

FINANCIAL STRATEGIES OF ENTERPRISES TOWARD THE EU CLIMATE POLICY

JUSTYNA DYDUCH

Abstract: *The EU Emissions Trading System (EU ETS) is the most important instrument of the EU climate policy and makes enterprises participating in it develop their strategies concerning different areas of their activity. The aim of the paper is to define financial strategies of enterprises concerning financial flows connected with acquiring greenhouse gas emission allowances (on the market or due to investments) and using these allowances (for production or for sale) under the EU ETS and to present financial strategies in this area of selected Polish enterprises participating in the EU ETS from its beginning. The case study analysis relies on financial and environmental reports of these enterprises and interview research carried out among their employees. Depending on the risk attitude and the degree of risk acceptance a passive and active (moderate or aggressive) strategy toward the EU climate policy may be distinguished. The analyzed enterprises initially adopted rather a passive strategy and did not hedge against the risk of unfavourable price changes and did not take advantage of financial opportunities resulting from emission allowances transactions. In the course of time they gained experience in market transactions and started to trade more actively on the market, making derivatives transactions.*

Keywords: *Corporate Finance, Financing Policy, Earnings, Environmental Management, Strategy*

JEL Classification: *G32, M190*

1. INTRODUCTION

The most important instrument of the EU climate policy is the EU Emissions Trading System (EU ETS). Under this system enterprises are obliged to cover their greenhouse gas emissions with emission allowances (EUAs) that they may obtain for free and/or buy on the primary or secondary market. Firms are allowed – to some extent – to comply with this obligation with other carbon credits: certified emission reduction units (CERs) or emission reduction units (ERUs) that are traded on the market as well. The EU ETS makes enterprises participating in it develop their strategies concerning different areas of their activity: production, greenhouse gas emission reduction, investment and finance.

The purpose of the article is to define financial strategies of enterprises concerning financial flows connected with acquiring greenhouse gas emission allowances (on the market or due to investments) and using these allowances (for production or for sale) under the EU ETS and to present financial strategies in this area of selected Polish enterprises.

2. METHODOLOGY

The research is based on the analysis of the literature on corporate financial strategy in order to define this strategy in the area of greenhouse gas emission allowances and the case study analysis of six Polish enterprises from the energy sector participating in the EU ETS from its beginning, i.e. from the year 2005. The case study analysis relies on financial and environmental reports of these enterprises and interview research carried out among their employees.

3. FINDINGS

Corporate strategy, most generally, includes corporate mission and objectives (especially long-term ones), allocation of enterprise resources for a realization of adopted objectives and principles of strategic decision

taking. It stays in close connection with strategic management in that way that corporate strategy involves generating strategic alternatives, choosing the best one, implementing the selected alternative, planning resources and finding supporters [3, s. 120-121]. Within general corporate strategy some functional strategies can be distinguished that relate to functional activities of an enterprise like e.g. production, marketing, finance and human resources management.

Financial strategy can be regarded as a set of criteria and principles of procedure connected with the broadly defined capital [4, s. 366]. According to J. Jaworski, financial strategy can be defined as such a certain model of decision taking in the range of acquiring monetary means and investing them in particular elements of assets that concretizes directions of achieving adopted financial objectives of an enterprise [2, s. 27]. The purposes of financial strategy are maximizing corporate value and achieving competitive advantage in the long term and maintaining financial liquidity in the short term [1, s.159].

The area of the financial strategy concerning acquiring monetary terms is called the strategy of financing. This strategy focuses on determining the amount and structure of capital, taking into account cost of capital and return on equity. Within the strategy of financing three substrategies (conservative, moderate, aggressive) can be distinguished. A conservative strategy consists in maintaining a high level of equity in the capital structure and a positive value of net working capital whereas in the contrary an aggressive strategy relies on maintaining a low level of equity and a negative value of net working capital. In a moderate strategy of financing the level of equity in the capital structure is just moderate and the value of net working capital is close to zero [5, s. 333]. The choice of financial strategy is determined, among others, by the situation and the position of an enterprise on the market, its information

system, expected directions of changes in the business environment, capital availability and risk propensity [4, s. 369; 6, s. 505].

