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CREATING VALUE THROUGH EFFICIENT ENTERPRISE RISK MANAGEMENT

Introduction

The dynamics of the modern world force constant changes in the business activities of all types of organizations¹. Each activity is inextricably linked to risks and uncertainties. In most cases when making decisions, we try, albeit unconsciously, to foresee the consequences of the choices we make.

The PWN Polish language dictionary defines risk in three different ways: the possibility that something can go wrong, also: a project whose outcome is uncertain, exposing oneself to such danger, the likelihood of an injury harming the injured person regardless of fault, if the agreement or legal provision of another person does not oblige them to compensate the damage².

Risk may involve either negative threat or positive opportunity. Often, risk minimization becomes unprofitable and equivalent to not taking any action, while greater risk is associated with the ability to accelerate the implementation of tasks received and limit losses.

¹ G.P. Wójcik, *Quality Management in SI in Tax Offices*, Polish Journal of Environmental Studies 2009, Vol. 18, No. 3B, pp. 408-415.

² *Polish language dictionary*, Polskie Wydawnictwo Naukowe PWN, <http://sjp.pwn.pl/slownik/2518509/ryzyko> (30.04.2013).

With the development of management science, the concept of risk management has emerged, aimed at mitigating the adverse effects of an activity. This has evolved along with changing conditions. The first mention of risk management appears in American literature, where it is treated as part of insurance management (risk insurance management). In Europe, risk management has emerged as a method of formulating risk policy to be covered by insurance and of using means to prevent injury, and then as part of an integrated business management system³. Over the last few years risk management has been gaining importance, with many signs to indicate that this is not just a fashion, but a real requirement for practitioners managing modern organizations.

In recent years there has been growth in the use of information technology, which has led to a significant increase in the speed and volume of information exchange between an organization and its environment. This greatly simplifies the prevention of crisis situations and response when they occur. In order to enable real-time operation, the organization must have planned, verified and approved procedures for risk management. It should be pointed out that the current international perception of risk is the possibility of an event occurring that will have an impact on the realization of objectives.

1. Risk management in the power market

Risk management is sometimes likened to managing uncertain conditions or strategic control and is considered as one of the methods of management in conditions of change. Institutions which implement risk management activities during their daily business often fail to realize their actual needs and thus do not benefit from the opportunities inherent in the modern phenomenon known as governance. However, the mere awareness of the need of risk management does not mean better risk management in practice. Risks arising from improper execution of tasks do not cover all issues, while opportunities may or may not be fruitfully used.

It is my belief that power companies can use venture management methods to create opportunities for success. At the present stage of development of the information society, it seems necessary to know the risk management

³ T.Z. Leszczyński, *Threats to energy security of the information society*, Bulletin of the Energy Regulatory Office 2009, No. 4, pp. 15.

methodology and implementation of management tools to ensure the realization of objectives, asset protection, and the efficient, economic and effective use of resources. Equally important is the implementation of appropriate standards of management in the enterprise.

Risk cannot be equated with uncertainty. Uncertainty is associated with an event or activity that is likely to affect the organization's ability to achieve its goals, but where the possible future scenarios and the likelihood of their occurrence are unknown. However, in the face of risk, it is possible to identify all the possible alternatives, and estimate the probability of them occurring.

There are many criteria for classifying risk, including the two main distinctions: systematic risk and specific risk, as well as pure and speculative.

Systematic risk refers to the total members of an organization, such as citizens of the state, which cannot be controlled individually. The risk is associated, among others, with natural forces, but also the conditions of the global market. Examples of sources of systematic risk may be changes in the international political and economic situation and national regulations affecting the energy sector. This level of risk may be addressed by: national governments and parliaments or supra-national authority structures. Specific risk relates to the individual decisions made by members of an organization and relates to future events, which can be partially predicted, even on the basis of historical data from past events.

