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Low Carbon Industrial Policy:

An example of the impact of Europeanisation on Poland

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RESEARCH REPORTS · POLICY PAPERS

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2011

Report for Institute of Public Policy Research,
Low Carbon Industrial Strategy Project

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The leading role of Europeanisation

Poland has made a commitment to reduce the emission of greenhouse gases by ratifying the Kyoto Protocol¹ and by participating in the climate policy of the European Union (EU). The above commitments have influence on a number of areas of Polish government's activity, including environment, energy and economic sectors. The law of the European Union binding for all the Member States makes particularly significant impact. That applies primarily to EU regulations known under the name of the EU Climate and Energy Package (CEP), which was negotiated in 2008 and has been successively introduced into the EU legal system. The above-mentioned regulations make a much stronger impact in Poland than the United Nations Framework Convention on Climate Change adopted in Kyoto. In the area of environmental protection, the EU law has the priority of application over other international obligations. In addition, the CEP introduces much stricter requirements for the reduction of greenhouse gases emissions and imposes higher costs on the adjustment of Polish energy sector and other sectors of Polish economy to the requirements of the EU law². The influence of the EU on the Member States during the course of European integration is described in the literature of the subject as Europeanisation³. In this study I will analyse the influence on the policy of the Polish government with respect to stimulating the development of low carbon economy (including industry).

¹ Kyoto Protocol – supplements the United Nations Framework Convention on Climate Change, which was signed in Rio de Janeiro in 1992. The Protocol was negotiated in Kyoto in December 1997. The Treaty came into force in 2005. See The Kyoto Protocol to the United Nations Framework Convention on Climate Change, done in Kyoto on 11 December 1997 r., *Journal of Laws* 2005 no. 203 item 1684.

² More: R. Jeszke, A. Błachowicz, E. Smol, P. Sikora, S. Lizak, M. Pyrka (2009): *Wybrane aspekty wdrażania Pakietu energetyczno-klimatycznego* [Selected aspects of the implementation of the Climate and Energy Package, KASHUE-KOBIZE, Warsaw, p. 13; M. Pyrka, S. Lizak (2009): *Zjawisko ucieczki emisji w sektorach energochłonnych w Polsce w kontekście zmian wprowadzanych w systemie EU ETS na lata 2013-2020* [Emission leakage in the energy-intensive sectors in Poland in the context of the changes introduced to the EU ETS for the years 2013-2020], KASHUE-KOBIZE, Warsaw, p. 8; *Zielona Księga Narodowego Programu Redukcji Emisji Gazów Ciepłarnianych* [Green Book of the National Programme for the Reduction of Greenhouse Gases Emissions], Społeczna Rada Narodowego Programu Redukcji Emisji, Warsaw 2010, p. 29; *Ocena potencjału redukcji emisji gazów cieplarnianych w Polsce do roku 2030*, McKinsey&Company, Warsaw 2009; *Energy and CO₂ emissions scenarios of Poland*, International Energy Agency, OECD 2010; *Transition to a Low-emissions Economy In Poland*, World Bank, Washington 2011; K. Żmijewski (2011): *Zagrożenie problemem carbon leakage w Polsce* [Risk of carbon leakage in Poland], E. Kwiatkowski Institute, Warsaw.

³ See T. A. Börzel (2005): *Europeanization: How the European Union Interacts with its Member States*, w *The Member States of the European Union*, (ed.) S. Bulmer, Ch. Lequesne, Oxford University Press, Oxford; New York; T. A. Börzel, T. Risse (2007): *Europeanization: The Domestic Impact of EU Politics*, w *Handbook of European Union Politics*, (ed.) K. E. Jørgensen, M. A. Pollack, B. J. Rosamond, Sage, London; M. G. Cowles, J. A. Caporaso, T. Risse (ed.) (2001): *Transforming Europe: Europeanization and Domestic Change*, Cornell University Press, Ithaca, NY; K. Featherstone, C. M. Radaelli (red.) (2003): *The Politics of Europeanization*, Oxford University Press, Oxford; New York; P. Mair (2004): *The Europeanization dimension (Review)*, *Journal of European Public Policy*, 11(2): 337-348; C. M. Radaelli (2003): *The Europeanization of Public Policy*, in *The Politics of Europeanization*, (ed.) K. Featherstone, C. M. Radaelli, Oxford University Press, Oxford; New York. See also other definitions of Europeanisation: J.P. Olsen (2002): *The many faces of Europeanization*, *Journal of Common Market Studies*, no. 40 (5), 921-952.

