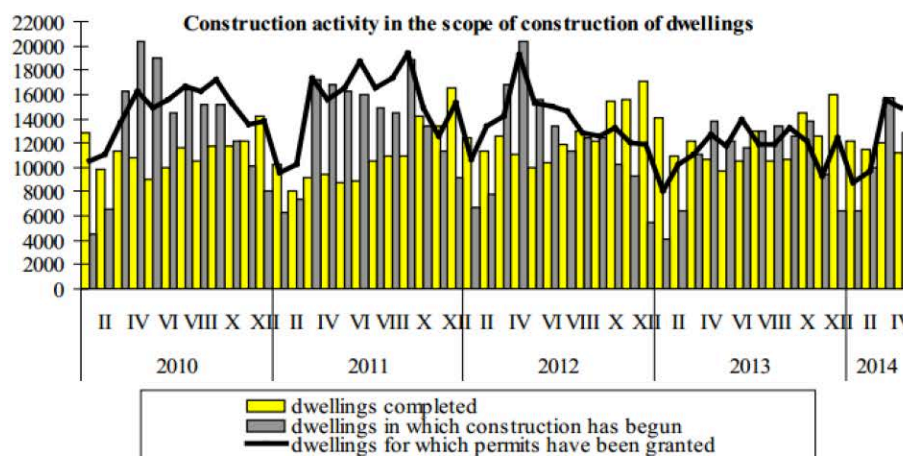


Fig. 4. Construction activity in the scope of construction of dwellings  
(number of dwellings)

Source: Central Statistical Office, 15.05.2014.

As can be observed above, the beginning of 2014 might indicate slight improvement of the situation, with both the construction underway as well as permits number have increased. Still, it has to be remembered that each beginning of the year brings increase in permits and construction starts as the construction season begins. The reason behind it is the Polish climate – scheduling works for winter is risky due to the possibility of snow and freezing. Moreover, despite the situation being better than in similar period of 2013, there are still less construction works in terms of dwelling than in the previous years. It is also worth to mention that Łódzkie Voivodeship ranks 7<sup>th</sup> among Polish regions where the dwellings are concerned and it has experienced an 18% increase in comparison with 2013 [9].

It can be seen that the situation on the construction market is currently complicated and it is difficult to predict whether the signs of improvement will not be misleading. However, it should not be forgotten that the heating installation companies' field of operation is connected not only with new buildings, but also with modernizing of the existing ones, thus the data presented above does not show the complete view of their preferred area of business. The general tendencies in the construction market can be treated as a main indicator for the HVAC branch.

As a next step of the environment research, to gain an in-depth view of the current opportunities and threats for the branch in question, the trends observed on the HVAC market should be carefully analyzed from the point of view of technological, legal, social and natural factors. Here, the data demonstrating the

development of sales of specific HVAC devices ought to be presented. The emphasis should be put especially on the new technologies which are gaining popularity and often are becoming a necessity due to laws against climate changes, e.g. various devices based on renewable energy resources.

The move towards more environmentally-friendly technologies should be taken into consideration, analyzing both the technological as well as the legal and social issues. It has to be noted that this is a global trend. The world leaders, alarmed by the scientists, have understood that the Earth needs protection from the harmful pollutions and aggressive abuse of the resources such as oil and coal. Therefore, various regulations aimed at protecting the nature and developing the “green technologies” has been implemented lately all around the world.

In the European Union, one of the most influential issues is the implementation of the Ecodesign Directive, a set of EU-wide rules aiming at **improving the environmental performance** of energy related products. The Ecodesign Directive is applicable to broad range of energy-using products (EUPS), which use, generate, transfer or measure energy (electricity, gas, fossil fuel), such as boilers, computers, televisions, transformers, industrial fans, industrial furnaces, etc. as well as **other energy related products (ERPs)** which do not use energy but have an impact on energy and can therefore contribute to saving energy, such as windows, insulation material, shower heads, taps etc. [10]. The rules considering HVAC devices are also thoroughly described and will have a great impact on the Polish market when entering into force.

In 2015, the requirements of Ecodesign will be implemented in Poland. According to the Directive, all the heating appliances producers will be obliged to indicate clearly the energy efficiency of their goods (according to the rules specified in the Energy Labelling Directive) and the devices using the energy in a non-efficient way will be banned and their sales will be stopped. The European law sets the minimal efficiency of the heating devices as well as the maximal level of CO<sub>2</sub> and other harmful emissions produced by these devices.

