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ENVIRONMENTAL INVESTMENTS IN THE CEMENT FACTORY "GÓRAŹDŹE"

The perspective of the integration of Poland into the structures of the European Union (EU) poses a series of challenges to firms, including challenges of an ecological nature. Polish firms must in the future conform to EU standards in the field of environmental protection. This is possible thanks to the application of pro-ecological modernization of the technologies used up to now, or the replacement of old technologies by new ecologically friendly technologies. The following are examples of conditions favoring ecological production: the privatization of firms, which enables investment in a firm by foreign investors, as well as creating access to modern technologies. In this article, the author would like to present the influence of privatization and of gaining foreign partners on changes in the strategies of a firm in the field of ecological production. The firm "Góraźdze" Ltd. is a model example of this phenomenon.

The cement and limestone firm "Góraźdze" Ltd. is located in the south-west of Poland, 20 km from Opole in Chorula. The cement factory "Góraźdze" was built in the years 1973–1977. It was built according to the project and with basic installations of the Danish firm F. L. Smidth. At the building stage the cement factory was already equipped with devices to reduce dust emissions, which greatly reduced the degree of pollution emitted to the surrounding area. These were electric furnace, carbon and cement filters. They did not, however, provide sufficient protection, since the factory was placed on the list of firms which were most detrimental to the environment in the Opole region.

The firm CBR Baltic B. V., which is part of the Heidelberger Zement group, has been a strategic investor in "Góraźdze" Ltd. since 22nd July 1993 (it holds 97% of the shares in "Góraźdze"). This firm is one of the leading national firms in the building materials industry. The basic

activities of the firm cover the production of Portland cement and limestone products [The annual report..., 1993, p. 6]. Together with the inflow of foreign capital to "Góraźdże", one may notice a significant change of direction in the development of the firm, aiming at modernizing the factory and simultaneously reducing the detrimental effects to the environment. In 1993 the firm spent 12 billion old zloty (1.2 million new zloty) on the capital repair of the devices reducing dust emissions, the service of installations connected with environmental protection, as well as the re-cultivation of land no longer used in production activities. In 1994 the firm also spent 1.2 million new zloty aimed at improving environmental protection and in 1995 this figure rose to 2.4 million. These efforts to protect the environment led to the factory being crossed off the list of firms being most detrimental to the environment in the region by the Wojewódzki Inspektorat Ochrony Środowiska (the regional environmental protection inspectorate) on 30/4/1995. In August 1997 the firm brought the first installation utilizing used car tires on line. This installation enabled the use of used tires as fuel in a turbine furnace in the process of milling clinker. This process does not generate a greater threat to the environment than the coal fuelled method used previously, since the burning of the tires takes place at high temperature (1450°C) for a long time (6–10 sec.). It is planned that the installation will make use of 12.5 thousand tons of tires annually. This investment is connected with two major advantages. Firstly, waste: used tires are made use of. Secondly, the consumption of coal in the factory has fallen by 12%. The firm also intends to make use of other waste materials: rubber, refinery waste and plastic (PET) as alternative fuels in the factory. This is due to the fact that the furnaces for burning clinker are more technologically advanced than specialist furnaces making use of waste materials. They are characterized by a significantly higher burning temperature (by 200–300°C) and the burning time is also longer (6–8 sec.) [Sygnały, 2000, p. 11]. In Western Europe, in the majority of cement firms a large percentage of energy is obtained by the burning of alternative fuel sources (in Germany 20%, in Holland 52%). It seems that such fuels will have an ever increasing range of applications in the cement industry, due to the visible advantages they bring both to a firm and to the environment. However, the financial mechanisms for the utilization process of waste materials must be created, since a firm must be able to earn from this process and not subsidize it. In Poland, a firm pays the tire supplier but, for example, in Germany for the ecological burning of a ton of used tires a firm is paid 400 DM and in the USA \$160 [Bilicka, 2000, p. 8].

In February 1997, the firm started another investment planned to decrease the load on the environment. This was a project of modernizing

the firm's sewage system, which has a daily capacity of 1250 m³. This was finished in December 1998. Above all, the sewage system serves the inhabitants of Gogolin and only 30% of the system is part of the cement factory [The annual report, 1997, p. 26].

The modernization of the coal section was started in 1997 and finished in May 1998. This was the biggest investment made since the building of the factory. The electric filters used previously and coal dehydrators were replaced by pulsating dust extractors. This enabled a 90% reduction in the level of emissions of coal gases and gases.