The CEP targets are commonly referred to as “3 times 20 for 2020” and are as follows:

- To achieve 20% increase in energy efficiency in relation to the BAU scenario⁴ by the year 2020;
- To increase the share of energy from renewable sources up to 20% of the final energy consumption in the EU by the year 2020;
- To reduce by at least 20% the emission of greenhouse gases in relation to 1990 levels by the year 2020, with an option of further reduction even to 30%, provided that other developed countries commit themselves to a similar reduction of emissions and the selected developing countries make an appropriate contribution adequate to their reduction capabilities. It is worth noticing that some European politicians insist⁵, that the EU should make a unilateral commitment to reduce gas emissions by 30% regardless of the position taken by countries outside Europe. In addition, the European Commission⁶ proposes a further reduction of emissions in 2050 by 80-95% relative to 1990 levels.

In Poland it is particularly difficult to meet the CEP criteria. There are several factors that make it so. The first one is the very poor condition of Polish energy infrastructure. Experts' estimates show⁷, that about 40% of power generating units are over 40 years old. 15% are over 50 and they should be immediately stopped and disconnected from the grid. More than 70% of power units are 30 years old or older. Decapitalisation of power plants exceeds 73%, of transmission networks 71%, distribution networks 75% and the depreciation of the heating sector exceeds 63%. The already poor condition of the infrastructure is worsening systematically and this phenomenon has been counteracted neither by the process of privatisation of the energy sector nor by commercial or public investment of recent years. Their scale is too small as compared to the needs and, in addition, the projects are often blocked by some formal or legal ambiguities arising from the implementation of CEP. The main issue is the protracted work of the EU institutions on the details of the Package and especially the scope of the free emission allowances for the energy sector in the years 2013-2020⁸. Polish government's estimates⁹ show that in the

⁴ BAU - (business as usual) - a scenario in which no additional action is foreseen with respect to energy efficiency.

⁵ Hedegaard backtracks on EU climate goals, EurActiv, 27 May 2010; *Climate change: Commission invites to an informed debate on the impacts of the move to 30% EU greenhouse gas emissions cut if and when the conditions are met*, European Commission, Brussels, IP-10-618, 26 May 2010.

⁶ See *A Roadmap for moving to a competitive low carbon economy In 2050*, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, COM(2011) 112/4, Brussels 8.3.2011.

⁷ See *Zielona Księga Narodowego Programu Redukcji Emisji Gazów Ciepłarnianych* pp. 32-35.

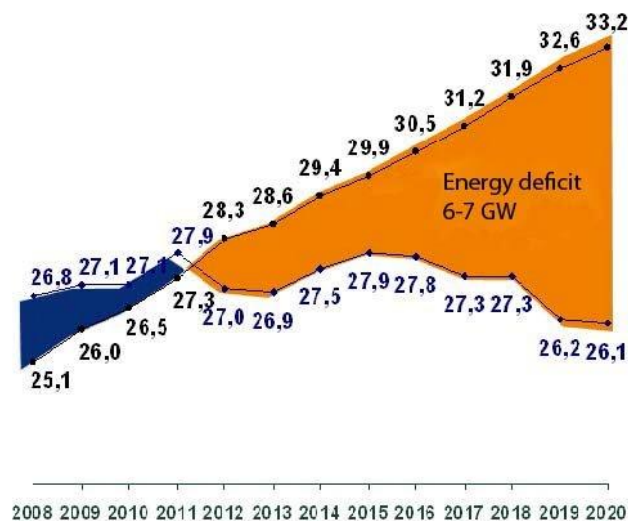
⁸ J. Piszczatowska, K. Baca (2010): *Firmy wstrzymują węglowe inwestycje*, Rzeczpospolita daily, 08-02-2010; J. Piszczatowska (2011): *Polska potrzebuje nowych elektrowni*, Rzeczpospolita daily, 03-02-2011; A. Łakoma, K. Baca (2011): *Plany UE szkodzą elektrowniom*, Rzeczpospolita daily, 11-03-2011.