The breakdown of risk into pure and speculative is based on distinguishing between alternative scenarios. If the only possible alternative to the current state is the occurrence of losses, then the risk is pure. The possible consequences of pure risk can be reduced by insuring against, e.g. loss of life, health, labor or property. An example of risk which can be insured against would be damages resulting from mining operations. Pure risk usually affects the very decision to act or not to act, and it makes no significant difference whether the decision is made by a supervisor, or employee, is collective or individual. If future events could result in losses or gains, the situation is referred to as speculative risk, which cannot be insured against.

This risk is subject to majority decisions, for example in everyday corporate management. When the possibility of losses is due to inadequate or failed internal processes within an organization, its members, or technical systems used, as well as events in the external environment of the organization, we are dealing with operational risk.

Integrated risk management requires an energy-efficient risk control system, which includes considering risk in management decisions, defining the division of powers and responsibilities in the area of risk management and risk approach at all levels of an organization's operations. Integrated risk management also involves the prediction of risk on various time horizons, and the consideration of various scenarios. Therefore, it is necessary to collect real-time information on the activities of the organization, including contracts with suppliers of fuel and energy, insurance contracts, as well as operational and exploitation data. A huge collection of information must be collected efficiently, safely stored, processed extensively and rapidly transmitted to decision makers in order to reduce uncertainties and enable appropriate decision-making, even at risk⁴.

The experience of countries that have implemented competitive energy markets show that the major challenge of power companies was in meeting the need for effective risk management, as the average daily volatility of the energy market can be as high as 50%, while in traditional capital markets, it is only about 1.5%. The effective management of risks in the Polish electricity market means achieving the following goals: risk identification, risk measurement, identifying the risk management tools to support the overall business strategy and enable a company to increase its value⁵.

The characteristics of the electricity market are: an increase in the number of market participants, an increase in trading volume, a shortening of the duration of the contracts, increased market transparency (e.g. due to energy stock exchanges, commonly available price indices and standardization of the market), and reduction in the unit profits of market participants.

2. Types of risk

The information society cannot exist without the energy that allows the use of facilities for producing, processing, storing and transmitting information, and therefore is prone to all risks affecting energy security. Political risk refers

⁴ *Ibidem.*

⁵ M. Kozłowski, T. Piesiewicz, A. Weron, *Risk management in the electricity market, taking into account balancing segment, the stock exchange and OTC*, Bulletin IASE in the monthly Energy 2003, No. 12.

to the possibility of global or local conflicts, local acts of terror or other disturbances (e.g. gas wars) influencing political instability in areas of energy production, from transportation or in the processing of primary energy to final energy, which can involve difficulties in using certain technologies or energy sources and possibly affect the ability to meet energy needs in a whole country or certain regions.

Economic risks are associated with the deprivation of property rights, changes in existing regulations on the economy, changes in taxes, cancellation of contractual obligations, inflation rates or, for example, the threat of nationalization.

Regulatory risk is associated with the degree of regulatory compliance to political influence, the intensity of lobbying, the effectiveness of regulatory interventions in areas of high competition.

Society, as a recipient of the goods on the fuel and energy market, in particular electricity, but also requiring energy for heating the home and workplace, as well as transport fuel to move between places of work and rest, is exposed to a number of risks. These include: the risk of price fluctuations, the risk of connection and distribution, liquidity risk, contractual risk, legal risk and operational risk.

The risk of changes in energy prices affects both final energy (electricity, heat and transport fuels) as well as certain types of primary energy, in particular coal and natural gas used in households, but also other sectors of the economy, especially the chemical industry. Changes in energy prices determine the level of income (revenues minus costs minus taxes) and the profitability of individual branches of economic activity, thus it directly affects the feasibility of additional contractual obligations in the course of trade and the opportunity to meet the consumption needs of individual families.

Connection and distribution risk is related to the inability to gain access to fuel or energy in certain places due to the inability or unwillingness of local suppliers to meet their obligations, justified, for example, by the high cost of network expansion, a small number of customers in relation to distribution costs or difficulties resulting from irregular terrain.

