



PLAYERS IN EMISSION TRADING SYSTEM IN POLAND – MARKETING RESEARCH

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Abstract <p>Whole work was assigned and supervised by Energiakolmio, which commissioned marketing research in Poland. The work was done remotely from Finland, via phone calls and electronic sources.</p> <p>Main goal of this work was to gather necessary information about Poland and Polish Emission Trading System in order to support the company in decision making process. On results basis, Energiakolmio was about to make strategic decision concerning entering new market.</p> <p>The thesis describes all phases of the research process: indication of the research problem, research design, collecting data, analyzing and interpreting information and presentation of the results. Collected secondary and primary data are presented. As a method, qualitative research was chosen with conducting a survey among polish companies.</p> <p>The results indicated Poland as a huge potential market for Energiakolmio. The interest among polish companies in its services is significant.</p>		
Keywords Emission Trading System, CO ₂ allowances, qualitative research,		
Miscellaneous		

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Answers for such questions can be found among secondary data. Secondary data is “data that have been already collected for purposes other than the problem at hand” (Malhotra & Briks 2007, 94). The research focused on external secondary data, which have been already gathered by other parties and agencies: general information about Poland in order to give brief overview of target market, about energy branch to outline the opportunities and also about cultural differences to understand better various attitudes to business. Cultural differences were mainly pointed from experience, observation and small support of professional literature. Secondary data’s aim is to provide company necessary knowledge to make appropriate decisions. Moreover, it has a big impact on following primary data. Secondary data contributed to develop a sampling plan and formulate an appropriate research design. Without gathering information about the whole system of the ETS in Poland, all authorities who are involved in it, it would not be possible to choose the sample group and there would be difficulties with finding information about indicated companies.

2.1 General information about Poland

Republic of Poland is situated in the center of Europe with the capital city in Warsaw. The total area of it is 312, 685 square kilometers, what makes it 67th largest country in the world. Poland is bordered by Germany to the west; the Czech Republic and Slovakia to the south; Ukraine, Belarus and Lithuania to the east; and the Baltic Sea and Kaliningrad Oblast, a Russian exclave, to the north. Population of Poland is over 38.7 million citizens. Polish is official language. 90% of population is declared Catholics. The Republic of Poland is a member of European Union, NATO, ONZ, OECD, WTO and many others. (StayPoland 2008.)

2.1.1 Government

The country’s political system is democracy with the President as a Head of the State. Executive power is in hand of Council of Ministers, led by a prime minister. The function of president is represented currently by Lech Kaczyński and the function of Prime Minister – Donald Tusk. Parliament consisting of a 460-member Lower House and 100-member Senate is elected by citizens by voting every four years. Major judicial institutions contain Supreme Court of Poland, Constitutional Tribunal of Poland and the State Tribunal of Poland. (Op. cit.).

It is recommended to Energiakomio to pay a big attention to administrative divisions, because a lot of information can be found at the level of voivodeships (provinces), as well as numerous decisions concerning the Emission Trading System are taken at this level. Poland is divided into 16 voivodeships which are listed below and presented in the picture. “Administrative authority at voivodeship level is shared between a government-appointed voivode (governor), an elected regional assembly and an executive elected by that assembly” (Wikipedia 2008).

TABLE 1. Voivodeships in Poland

Voivodeship		Capital city or cities
<i>in English</i>	<i>in Polish</i>	
Greater Poland	<i>Wielkopolskie</i>	Poznań
Kuyavian-Pomeranian	<i>Kujawsko-Pomorskie</i>	Bydgoszcz / Toruń
Lesser Poland	<i>Małopolskie</i>	Kraków
Łódź	<i>Łódzkie</i>	Łódź
Lower Silesian	<i>Dolnośląskie</i>	Wrocław
Lublin	<i>Lubelskie</i>	Lublin
Lubusz	<i>Lubuskie</i>	Gorzów Wielkopolski / Zielona Góra
Masovian	<i>Mazowieckie</i>	Warsaw
Opole	<i>Opolskie</i>	Opole
Podlaskie	<i>Podlaskie</i>	Białystok
Pomeranian	<i>Pomorskie</i>	Gdańsk
Silesian	<i>Śląskie</i>	Katowice
Subcarpathian	<i>Podkarpackie</i>	Rzeszów
Świętokrzyskie	<i>Świętokrzyskie</i>	Kielce
Warmian-Masurian	<i>Warmińsko-Mazurskie</i>	Olsztyn
West Pomeranian	<i>Zachodniopomorskie</i>	Szczecin



FIGURE 2. The Voivodeships in Poland. (Polish Embassy in Berlin, 2008)