Due to the Ecodesign Directive, from 2015 the distribution of the following items will become prohibited [11]:

- non-condensing gas-fired boilers with closed combustion chamber – sales banned from 09.2015,
- non-condensing gas-fired boilers with open combustion chamber (rated output  $\geq 10$  kW for single function boilers, rated output  $\geq 20$  kW for combination boilers) – sales banned from 09.2015,
- non-condensing oil-fired boilers – sales banned from 09.2015,
- non-condensing gas-fired boilers with NO<sub>2</sub> emission higher than limits specified by EU – sales banned from 09.2018.

As a result of increasing society's environment consciousness and decreasing popularity of older technologies, the change of buying patterns on the

HVAC market can be observed. The sales of modern technologies are improving yearly and experts predict that the growing tendency will be continued in the close future.

The changes in the sales of different types of boilers can be observed. The older and less efficient ones are gradually losing their market share, while the more technically advanced and environmentally-friendly are installed in more and more buildings (fig. 5).

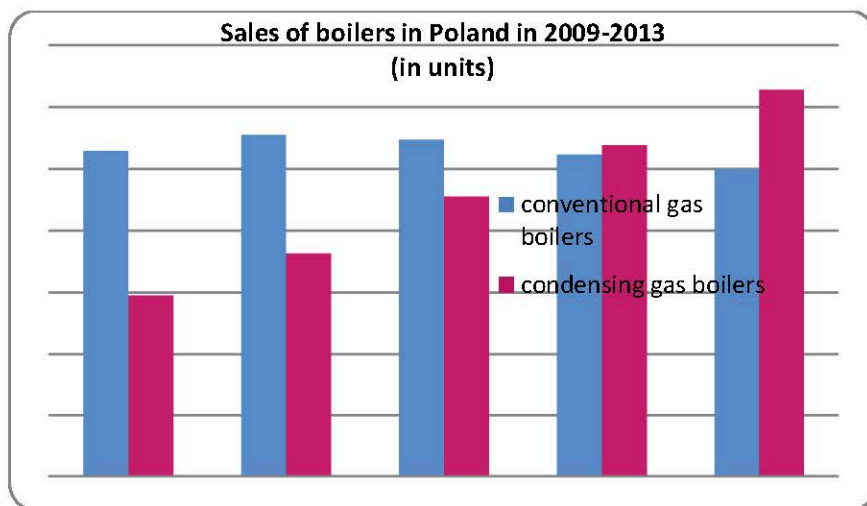


Fig. 5. Sales of boilers by type in Poland in the years 2009-2013

Source: Stowarzyszenie Producentów i Importerów Urządzeń Grzewczych,  
<http://www.spiug.pl/podsum.html>, May 2014.

As depicted on the figure 5, the condensing gas-fired boilers constitute for the only type of boiler which has increased its sales visibly in the last four years. Since 2009 the number of the condensing appliances has grown by 53% and reached the quantity of 125 600 units sold. Conventional gas boilers' popularity seems to fluctuate around the level of 100 000 units, but the decreasing trend has been observed lately. Despite the 11% decline in sales, still the most popular type of boilers sold in Poland are the solid fuel devices, e.g. coal boilers. It has to be noted that these appliance are considered to be harmful to the environment and there are numerous actions taken in order to ban such equipment in the near future.

One of the very important issues in analysis of the HVAC branch is the development of the heat pumps market. The heat pumps have predispositions to become the most popular devices using renewable energy resources in Poland as their parameters are ideal to operate in Polish climate, in opposition to solar



collectors, which operation is endangered during cloudy summers. The wider knowledge concerning the advantages of investing in heat pumps, connected with the European Union subsidy programme for purchase of renewable energy sources technologies, resulted in growth of sales of these devices (fig. 6).