The building of a new limestone section was finished in December 1997, after being started in 1995. The use of modern furnaces produced by Maerz and Gopex enable the reduction of dust and gas emissions (of SO₂ and CO by a factor of 8 to 25mg/m³). This was made possible by the use of coke-oven gas (cheaper and more ecological than the previously used coke) to burn the limestone.

Further investments were carried out in the field of environmental protection in 1998: the water system in the factory was optimized. This was connected with the modernization of the water pumping station, where the old water coolers were replaced by new generation systems enabling a decrease in the consumption of water in the cooling process.

In addition to this "Górażdże" re-cultivated approx. 16 ha. of land on the terrain of the limestone quarry "Górażdże". This re-cultivation was based on the use of the terrain for forestry purposes, that is to say that trees were planted at a density of 6000/ha. The effect of these actions, taken in order to protect the environment, was the obtaining of a certification as a firm promoting cleaner production (Świadectwo Przedsiębiorstwa Czystszej Produkcji) from the Techniques and Technology Agency, the Federation of Scientific and Technical Societies and the Polish Center for Research and Certification (Agencja Techniki i Technologii, Federacja Stowarzyszeń Naukowo-Technicznych and Polskie Centrum Badań i Certyfikacji). In 1999 "Górażdże" began as series of activities designed to educate public opinion about safe methods of utilizing wastes, by using them as alternative fuels within the factory. Conferences and symposiums were organized with the participation of members of the state administration, the Ministry of Environmental Protection, as well as environmental organizations. These were designed to inform the participants about the advantages of burning waste in the factory's turbine furnaces, which conformed to the strictest regulations on installations used for the thermal utilization of waste materials. Many other investments were realized in 1999, aimed at the reduction of dust emissions, the electric filters were modernized, which enabled the reduction of dust emissions to the very low level of 0.37 kg/ton. In

addition, the re-cultivation of the terrain of the limestone quarry continued, 7 ha. of land was forested.

"Górażdże" was the first firm in Poland to begin to implement the preparations required to obtain the European ISO 14000 norm, which documents the conforming of a firm to European standards of environmental protection. The project of implementing this system covers the cement factory Strzelce, as well as Górażdże TRADE, which are part of the group. The implementation of the system is based on, among other things, the creation of ecological awareness amongst employees, identification of ecological problems and the implementation of a system of procedures creating an individual approach to environmental protection, adapted to the specific needs of the firm [Peres-Portka, 2000, p. 9]. It seems that the implementation of the ISO 14000 norm will cause a significant improvement in how the firm is perceived, although it is already associated with quality, ecology and clean methods of production. The granting of the status of Założyciel Akademii Marek (A Founder of the Academy of Brands) to the firm on 26th October 2000 by the National Commerce Chamber together with the Minister of Trade and Industry is an example of this. Only firms, whose products guarantee world class, quality goods, belong to this academy.

In addition to this, on 14th December 2000 the firm obtained a "Fair Play Firm" certificate from the National Commerce Chamber. In order to receive such a distinction, it is necessary to satisfy a series of criteria: one must have the opinion of being a completely reliable partner with regard to other firms and clients, as well as the state, be sensitive to the problems of environmental protection and engaged in the life of the local society.

The granting of these distinctions witnesses to the fact that a firm with a production profile like that of "Górażdże", which is characterized by a large load on the surrounding environment, can change from being a polluter into a model, environmentally friendly firm. This is a proof of the fact that even high energy consuming production on a large scale does not necessarily exclude ecology.

It should be noted here, that the process of the „ecologization” of production is a very costly, long-term process. It demands a significant change in the mentality of management, which often gives environmental problems a secondary role. It seems in the case of "Górażdże", that the privatization process of the firm, together with the gaining of such a strategic partner as Heidelberger Zement AG, were factors favouring ecological production. This is because this enabled access to finance, the most modern technologies, as well as causing pro-ecological changes in the investment strategy of the firm. One can put forward the hypothesis,

that without the presence of a foreign investor such dramatic changes in the field of ecological production would either be practically impossible or would last significantly longer.

On this basis it is possible to conclude that the integration process with the UE will force firms to conform to union standards of environmental protection. This will find significant expression in an improvement in ecologically friendly production, which will cause a firm to become more sensitive to the problems of environmental protection and use increasingly modern, pro-ecological technologies. The question of gaining powerful foreign partners is not without meaning in this field. As can be seen from the example of "Góraźdże", this is the quickest route to the implementation of modern technology and changing attitudes towards the questions of environmental protection.

Literature

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