2.1.2 Economy

Poland is the seventh Economy in the European Union and twentieth in the world. It is considered as one of the fastest growing economies in central Europe. Gross Domestic Product (GPD) from previous years can be seen in the table below. (Ministerstwo Gospodarki – Raport o stanie gospodarki, 2008)

TABLE 2. Recent GDP growth

Year	Q1	Q2	Q3	Q4
2008	6.1%	5.6%		
2007	7.2%	6.4%	6.4%	6.1%
2006	5.4%	6.3%	6.6%	6.6%
2005	2.1%	2.8%	3.7%	4.3%
2004	7.0%	6.1%	4.8%	4.9%
2003	2.2%	3.8%	4.7%	4.7%

According to Human Development Index (HDI) which includes life expectancy, knowledge and education and standard of living, Poland is on 37th place of high

income countries with 0.870 score in 2007. A.T. Kerney put Poland on 5th place according to Foreign Direct Investment Confidence Index in 2005. (A.T. Kearney, 2008.)

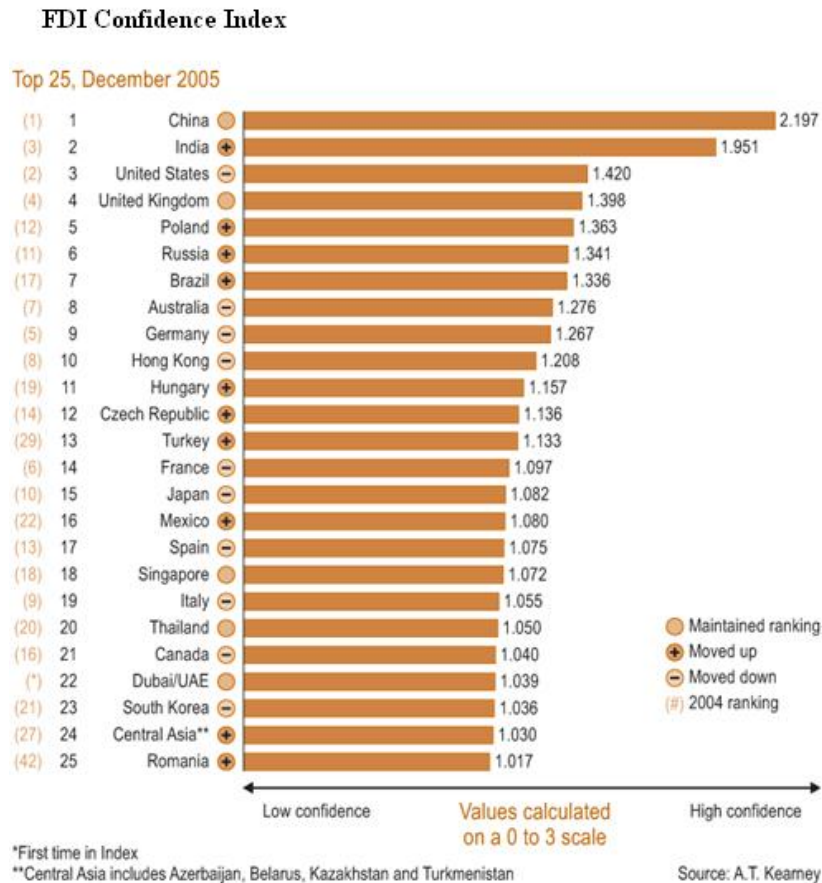


FIGURE 3. Foreign Direct Investment Confidence Index in 2005 (A.T. Kearney, 2008).

Poland represents mixed economy. It has transferred from directed economy to market economy after 1989, when communisms collapsed. Since then, the privatization sector has been increasing and has become main power force of polish economy. Nowadays 25% of GPD is made by public sector, which consists of such companies as PKP, KGHM, partly PKN Orlen PGNiG. Because of central location, stable of economy and joining EU, Poland became attractive market for foreign investors. In 2006 it was 10 mld dollars.

International Trade

During last few years, significant changes occurred in Polish international trade, which enabled dynamic growth of export. It was caused by inflow of foreign investments and internal conversion of Polish companies. Nowadays, more production is set up not only to meet domestic market but also other European markets. The number of production for international big corporations has increased. Obviously, joining EU in 2004 has played an enormous role in growth of export giving possibility to producer access to free flow of goods. Those factors have been causing that Polish export has almost doubled since 2000. The following table shows exact figures.

TABLE 3. Share of exports in GDP in 2000-2008, (Ministerstwo Gospodarki- Departament Analiz i Prognoz 2008.)