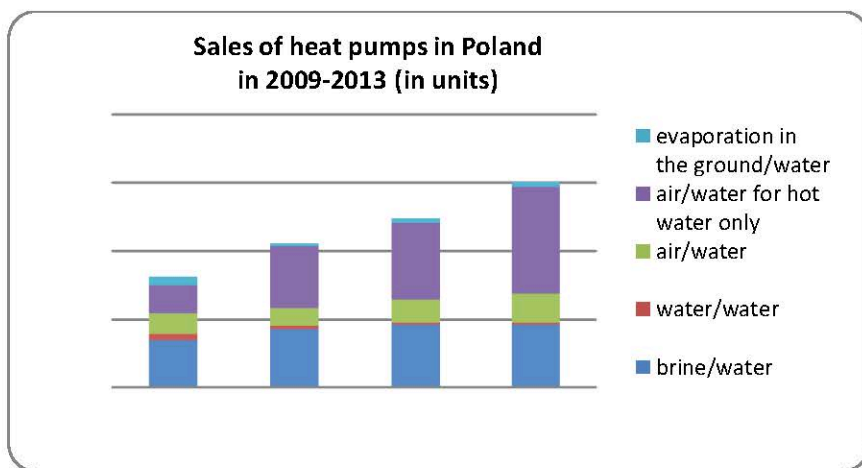


Fig. 6. Sales of heat pumps in Poland by type in years 2010-2013

Source: Polska Organizacja Rozwoju Technologii Pomp Ciepła PORT PC, [http://www.portpc.pl/pdf/iikongres/001\\_pawel\\_lachman\\_3kongres\\_portpc.pdf](http://www.portpc.pl/pdf/iikongres/001_pawel_lachman_3kongres_portpc.pdf), May 2014.

As it can be seen on the figure 6, the number of heat pumps sold in Poland has been growing steadily over the last five years. The total sales of all types of pumps increased by 85%, from 8130 to 15 061 devices purchased. The experts from PORT PC, an association connected with renewable energy promotion in Poland, forecast further growth, probably around 10% in the next year [12].

The data collected by PORT PC also shows the popularity of specific types of heat pumps. It can be observed that the most popular is the air/water pump used only for domestic hot water preparation. Sales of this type of pump contributes to 51% of total heat pump sales in 2013. The number of the air/water pumps is also the most quickly growing over the last years – the quantity of items purchased has increased by 279% since 2009 [12].

Another part of renewable energy resources technologies market are the solar thermal collectors, very popular in Western countries, nowadays gaining popularity also in Poland.

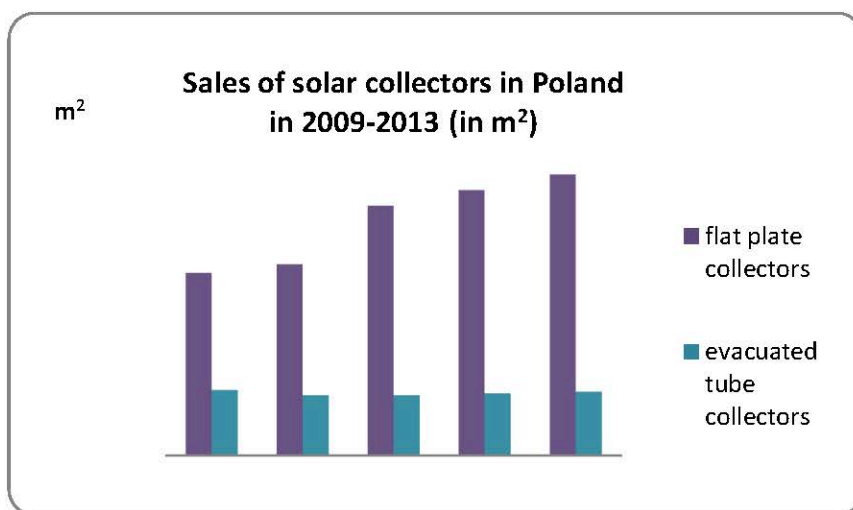


Fig. 7. Sales of solar thermal collectors in Poland in years 2009-2013  
 Source: W. Ludwiczak, *Sprzedaż urządzeń grzewczych w Polsce – trendy rynku*,  
 II Konferencja Rynku Urządzeń Grzewczych – Poznań 08.04.2014.

As it can be seen on the figure 7, the market of solar thermal collectors is expanding. The total area of collectors sold increased in the last five years by almost 40%, from 144 000 m<sup>2</sup> in 2009 to 200 000 m<sup>2</sup> in 2013 [13]. It has to be underlined that, despite the general growth, the evacuated tube collectors are not gaining popularity, even though they are considered to be more efficient and more convenient in maintenance. However, they are also much more expensive and not all of the companies producing solar collectors have this type in the offer.