A financial strategy regarding greenhouse gas emission allowances under the EU ETS can be defined as a model of decision taking in the area of:

- attaining sources of financing due to the use of emission allowances,
- investing in acquiring emission allowances (due to transactions on the market or investments in emission abatement).

Gaining monetary means as a result of using emission allowances can be realized directly by executing sale transactions on the EU ETS market or indirectly by using allowances to cover greenhouse gas emissions and in turn contributing to achieving revenues from production sales. Depending on the relation between production costs, product price and emission allowance price the enterprises choose the amount of allowances to allot to cover their emissions and to sell on the the EU ETS market. Real investments (e.g. in improving energy generation efficiency) are a long-term strategy of acquiring allowances whereas buying allowances may be a short-term or a long-term one.

The financial strategy regarding emission allowances should be consistent with the general financial strategy of enterprises. Depending on the risk attitude and the degree of risk acceptance a passive and active (moderate or aggressive) strategy toward the EU climate policy can be distinguished (see table 1).

Passive strategy is characterized by the lack of hedging against the risk of unfavourable changes of emission allowance prices on the market (ignoring risk), the failure to use financial opportunities resulting from emission allowance transactions or the lack of undertaking investments intentionally aiming at greenhouse gas emissions. In the latter case production plans, technical and economic analysis, environmental requirements apart from the climate policy etc. play the role in decision taking on these investments. The example of such investments is

increasing energy generation efficiency due to the periodic refit of power units in which greenhouse gas emission reduction is achieved incidentally. The actions in the area of emission allowances management undertaken by enterprises are planned up to date without a long-term view. This strategy means the short-term adaptation to surplus or shortage in emission allowances.

In active strategy the enterprises take advantage of opportunities of financial benefits provided by the emission allowance market and undertake real investments in order to reduce greenhouse gas emissions. In moderate strategy the companies strive for full protection against risk or for minimizing risk whereas in aggressive strategy they accept higher risk levels and make use of risk in order to increase enterprise value.

Moderate strategy consists among others in executing derivative transactions (forward, futures and options) at fixed price (in order to guarantee the price in the future) or at average market price (in order to hedge against volatility risk according to the market prices tendency). EUA/CER swap transactions are other actions within this kind of financial strategy. They consist in simultaneous combination of the sale of emission allowances and the purchase of CERs (in spot or derivatives transactions). The enterprises gain the spread between emission allowances and CERs prices. In sell-buy-back transaction firms sell emission allowances in spot transaction and set down the repurchase of them at fixed (higher) price in the future in forward transaction. The sell-buy-back transaction can be treated as an equivalent of a (mostly) lower-priced bank credit or loan. The enterprises undertake investments resulting in greenhouse gas emission reduction but at the same time bringing other benefits that decrease the risk of low prices of emission allowances in the future and consequently the risk of unprofitability of these investments. The additional investment benefits include e.g. receiving so called „green certificates” for energy generated from renewable energy sources due to co-combustion biomass and coal that can be sold on the market or used for compliance purposes.

Table 1 Financial strategies of enterprises regarding greenhouse gas emission allowances under the EU ETS

STRATEGY TYPE	PURPOSE	AREAS OF STRATEGY	ACTIONS
<i>Passive</i>	Maximizing profits (positive net cash flows) or minimizing losses (negative net cash flows) connected with adopting to a firm's current situation in terms of emission allowances surplus/shortage	Attaining sources of financing due to the use of emission allowances	Selling surplus emission allowances in spot transactions
		Investing in acquiring emission allowances	Buying lacking emission allowances in spot transactions Undertaking real investments which aims are not connected with greenhouse gas emission reduction, however finally resulting in it.
<i>Active (moderate)</i>	Gaining moderate profits at low (minimum) risk level or minimizing costs due to hedging against unfavourable changes in greenhouse gas emission allowances	Attaining sources of financing due to the use of emission allowances	Selling surplus emission allowances in derivatives transactions Making EUA/CER swap transactions Making sell-buy-back transactions with emission allowances
		Investing in acquiring emission allowances	Buying lacking emission allowances in derivatives transactions Undertaking investments in order to reduce greenhouse gas emissions concurrently taking into account other benefits resulting from these investments
<i>Active (aggressive)</i>	Gaining extraordinary profits at high risk level	Attaining sources of financing due to the use of emission allowances	Making speculative transactions with emission allowances
		Investing in acquiring emission allowances	Undertaking capital-intensive investments aiming only at reducing greenhouse gas emissions (e.g. carbon capture and storage technologies) without a guaranteed price of emission allowances in the future