	2000	2001	2002	2003	2004	2005	2006	2007	2008(I period)
GPD growth %	4.3	1.2	1.4	3.9	5.3	3.6	6.2	6.6	5.9
GPD (mld PLN)	744.4	779.6	808.6	843.1	924.5	983.3	1060.0	1167.8	602.5
Export (mld PLN)	137.9	148.7	167.3	208.9	272.1	288.7	343.8	386.6	204.7
Export/GPD (%)	18.5	19.1	20.7	24.8	29.4	29.4	32.4	33.1	34.0

Main partners in international trade are European countries, Russia and China. Poland exports mainly to Germany (30%), Italy (6,6%), France (6,1%), Czech (5,5%), Russia (4,6%). Commodities are imported from Germany (24%), Russia (8,7%), China (7,1%), Italy (6,9%) and France (5,1%). The percentage amounts are from 2007 according to report for Ministry of Economy. (Ministerstwo Gospodarki – Departament Analiz i Prognoz, 2008.)

Currency

The Polish currency is zloty (PLN) which is equivalent of 100 groszy. The current exchange rate is published by the National Bank of Poland and can be found on its web page <http://www.nbp.pl/>.

According to Polish Ministry of Finance, Poland will be ready to join Eurozone by 2012. The main factor which is troublesome for the country is a budget deficit which is higher than 3% and now is 3.7 %. Before Poland will join Eurozone the referendum must be conducted among Polish citizens. The new marketing research shows that Poles are against Euro. They are afraid of for instance dramatic price increase and impoverishment. (Integracja Polski ze strefą Euro: uwarunkowania członkostwa i strategia zarządzania procesem 2005, 36-38.)

2.1.3 Energy market

This chapter is devoted to overview the Polish power market. This knowledge is essential to understand the ETS concept. It indicates potential customers and interesting areas of operation for Energiakolmio.

In Poland the beginning of free energy market is assumed to be in April 1997 when the Energy Act came in force. Previously, under communistic regime, Polish power industry was centralized and state - owned. Such situation was caused by the political situation of the country and conviction that all strategically important areas should be controlled by government. In that case, energy was treated not as a product but as a Supreme Good. The situation changed when Polish economy had started to be built on liberalism background. Main presumptions of the Energy Act were: restructuration and demobilization of power industry, liberalization and privatization. Since joining European Union Polish energy regulations has been adjusting to EU law. In 29 June 2007 Polish government enacted the bill, which provides the customers with the right to purchase electricity from a freely selected supplier, what can be acknowledged as an effective competition in the power industry sector, where energy plays role of a product. Therefore, as any other product, it must be produced, bought by distributors, sold to individual clients, companies or institutions and delivered to final customer. The picture below presents structure and players of Polish power market. (Cire 2008.)

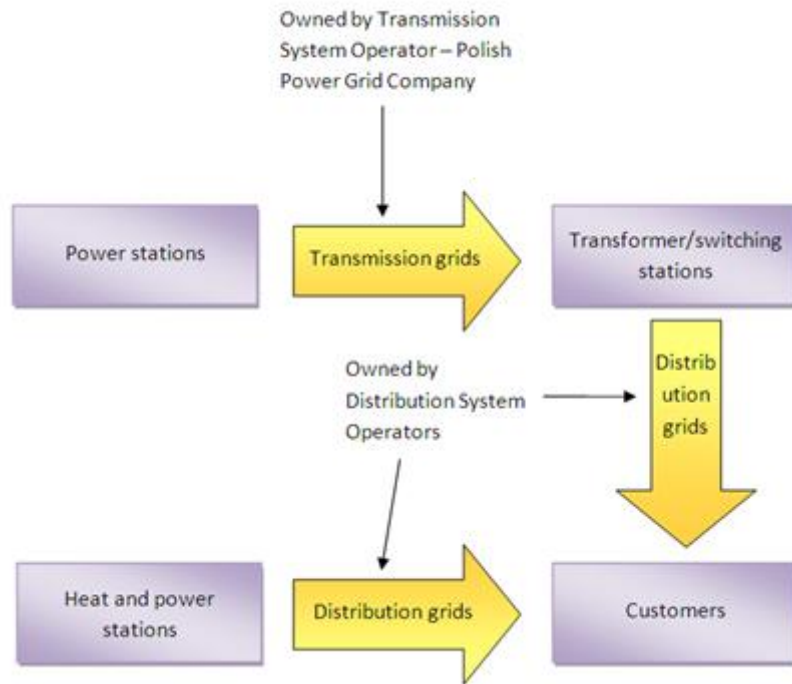


FIGURE 4. Polish power market structure.

As we can see from the graph, four main participants of Polish energy market such as: the producers of energy, transmission and distribution operators, trading companies and customers, can be specified. They are going to be briefly described below to provide the reader with a necessary knowledge to understand the following part of the thesis concerning the Emission Trading System.