In opposition to evacuated tube collectors, the demand for flat plate collectors has been increasing steadily. Since 2009 the total area of flat collectors has grown by 55% and reached the level of 163 000 m<sup>2</sup> sold in 2013. In the last year, this type of collectors has contributed to 82% of the total collectors sales.

In general, the situation on the Heating, Ventilation and Air Conditioning market seems to be slightly improving, however its state is still not satisfactory for the companies connected with that part of market. According to W. Ludwiczak, management member of Polish association of heating appliances producers SPIUG, the general increase of profits in the HVAC business has reached 2-3% in the last years and such trends will probably be maintained. Moreover, further growth in the sectors of environmentally friendly technologies is expected, especially in the sales of solar thermal collectors and condensing gas-fired boilers [14].

It has to be added that the HVAC sector is still developing and growing along with the new technologies emerging. Besides improving the performance

and user-friendliness of the popular devices, e.g. condensing boilers or heat pumps, many innovative ideas are brought into life and sold to regular private customers. One of the most promising developments is the introduction of the cogeneration units, which connect the condensing boiler with electricity production. To fulfill this task, such units utilize the Stirling engine: heat engine with external combustion [15]. The source heat, used for the combustion might be the waste heat from the boilers burner. In such a way, the cogeneration unit is able to produce current while heating up the domestic hot water. Another examples of innovative devices might be biomass boilers or technologies using the ice tanks (utilize the energy produced by the changes of the water's state of matter).

While analyzing the renewable energy technologies market, the provisions of the European and Polish law should not be also omitted. A factor in favour of the RES devices is the existence of European Union subsidies for installation of such technologies. However, there are still issues which has not been clearly regulated by the Polish legislative system, e.g. sales of electricity surplus from photovoltaics in private houses.

The subsidies provided by the European Union has been a major incentive for private investors to install devices such as solar thermal collectors or heat pumps. In Poland, the "Niska Emisja" programme [16] has been launched. The so-called "low emission" is the type pollution occurring mainly due to combustion of carbon or waste in the old, inefficient furnaces. This term applies only to the pollution coming from the private houses, not the industrial pollution. To minimize the quantity of "low emissions" to the atmosphere and to promote environmentally-friendly heat sources, the "Niska Emisja" programme assumes subsidies for private investors which decide to install the heat pump or solar collectors in their household.

According to the rules, subsidies will be given to all those private investors who has taken a loan in one of the banks participating in the programme which should be spent on installing a heat source using renewable energy. The subsidy is equal to 2 000 PLN for 1 kilowatt of rated power of the appliance, but not more than 40% of the investment value [17] and is meant to be used to pay off the loan.

In years 2014-2015 another similar subsidy programme is launched – the "Prosument" programme [18]. The subsidies are offered to the private dwellings (detached houses or multi-family buildings) for acquiring and installing the renewable energy sources technologies, used to produce electricity or electricity and heat combined. The devices which might be financed with the Prosument funds include: heat pumps, biomass boilers and solar thermal collectors with the rated heat power of up to 300 kW and photovoltaics, wind turbines and cogeneration units with the rated electric power of up to 40 kW.



On the contrary to the rapid growth of new technologies and EU directives, the Polish law has still not managed to resolve all the problematic issues connected with the use of renewable energy sources. An example of such unresolved issues is the regulation of selling the surplus of electricity produced with the use of photovoltaics or cogeneration units. Currently, the houses with the photovoltaics installation do not have the possibility of returning the extra electricity produced into the general system. Due to that fact, the surplus can be either stored in the special batteries or is wasted, being disposed of with the help of ground connection. The communities connected with the HVAC business are persuading the legislative bodies to implement regulations allowing the sales of electricity surplus from the photovoltaics systems back into the national system for a certain fixed price.

## 4. Conclusions

As a conclusion of the macroenvironmental factors described above, a table containing a PEST analysis draft can be presented (Table 2).