Source: Own elaboration

Table 2 Financial strategies of selected Polish enterprises under the EU ETS

COMPANY	ACTIVITY CONNECTED WITH GREENHOUSE GAS EMISSIONS	ATTAINING SOURCES OF FINANCING DUE TO THE USE OF EMISSION ALLOWANCES	INVESTING IN ACQUIRING EMISSION ALLOWANCES
<i>GK ENERGA S.A.</i>	Electric and thermal energy generation	Selling surplus emission allowances in spot and derivatives transactions Making EUA/CER swap transactions	Buying emission allowances in spot and derivatives transactions Modernization of power and heat production equipment Investments in biomass co-combustion installations and wind farms Investments in new power production equipment with lower emission characteristics
<i>GK ENEA S.A.</i>	Electric and thermal energy generation	Selling surplus emission allowances in spot transactions and in forward contracts Making EUA/CER swap transactions	Buying emission allowances in forward contracts Modernization of power and heat production equipment Investments in new power production equipment with lower emission characteristics Investments in biomass co-combustion installations and wind farms
<i>GK TAURON Polska Energia S.A.</i>	Electric and thermal energy generation	Selling surplus emission allowances in spot transactions and in futures/forward contracts Making EUA/CER swap transactions Making sell-buy-back transactions with emission allowances within a holding company	Buying emission allowances in futures and forward contracts Modernization of power and heat production equipment Investments in biomass co-combustion installations and wind farms Investments in new power production equipment with lower emission characteristics Investment in pilot project of a mobile CCS installation
<i>GK PGE S.A.</i>	Electric and thermal energy generation	Selling surplus emission allowances in spot transactions and in forward contracts Making EUA/CER swap transactions	Buying emission allowances in spot transactions and forward contracts Modernization of power and heat production equipment Investments in new power production equipment with lower emission characteristics Investments in biomass co-combustion installations and wind farms Investment in nuclear power generation under consideration Abandoned investment in pilot project of a CCS technology.
<i>Elektrociepłownia „Będzin” S.A.</i>	Thermal (mainly) and electric energy generation	Selling surplus emission allowances in spot transactions Making EUA/CER swap transactions	Buying emission allowances in spot transactions Investment in biomass co-combustion installation Modernization of heat and power production equipment
<i>GK Lotos S.A.</i>	Processing of crude oil Thermal (mainly) and electric energy generation for own industrial purposes	Selling surplus emission allowances in spot transactions Making EUA/CER swap transactions	Buying emission allowances in futures contracts Modernization of heat and power production equipment Modernization of crude oil processing equipment Investments in increasing natural gas usage in production processes

Source: Own elaboration

In aggressive strategy transactions executed on the market basically do not depend on emission allowances surplus/shortage. Actually real investments consisting only in reducing greenhouse gas emissions currently involve merely carbon capture and storage (CCS) technologies. These technologies are not commercially applied yet and require significant capital outlays that may not be recouped if the price of emission allowances is not enough high in the future.