Producers

The size of Polish energy market is 110 TWh of electricity energy worth 30 mld zloty. Producers of energy consist of power stations, heat and power stations and renewable energy sources. In Poland there exist 19 power stations, which produce energy from burning lignite and hard coal. Approximately 75 % of whole electricity production comes from power stations. The biggest are: Bełchatów, Opole and Turów (members of BOT - group) and Połaniec, Kozienice, Rybnik and Dolna Odra. Moreover, Poland possess more than 50 heat and power stations, mainly located near big agglomerations and ca 160 located by bigger industry plants. Renewable energy takes unfortunately a small part in whole process but it is being continuously increased.

Since March 2008, 70% energy has been available for the customers on the free market. The rest 30% is produced by certain units in following shares:

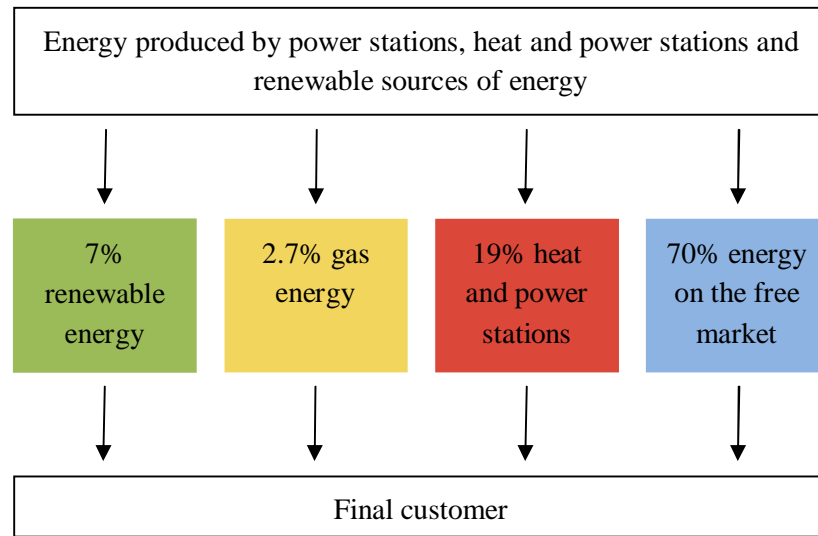


FIGURE 5. Shares of produced energy in Poland, modified from website Cire (2008).

Transmission and Distribution

Transmission and distribution system operators are responsible for transportation energy from producers to final customers. It takes place via two modes of electricity grids: transmission and distribution grids. Transmission grids are owned by Polish Power Grid Company (Polskie Sieci Elektroenergetyczne) and they are used to deliver electricity from power stations to transformer - switching stations. From them energy is delivered to customers with distribution grids, which are owned by 14 distribution operators. Some of them created mergers in order to be competitive with European companies. (Op. cit.) The following picture shows areas services by specific distributors.

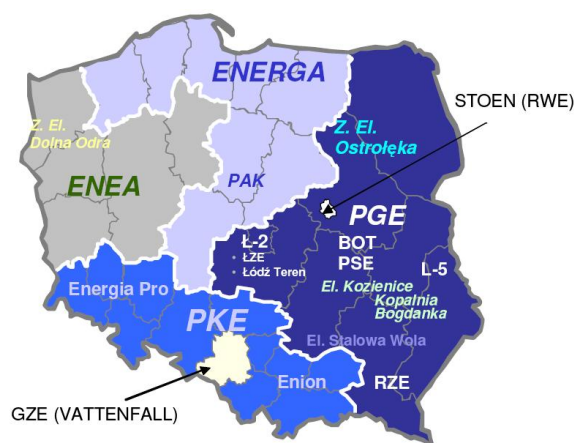


FIGURE 6. Consolidation of distribution system operators. (Program dla elektroenergetyki 2006).

Trading companies

Trading companies are buying energy from producers and selling it to final customers. The prices and terms are agreed between seller and buyer or they are determined by terms of purchase (purchase on the stock or on line energy trade services). Till the middle of 2007 distribution and trading were handled by the same companies. Now after separation of these two sectors all distributor system operators set up new divisions responsible for distribution of electricity, namely trading companies with the same capital group. Additionally to that, there exist more, smaller trading companies. The companies, which possess license to trade with the electricity, are published by The Polish Energy Regulatory Office and they can be found on its web page. (Cire 2008.)

The following table represents the list of all main distributor groups with the distribution companies on the left side and trading parts on the right side.