Liquidity risk in the energy market is present mainly in the early stages of market development for a small number of participants and limited turnover. This risk relates mainly to the Polish Power Exchange and the lack of freedom in trading futures contracts. However, it can also result in the disruption in the flow of energy supplies and fuel to the public sector or governments and is not necessarily due solely or even partly to the loss of financial liquidity, but to other causes.

Contractual risk is related to the possibility of parties not meeting their contractual obligations. Although the individual recipient of fuel and energy is at a disadvantage and can easily be cut off from the energy supply, conflicts arising between the distributor and collective recipient can lead to much more complicated situations, owing to their equal capacity to force their case in the media, cover legal costs and, if need be, change distributor.

Legal risk is particularly prevalent in the absence of clear and unambiguous legislation. Individuals have little impact on energy laws and on regulation of supplier – recipient relations, but organized individual clients and collective recipients can, in a similar way to manufacturers and distributors of fuels and energy, be involved in the process of developing and updating legal solutions in this and other areas.

Operational risk relates mainly to new or rapidly growing markets for fuels and energy, progress in the development of energy-efficient technologies and related changes in the demand for energy, the possibility of environmentally friendly use of freed up financial and material resources as well as human resources. Operational risk is also related to the possibility of incurring losses due to participation in energy market transactions, including changing energy preferences in the information society.

3. Risk management scorecard in the power industry

In my opinion, utility companies should focus on an Enterprise Risk Scorecard (or Risk Management Balanced Scorecard) based on the risks from financial, customer, internal processes, and development and growth perspectives. Using Scorecards in the energy sector management model can lead to improvements in the efficiency of a company, creating value and accelerating its development. After suitable modification of the methodology it can be used to measure risk in the company. In the classical approach, the Scorecard measures current financial success. Key indicators in this area focus on financial performance such as: return on investment, growth and revenue structure with examples of strategic goals such as: increasing the return on capital, diversification of the revenue or cost reduction.

Table 1

Risk management scorecard in the power industry

Financial risk		Client risk	
Risk	Rate	Risk	Rate
Financial markets	<ul style="list-style-type: none"> - WACC* - CAPM** 	Structures	<ul style="list-style-type: none"> - the percentage of customers satisfied - the number of customer complaints - the quality of claims - changes in provisions for overdue receivables
Solvency	<ul style="list-style-type: none"> - Debt to equity ratio - Cost of debt - Value at Risk 	Competition	<ul style="list-style-type: none"> - number of new competitors - the percentage of shares lost
Tax	<ul style="list-style-type: none"> - current and expected tax levels 	Market	<ul style="list-style-type: none"> - current and expected revenue
Risk in internal processes		Risk in development and growth	
Risk	Rate	Risk	Rate
Technology	<ul style="list-style-type: none"> - the number of applications that require support - the number of system failures 	Development	<ul style="list-style-type: none"> - the effectiveness of trained personnel - percentage of staff promoted after training - percentage of recommendations implemented
Human Resources	<ul style="list-style-type: none"> - staff turnover - employee satisfaction index - the number or proportion of management staff who leave the organization 		
Processes	<ul style="list-style-type: none"> - the number of errors identified during the audit - the number of processes, inventions and patents - the degree of automation of processes 	Growth	<ul style="list-style-type: none"> - the expected growth rate compared to the current rate - synergies in mergers and acquisitions - the ratio of expected to actual benefits from improvements in processes
Organizational	<ul style="list-style-type: none"> - number of queries on the part of the regulator - the price of insurance 		

* WACC is the weighted average cost of equity and cost of debt. The meter is dependent on the structure and cost of capital. The weights are the shares of equity and debt capital used to finance activities.

** CAPM is the capital asset pricing model, also known as the capital market equilibrium model. It belongs to the methods for estimating the cost of equity, is mainly used to calculate the cost of capital of listed companies.