Table 2 presents financial strategies of six Polish enterprises from the energy sector participating in the EU ETS. In the first phase of the EU ETS (2005-2007) the analyzed enterprises learned how the market functions, entered into first of all spot transactions and adapted to their current surplus (mainly) or shortage in emission allowances. According to the interview research in the enterprises, their restraint against making more risky transactions on the exchange market resulted from language and legal barriers, the fear against the Supreme Audit Office and other priorities of managerial staff. With

time the enterprises gained experience in executing market transactions and since 2008 they have begun to hedge against the risk of emission allowance price volatility due to forward or futures contracts to a greater extent and to take advantage of financial opportunities connected with the usage of emission allowances. In the latter case the firms entered mainly into EUA/CER swap transactions, what was justified by the spread between emission allowances and CERs. Although the enterprises take into consideration greenhouse gas emission reduction when making decisions on real investments, other objectives play a significant role as well and these investments ensure apart from emission reduction other benefits like e.g. decreased operational costs, revenues from energy certificates sale, an increase in production. Only two enterprises have decided to enter into high-risk project of CCS technology with financial support from public sources (from the European Energy Programme for Recovery in GK PGE S.A. and from the National Centre for Research and Development in GK TAURON Polska Energia SA). Finally GK PGE S.A. has abandoned this

investment due to the lack of financial support of Polish government.

4. CONCLUSION

The corporate financial strategy regarding greenhouse gas emission allowances under the EU ETS relates to forming financial flow connected with emission allowances in line with the general financial strategy of the enterprise and includes two areas:

- attaining sources of financing due to the use of emission allowances,
- investing in acquiring emission allowances (due to transactions on the market or investments in emission abatement).

Three types of this strategy (passive, moderate-active and aggressive-active) can be defined according to different attitudes toward risk. The analyzed Polish enterprises from the energy sector participating in the EU ETS since 2005 initially adopted rather a passive strategy and did not hedge against the risk of unfavourable price changes and not take advantage of financial opportunities resulting from emission allowances transactions. In the course of time they gained experience in market transactions and started to trade more actively on the market, making derivatives transactions. They undertook real investments in order to reduce greenhouse gas emissions concurrently taking into account other benefits resulting from these investments what decreased the risk of low prices of emission allowances in the future.

REFERENCES

- [1] CIUPEK B., 2014, **Obowiązki fiskalne przedsiębiorców względem środowiska i ich wpływ na strategię finansową przedsiębiorstwa. Wybrane problemy**, „Ekonomia i Środowisko” 2014, nr 2 (49), ISSN 0867-8898.
- [2] JAWORSKI J., 2010, **O istocie i strukturze strategii finansowej przedsiębiorstwa**, „Prace Naukowe Wyższej Szkoły Bankowej w Gdańsku”, Zarządzanie współczesnymi przedsiębiorstwami. Uwarunkowania strategiczne, innowacyjne i kulturowe, red. T. Falencikowski, Tom 7, Warszawa 2010, s. 25-35. ISSN 1899-9867.
- [3] LESZCZYŃSKA, A. 2013. **Strategie polskich przedsiębiorstw wobec wyzwań klimatycznych**. Lublin: Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej, 2013, 297 s. ISBN 978-83-7784-314-7.
- [4] ŁUKASIK, G., BIELAWSKA, A., 2013, **Czynniki wyboru strategii finansowej małego przedsiębiorstwa w sytuacjach ryzykownych**, „Zeszyty Naukowe Uniwersytetu Szczecińskiego” 2013, nr 752, Ekonomiczne Problemy Usług nr 102, s. 366-375, ISSN 1640-6818.
- [5] MICHALAK A., 2013, **Strategie finansowania przedsiębiorstw w branżach kapitałochłonnych na przykładzie polskich i światowych przedsiębiorstw górniczych**, s. 331-346, „Zarządzanie i Finanse” 2013, nr 1/4, ISSN 2084-5189.
- [6] OTOLA, I., 2011, **Strategie krótkoterminowego finansowania spółek kapitałowych przemysłu lekkiego**, „Zeszyty Naukowe Uniwersytetu Szczecińskiego” 2011, nr 686, Finanse, Rynki Finansowe, Ubezpieczenia nr 47, s. 505-514, ISSN 1640-6818.

Justyna DYDUCH, Ph.D.

AGH University of Science and Technology, Faculty of Management
ul. Gramatyka 10, 30-067 Kraków, Poland
e-mail: jdyduch@zarz.agh.edu.pl