TABLE 4. Distribution and trading companies

ENERGA

<http://www.energa.pl/index.xml>

- Energa Operator
- Energa Obrót

Enea

<http://www.firma.enea.pl/>

- Enea Operator
- Enea S.A.

PKE =TAURON

<http://www.tauron.com.pl/>

- Enion Grupa Tauron
- EnergaPro
- Enion Energia
- EnergaPro Gigawat

PGE

<http://www.pgesa.pl>

- Lubzel Dystrybucja
- PGE Dystrybucja Białystok
- PGE Dystrybucja Rzeszów
- PGE ZEOR Dystrybucja
- ZEW-T Dystrybucja
- ŁZE Dystrybucja
- Zakład Energetyczny Łódź - Teren
- Lubelskie Zakłady Energetyczne
- Zakład Energetyczny Białystok
- Rzeszowski Zakład Energetyczny
- Zakład Energetyczny Okręgu Radomsko-Kieleckiego
- Zakład Energetyczny Warszawa – Teren
- Łódzki Zakład Energetyczny
- Zakład Energetyczny Łódź - Teren

VATTENFALL POLAND

<http://www.vattenfall.pl/>

- Vattenfall Distribution Poland
- Vattenfall Sales Poland

STOEN (RWE)

<http://www.rwe.pl/index.php?id=2&L=1>

- RWE Stoen Operator
- RWE Stoen

Final Customers

Customers might be divided into groups: households and other but households, so industrial plants, offices, hotels, institutions etc. All final customers according to The Third Party Access (TPA) principle possess right to choose their supplier. However, customers' interest in the possibility of using the TPA principle has so far been limited. Lack of uniform rules and procedures of switching the electricity supplier

together with no standardised documents available constitute yet another barrier. The Energy Regulatory Office (ERO) published “Roadmap of prices liberalization for all electricity consumers” in 2008, which proposes actions, which should be undertaken in order to achieve the aim of further liberalisation of electricity market and improvement of electricity customers’ safety. The document states that informative campaign will be organised in order to deliver customers all needed information about switching electricity supplier. Campaign will include launching a special web site with, call centers in the ERO headquarters and its local branches where ERO employees provide advice and assistance, workshops and conferences. (Op. cit.)

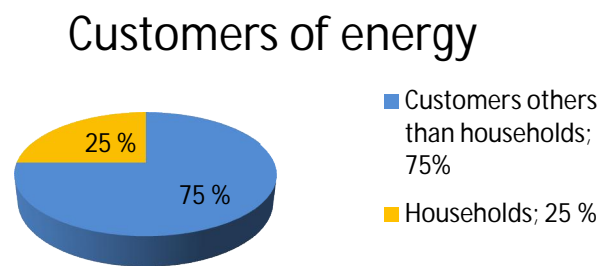


FIGURE 7. Customers of energy (Op. cit.).

Chapter 2.1 focused on economical and political situation of Poland. Some principal statistics has been presented to overview Poland as a new market for the company. The following chapter is devoted to customer behavior in frame of cultural differences.

2.2 Culture differences

Going global, means meeting new various cultures. It is important to know, what to expect, when you do the business in the chosen country: time concepts and punctuality, making appointments, negotiation modes. It is useful to know greetings, forms of address, gestures and gift giving. The following chapter provides such knowledge with usage of Geer Hofstede’s Cultural Dimensions, literature and my personal experience.

Understanding Poles is impossible without knowing basic facts from Polish history, which was full of heroism, catastrophe, and renewal. Because of limitation of the

thesis, there is no place to evoke whole Polish history, but it is crucial to remember, that Poland was not independent for some periods. The country was partitioned three times in the second part of XVIII century. In 1795, as a result of third partition, Poland vanished from the maps. In 1918, after World War I, Poland reemerged as an independent state, but only for a short 21- year period, until World War II began. After the War, Poland became a communistic state under soviet domination, till 1989. Therefore, today Polish democracy is really young, namely, 19 years old. During this time, the country has made huge step towards Europe and whole world, but still there remain things, which should be changed. When you will do business with Poles, you must be prepared of mixture of old, communistic times and new wave of capitalism. (Mole 2003, 172-173.)

Uncertainty Avoidance Index (UAI)

Combination mentioned above explains why Polish citizens possess high Uncertainty Avoidance Index, which shows the degree, to which people feel threatened by the unclear situations and risk. Poles were struggle for many years with communist regime, lies and ambiguity, that is why, nowadays they prefer clear rules and regulations. Changes, which occurred in the country, has brought freedom and better live but in the same time it has become more stressful, unexpected. There is a minority, which has problems with shortage of government protection and with existing in ruthless capitalism.