Source: own work based on: J. Calandro jr., S. Lane, *Insights from the Balanced Scorecard. An Introduction to the Enterprise Risk Scorecard*, Measuring Business Excellence 2006, No. 3, p. 35.

The Scorecard presented above divides the financial perspective into financial market, solvency and tax risks. The first area can be assessed by such measures as the weighted average cost of capital (Weighted Average Cost of Capital – WACC) and the capital asset pricing model (Capital Asset Pricing Model – CAPM). The other two areas are related to commitments outside the company in relation to credit institutions and institutions governing tax.

In the customer perspective, the Scorecard includes such indicators as: satisfaction, maintenance, acquisition and profitability of customers and the quantity and value share in the target market. Detailed analysis should include specific indicators of value offered to the target customers and market segments. The customer can formulate market strategy that will deliver future financial results. The Scorecard also investigates the risk of losing customers. Analyses can be expressed in terms of the degree of customer satisfaction, the number of complaints and the quality of the portfolio. This information is reflected in the structure of claims and changes in the level of reserves established for them. The remaining area concerns the competitiveness and risk of product quality and services, and can be assessed in view of the risk of loss of market share by direct competition with a given company. The final element is the assessment of marketing campaigns aimed at attracting new customers and developing relationships with existing ones.

Incorporating an integrated and systematic approach to risk in the above-described series of interdependencies, can make the process efficient, and thereby useful in the process of making key management decisions. The risk management process is closely linked with the strategy of the company, the main objectives and processes and the successes or failures of the company's top management. In my opinion, the risk management model should relate to the company's business model.

Conclusions

The activity of any enterprise is associated with risk-taking. The volatility of electricity prices is significantly greater than that observed in the markets of other goods, and is one of the factors causing entities on the energy market to be particularly exposed to risk. However, we should bear in mind that although

risk is normally associated with the possibility of loss, for people who are capable of managing it, risk may be the source of above-average profits. The presented comments regarding the security of energy systems indicate that they are an important part of public safety. Owing to the fact that they provide fuel and heat to society, and above all electricity, power systems are primary targets of attack. An important factor is the size of the organization when deciding on the type and how to deploy security solutions used. But by far the most common threat to the smooth functioning of society are disruptions in the supply of energy for heating, especially in winter, and electricity, especially at night. Ensuring a reliable and continuous supply of raw fuels is of paramount importance, since the continuity of the electricity supply is somehow inherent to the proper functioning of society.

In my opinion, successful enterprises are those in which: the Board/Supervisory Board has an understanding of and commitment to risk management, risk management is dealt with at the management level, there is provision for the effective communication of risk, risk management culture is characterized by commitment and responsibility, stakeholders participate in the management of risk; there is information regarding risks and the decision-making process, risk management is integrated with the management of human capital; analyses, quantification and understanding of risk takes place, risk management is based around creating value.

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KREOWANIE WARTOŚCI PRZEDSIĘBIORSTWA POPRZEZ EFEKTYWNE ZARZĄDZANIE RYZYKIEM

Streszczenie

W artykule omówiono wybrane aspekty zarządzania ryzykiem w sektorze elektroenergetycznym. Podkreślono, że zarządzanie ryzykiem jest krytycznym elementem tworzenia wartości w przedsiębiorstwie. Stwierdzono, iż wartość przedsiębiorstwa jest maksymalizowana dzięki optymalizacji relacji między trzema zmiennymi: stopą zwrotu z inwestycji, redukcją kosztów i czynnikiem ryzyka. Optymalizacja ma miejsce wskutek podejmowania świadomych decyzji uwzględniających wymierną relację między efektywnością finansową a ryzykiem. Zarządzanie ryzykiem jest elementem składowym budowania odporności przedsiębiorstwa wraz z funkcją zapewnienia ciągłości działania. Funkcje te bezpośrednio oddziałują na wartość przedsiębiorstwa, starając się ograniczać niepewność.

Tłumaczenie Grażyna Paulina Wójcik