⁹ *Polska 2030*, Prime Minister's Chancellery, Warsaw 2009, pp. 176, 180-181. Some experts point out that the demand for energy will indeed grow but it will still be smaller than the estimates included in the report *Polska 2030*. See Z. M. Karaczun, A. Kassenberg, M. Sobolewski (2009): *Polityka klimatyczna Polski - wyzwanie*

coming years it will be necessary to double the existing energy generating capacity. Investment in modernisation and in new capacity should reach 86 billion PLN (21.5 billion euro) by 2015 and another 49 billion PLN (12.2 billion euro) by the year 2030. Without this investment, energy deficit (shortfall in supply) will appear as early as 2011. It will reach about 25% in relation to the needs by the year 2030 (in a scenario where the necessary modernisation has not been carried out) (see Figure 1). What is more, the depreciation of the energy infrastructure is the reason why the potential of emissions reduction in Poland by the year 2020 is only 3 percent (in relation to the year 2005). Any possibilities of growth of this potential appear only after 2020, provided that significant investment will have been made¹⁰.

Figure 1: Estimated energy deficit 2011-2030

Sources: *Polska 2030*, Prime Minister's Chancellery, Warsaw 2009, p. 180.



Secondly, the energy sector in Poland is not very efficient, which is in part caused by the poor condition of the infrastructure. The energy intensity of the economy is one of the highest in the European Union (see Figure 2). According to the government's estimates¹¹ it is approximately three times higher than in the "old" Member States (EU15). It is worth noting that the level of energy intensity went down significantly in the 1990s as a result of the deindustrialisation which accompanied the economic transformation process as well as the improvement of economic effectiveness of the remaining enterprises adapting to the free market conditions. Privatisation and the inflow of new technologies together with the new industrial investment also played an important role.

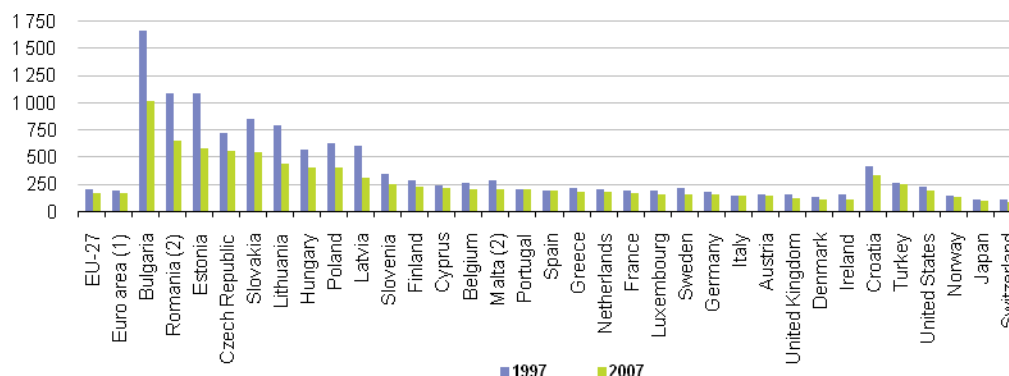
XXI wieku, Polski Klub Ekologiczny, Warsaw, p. 53.

¹⁰ *Ocena potencjału redukcji emisji gazów cieplarnianych w Polsce do roku 2030*, p. 10.

¹¹ *Polska 2030*, p. 172.

Figure 2: Energy intensity of the economy (kg of oil equivalent per EUR 1 000 of GDP)

Sources: *Europe in figures. Eurostat yearbook 2010*, Eurostat 2010.



Thirdly, close to 90% of energy in Poland is generated from coal and lignite (the EU average is less than 30%). This results from the fact that Poland's own coal resources are relatively big, which is the reason why a coal-based economy is of great significance in Poland as far as the national energy security is concerned. It is, however, a high emission source of energy, generating twice as much CO₂ as natural gas. That is why the implementation of CEP is much more expensive in Poland than in other EU countries, for example in those which base their energy generation on gas (the Netherlands, Italy, Ireland, the United Kingdom), nuclear energy (France, Sweden, Belgium, Lithuania, Slovakia) or renewable sources (Austria, Latvia, Sweden, Finland). The share of energy from renewable sources (RSE) in Poland in 2008 reached only 7,6%, whereas the EU average was at that time close to 18%¹². In the opinion of the government experts¹³ it will be difficult to achieve the CEP targets in this respect (for Poland they are 15% RSE by 2020). As a result, Poland is one of the biggest emitters of greenhouse gases in the EU (see Table 1). In relation to the potential of its economy (measured with the GDP purchasing power parity) Poland is one of the countries with highest investment needs and poorest possibilities of their fulfilment. Most of the new EU Member States from Central Europe belong to that group.