Power Distance Index (PDI)

As far as power distance is concerned, Hofstede means the extent, to which less powerful members in society view and accept that power is distributed unequally. Poland is significantly more power distance country than Finland. In polish companies, there exists hierarchy in organizations and the distance between a managing director and subordinates is quite high. People are addressed in formal way, using Mr. – “Pan” and Mrs. – “Pani”. It is not unusual, to address someone with the job title, especially person on high position: “Panie Dyrektorze” for managing director. Therefore, first meeting are always formal. Dress code must be acknowledged as well as protocol. Punctuality is always required. Be sure to be on time on all meetings! Otherwise it will be assumed as a lack of respect. Power distance has been decreasing parallel with inflow of foreign companies with different

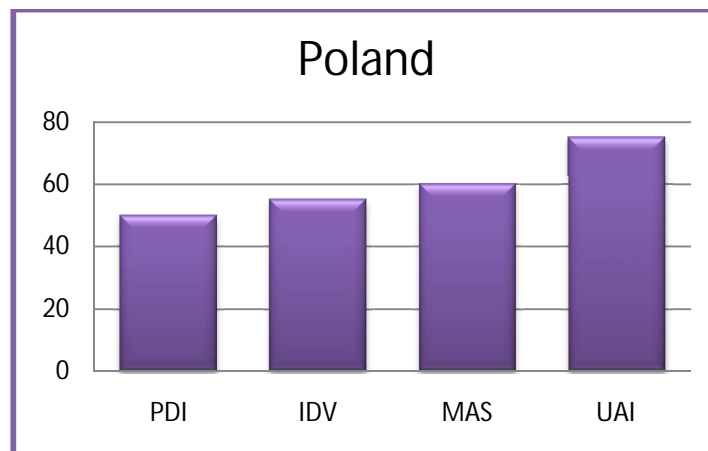
culture. Among numerous firms the atmosphere of mutual respect and benefits is being created. (Morrison, Conaway & Borden 1994, 299 – 300.)

Individualism

According to Geert Hofstede, individualism index shows, whether people are, from birth onwards, integrated into strong, cohesive in-groups, often extended families or rather ties between individuals are loose. The level of individualism in Finland and Poland is similar. However, in business life, some differences might be noticed. . In Poland private and business lives are often mixed. Polish like to make relationship with their business partners. As far as employer – employee relationship is concerned, in Finland it takes form of a mutual advantage. However, relationships and oral communication pay tremendously important role in doing business with Poles. Business partners must be connected with trust.

Masculinity (MAS)

Masculine society is a society, in which dominant values are: success, money and material things. In feminine society, dominant values are: caring for others, relationship and the quality of life. Although in private life, Poles are feminine, in business more masculine features emerge. Capitalism gave such big opportunities of making career, earning huge money and possessing power, that Polish are really eager to take advantage of those possibilities. There exist pressure of achieving more and more.



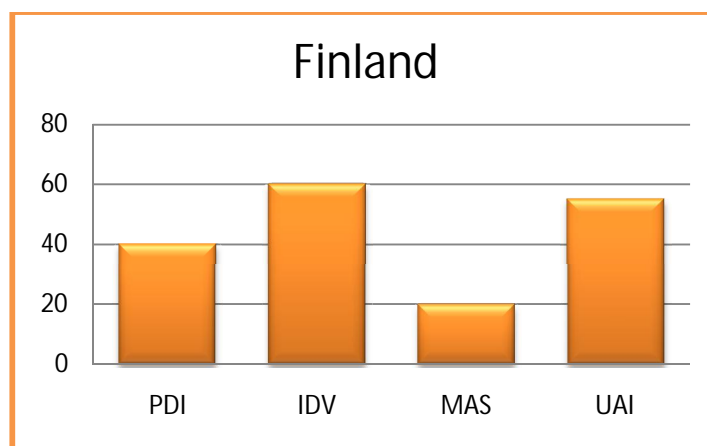


FIGURE 8. Geert Hofstede Cultural Dimensions for Poland and Finland, modified from the Geert Hofstede itim website (2009).

Etiquette & Business Practices

Common way of greetings is shaking hands. Men should wait for Polish woman to extend her hand first. It might occur that a man kisses a woman's hand as a greeting. It is old fashioned habit, but still existing. Close friends and relatives might greet each other with hugging and kissing of cheeks. Polish work day starts early, so appointment at 8 o'clock is quite common practice. It is important to remember, that Poland is one hour ahead of Greenwich Mean Time. As it is mentioned above, punctuality is required. A gift is very appropriate during first business meetings. It is recommended to bring something originally from your own country, or item connected with visitor's company. When someone is invited to polish home, a small gift should be bestowed to the host too. The most common are flowers in odd number or wine. Nevertheless, chrysanthemums (used at funerals) and red roses (used for courting) should be avoided.