Table 2. Draft of PEST analysis of the HVAC branch macroenvironment

PEST analysis	
Political factors	Economic factors
<ul style="list-style-type: none"> <li>• Lack of clear legal regulations regarding renewable energy sources, e.g. no possibility of selling the surplus of electricity produce by home photovoltaics installation</li> <li>• Introduction of the Europe 2020 programme and the Ecodesign directive by the EU</li> <li>• Introduction of the Prosument subsidies plan</li> <li>• Possibility of implementing regulations banning coal-fired boilers</li> </ul>	<ul style="list-style-type: none"> <li>• General economic crisis</li> <li>• Difficult situation on the construction market</li> <li>• Slight growth in the HVAC market</li> <li>• Decreasing prices of construction works</li> <li>• Decreasing prices of dwellings – possibility of increase of purchase</li> <li>• Saturation of the credit market</li> <li>• Low interest rates</li> <li>• Increase in the average monthly wage</li> <li>• Bigger delays in payments</li> </ul>

Table 2 (continued)

Socio-cultural factors	Technological factors
<ul style="list-style-type: none"> <li>• Decreasing population</li> <li>• Growing emigration (2.2 mln abroad in 2013) [19] causes people not to invest in dwellings in Poland</li> <li>• Approaching decrease in the size of population of age of approx. 30 years (group of higher needs of investments in dwellings) [20]</li> <li>• Decrease of construction specialists after technical schools on the employees market</li> <li>• Growing awareness of the need of environment protection</li> <li>• Increasing importance of quality over price in buyers' decisions</li> </ul>	<ul style="list-style-type: none"> <li>• Development of renewable energy resources technologies</li> <li>• Popularity of zero-emissions buildings</li> <li>• Increased production of renewable energy resources appliances</li> <li>• Increasing easiness of renewable energy resources installation setup and usage</li> <li>• Improvement of the photovoltaic's installations performance</li> <li>• Development of cogeneration technologies, e.g. stirling engines used in boilers</li> </ul>

*Source: author's elaboration.*

In the presented analysis one might find both potential opportunities as well as threats for the HVAC market. It can be seen that the heating technologies are developing rapidly and the interest in them is also increasing. However, the economic crisis and its consequences, along with the lack of clear regulations regarding certain issues may have a negative impact on the companies involved.

Firstly, the progression of the equipments' performance and other features, as well as appearing of the new devices, such as various cogeneration units, contribute to creation of an enormous chance for the sector's growth. Modern heating systems are easier to set up and use and their availability for the individual users is increasing. Therefore, such situation looks surely optimistic for the HVAC companies.

On the other hand, the economic factors appear to be less favourable. The construction market is currently undergoing multiple problems and the branch is thought to be in crisis. The budgets of the construction works are decreasing, financial problems cause delays in payments between the customers and companies as well as between the contractors and subcontractors. Firms are forced to complete projects while obtaining payment which cover only the costs incurred and often lose their liquidity. Some of them are not able to survive. The slight growth of the HVAC market might be a hope for the struggling enterprises.

The political factors can have both positive as well as negative impact on the business described in this paper. The European Union law, which aims at

banning old, inefficient heating devices and promotes the renewable energy resources is certainly increasing the number of the HVAC system modernization works. However, in Poland some regulations are unclear, especially those regarding electricity produced by photovoltaic equipment and cogeneration units, and thus might discourage users from obtaining the newest technologies and, in such a way, diminish the demand for them.

Finally, there are also positive and negative socio-cultural factors. The general decrease of population in Poland, caused both by the low childbirth rate as well as emigration, contribute to the lower level of construction works demand, therefore also the demand for HVAC devices. However, the awareness of the dangers connected with pollution is rising among the society. More and more people tend to take environmental issues into consideration while buying various devices, therefore a shift towards eco-friendly heating units has been noted.

To sum all up, the HVAC market is considered to be on the verge of overcoming the crisis. Many of the companies still struggle due to difficult financial situation but the development of new technologies along with the growing need for environmentally-friendly devices, also sped up by the European and Polish law, creates a huge opportunity for the whole branch.

## Literature

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## **ANALIZA MAKROOTOCZENIA RYNKU GRZEWczego W POLSCE – WPŁYW CZYNNIKÓW LOKALNYCH I GLOBALNYCH**

### **Streszczenie**

Celem powyższego artykułu jest analiza polskiego rynku instalacji grzewczych w kontekście makrootoczenia. Zostaną zaprezentowane główne założenia analizy makrootoczenia, a także oceniony zostanie obecny stan branży grzewczej. Rozważania podsumowane będą analizą PEST.