As far as dress code during official meetings is concerned, suits and ties for men are appropriate and for woman, dresses or suits too. Conversations should be kept away from politics, Anti-Semitism, and all sensitive historical facts. Making business relationships takes often place during long talking and drinking in the evenings, even if the following day is a work day. It may seem unimportant to have small talks and fun together, but apparently, it is how Poles are getting know each other and checking if, someone can be trusted. (Morrison, Conaway & Borden 1994, 299 – 300.)

3 THE EMISSION TRADING SYSTEM

The following chapter presents brief history and main aims of the Emission Trading System (ETS). The Kyoto Protocol resolutions are described including three market-based mechanisms, which might be used by members of emission allowance trading. Then, System is shown from Polish perspective. Some historical data is presented in order to position Poland in international movement against climate change. Chapter 3.2 contains directives and acts which constitute authorities responsible for the ETS.

3.1 General information about ETS

Since the science has begun to emerge proofs in mid of eighties that the climate changes occur because of industry development, the world organizations started to take the action. As a result, The United Nations Framework Convention on Climate Change treaty was signed in 1992 year by 154 nations. In the current moment 192 countries are involved in it. In Poland, the treaty entered into force in 1994. The main aim of the treaty is stabilizing greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. In the beginning treaty did not contain any legally binding resolutions. The situations changed in the moment of signing Kyoto Protocol in 1997 by 84 countries. Poland signed the Protocol in 1998 and ratifies it in 2002. The Kyoto Protocol establishes legally binding commitments for the reduction of four greenhouse gases: carbon dioxide, methane, nitrous oxide, sulphur hexafluoride. The thesis focuses on carbon dioxide (CO₂) only, on request of Energiakolmio. Under the Treaty, countries must meet their targets primarily through national measures. However, the Kyoto Protocol offers them an additional means of meeting their targets by way of three market-based mechanisms: emission trading, clean development mechanism (CDM) and joint implementation (JI). (Ramowa Konwencja Narodów Zjednoczonych w sprawie klimatu oraz Protokół z Kioto do tej Konwencji 2006, 2-8.)

Emission Trading

Parties with commitments under the Kyoto Protocol have accepted targets for limiting or reducing emissions. A central authority sets a limit or a cap on the amount of CO₂ which can be emitted during periods 2005-2007 (rehearsal period) and 2008 -2012 (Kyoto period). Companies are issued emission permits and are required to hold an

equivalent number of allowances (assigned amount units – AAU, or credits), which indicate the amount of CO₂ which can be emitted. One tone of CO₂ is referred to European Union Allowance (EUA). Organizations which exceed the emission allowances must buy additional credits. Parties which possess units to spare are allowed to sell this excess capacity. The transfer of allowances is referred to as a trade. (Directive 2003/87/EC 2003.)

Clean Development Mechanism

Clean Development Mechanism (CDM) allows a country with an emission-reduction or emission-limitation commitment to implement an emission-reduction project in developing countries as an alternative to more expensive projects in their home countries. Such projects can earn saleable certified emission reduction (CER) credits, each equivalent to one tone of CO₂. A CDM project activity might involve, for example, a rural electrification project using solar panels or the installation of more energy-efficient boilers. (Kyoto Protocol to the United Nations Framework Convention on Climate Change 1997, Article 12.)

Joint Implementation

Joint Implementation (JI) allows a country with an emission reduction or limitation commitment to invest in emission reduction project in industrialized country as an alternative to reducing emissions domestically. In this way a party can earn emission reduction units (ERU), each equivalent to one tonne of CO₂. Joint implementation offers Parties a flexible and cost-efficient means of fulfilling a part of their Kyoto commitments, while the host Party benefits from foreign investment and technology transfer. A JI project might involve, for example, replacing a coal-fired power plant with a more efficient heat and power plant. (Kyoto Protocol to the United Nations Framework Convention on Climate Change 1997, Article 6.)

The following figure summaries information about described mechanisms.

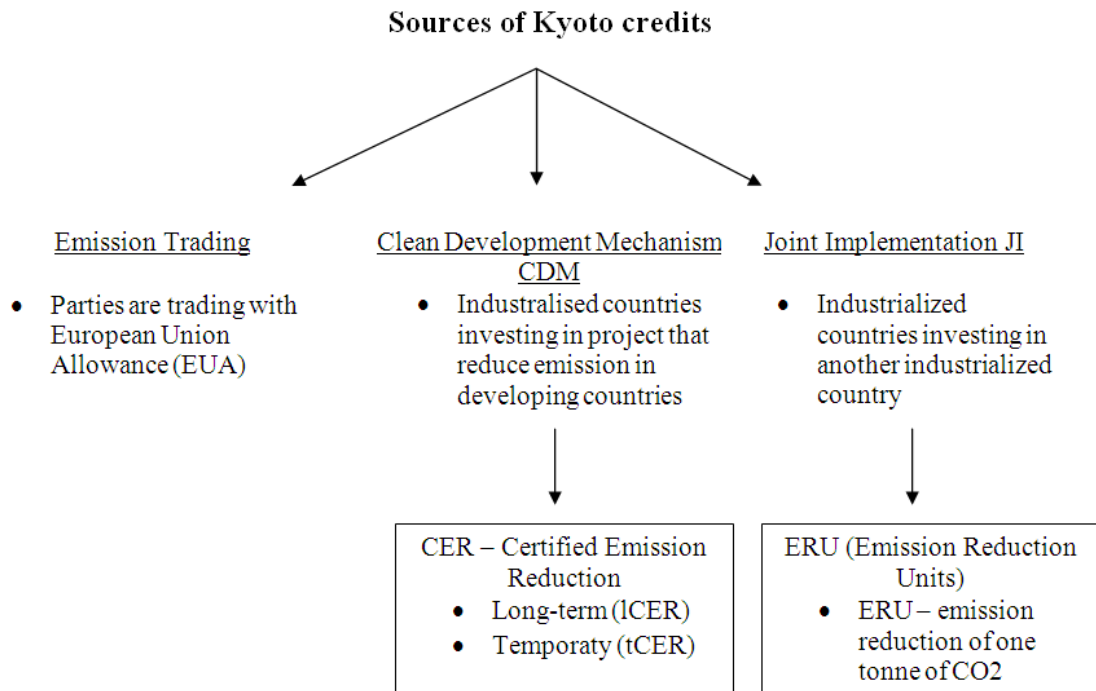


FIGURE 9. Modes of achieving Kyoto credits.

3.2 The ETS in Poland

Poland signed The United Nations Framework Convention on Climate Change (UNFCCC) treaty in 1992, and ratified it in 1994 at it is mentioned before. The country is a member of Kyoto Protocol since 2002, when it committed to reduce CO₂ emission by 6% in comparison to 1988, a base year, by the period 2008-2012. The factors which had driven Poland to sign those two treaties were political forces (joining European Union) and will to participate in international process against climate changes.

Poland took seriously action in fulfilling the resolutions of the Kyoto Protocol. In 2006 emission were 32% lower than in base year. However, as a developing country, it has to be expected increase of greenhouse gas emissions. The main reasons are the sources of energy (hard coal and lignite), what causes difficulties in further emission reduction. Poland, though, as a member of European Union wants to strongly contribute to European fight against climate change. According to UNFCCC, till 2003 the European Union which is responsible only for 14% of global emission, mainly thanks to new members reduced CO₂ emission by 350 millions tones. To achieve

further emission reduction, it is necessary that all countries cooperate together and develop common strategies against climate change.

European Union influence

The structure of the Emission Trading System in Poland is highly influenced by European Union policy. The main act which determines the regulations concerning the ETS is Directive 2003/87/EC of European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC. The directive contains regulations of trading with allowances among European Union in order to achieve the resolutions of the Kyoto Protocol in cost-effective and economically efficient manner. In emission allowance trading participation might be taken by such industries as: power industry, iron and steel metallurgy, mineral and paper industry. Each EU member is obliged to create and implement national programs of greenhouse gas emission reduction, to monitor and report progress in fulfilling resolutions of the Kyoto Protocol. Additionally, each Member State has to create National Allocation Plan for periods 2005-2007 and 2008-2012 stating the total quantity of allowances that it intends to allocate for the period and how it proposes to allocate them (Article 9, directive 2003/87/EC).

Internal regulations

According to European regulations The Emission Trading System in Poland consists of two systems: national emission trading system and European emission trading system. The main act which states about the ETS is Act 2004 Journal Act No 281 item 2784 of 22nd December 2004 on trade in emission allowances of greenhouse gases and other substances. The act states that main authority concerning the ETS is The National Administration of the Emission Trading Scheme, which gather information about installations which take part in allowances trading, creating analysis and reports concerning the system and finally preparing National Allocation Plans. There are two sections incorporated to Polish National Administration of the Emission Trading Scheme: Polish Registry of allowances and National Emission Center (NEC). The Polish Registry gathers data about allocations, transfers and cancellations of allowances. The main task of NEC is to carry out national emission inventories, not only air pollution but also water and soil.

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