¹² *Energia ze źródeł odnawialnych w 2009 r.*, Central Statistical Office, Warszawa 2010, p. 18.

¹³ *Zielona Księga Narodowego Programu Redukcji Emisji Gazów Ciężkich*, p. 89.

Table 1: Greenhouse gas emissions

Sources: *Europe in figures. Eurostat yearbook 2010*, Eurostat 2010; *2010 Key World Energy Statistics*, International Energy Agency 2010.

	CO ₂ emissions / GDP (PPP) (kg CO ₂ / 2000 USD)		Weighted emissions of greenhouse gases (million tonnes of CO ₂ equivalent)			
	2008	Rank	1997	2002	2007	Share in EU-27 (%) Rank
EU-27			-	5 065,7	5 045,4	-
Euro area	:		3.365,1	3 414,5	3 364,1	66,7
OECD	0,38					
Belgium	0,34		145,1	142,9	131,3	2,6
Bulgaria	0,64	2	83,8	66,5	75,8	1,5
Czech Republic	0,54	3	153,0	145,1	150,8	3,0
Denmark	0,28		79,8	68,6	66,6	1,3
Germany	0,34		-	1 006,4	956,1	19,0 1
Estonia	0,78	1	21,3	18,1	22,0	0,4
Ireland	0,28		62,8	68,8	69,2	1,4
Greece	0,34		118,1	127,8	131,9	2,6
Spain	0,29		332,7	403,1	442,3	8,8 5
France	0,21		564,6	549,3	531,1	10,5 4
Italy	0,28		528,7	555,8	552,8	11,0 3
Cyprus	0,42	5	7,5	9,3	10,1	0,2
Latvia	0,24		12,0	10,7	12,1	0,2
Lithuania	0,26		22,6	20,6	24,7	0,5
Luxembourg	0,33		9,8	11,3	12,9	0,3
Hungary	0,33		79,9	78,0	75,9	1,5
Malta	0,33		2,6	2,8	3,0	0,1
Netherlands	0,33		225,9	215,5	207,5	4,1
Austria	0,25		83,1	87,0	88,0	1,7
Poland	0,53	4	449,1	371,5	398,9	7,9 6

Portugal	0,28		71,4	88,8	81,8	1,6
Romania	0,41	6	166,7	146,7	152,3	3,0
Slovenia	0,34		19,6	20,1	20,7	0,4
Slovakia	0,38		49,9	49,0	47,0	0,9
Finland	0,34		75,7	76,8	78,4	1,6
Sweden	0,15		72,6	69,6	65,4	1,3
United Kingdom	0,28		708,1	655,8	636,7	12,6 2

Therefore, with respect to energy and climate policy, Europeanisation forces Poland (and other countries of Central and Eastern Europe) to bear high adjustment costs. They may have some serious consequences for the functioning of individual economies, they may also reduce their competitiveness in the cost-effectiveness aspect, both on the common market and in the global trade. Even more so as the CEP does not take into account the specific nature of those countries' energy sectors (e.g. it does not make a distinction between the more difficult starting points of the coal-based economies). In principle, it does not take into account the difference in the level of development of individual countries, either. For example, the division of the emission rights introduced in the EU (the so called EU ETS) assumes that only 10 percent of the rights will be distributed on the basis of the GDP per capita criterion¹⁴. That makes a fundamental difference in comparison to the Kyoto Protocol, where the former socialist countries were treated less strictly and were expected to reduce their emissions only by 6 percent in relation to 1988 levels. According to experts, Poland has more than fulfilled that target (having reduced its emissions relative to the base year by approx. 30 percent)¹⁵. The Climate and Energy Package has not only introduced higher targets but it has also failed to take into account the reduction made in post-socialist countries in the 1990s. This is connected with the fact that under the EU system for managing the green house gases emissions, the year 2005 has been adopted as the main reference point and, in addition, the Community emission trading scheme (EU ETS) calculates the emission allowances (and the related reduction) for the entire Union.

Specialists also point to other elements of the CEP which are disadvantageous for the less vigorously developing economies of Central Europe. For instance, the allocation of the free emission rights in the years 2013-2020 for the industrial sectors threatened with relocation of production ("emissions leakage") is made on the basis of the benchmarks from the most effective and technologically advanced

¹⁴ For this reason, in the years 2013-2020 Poland may count on only 30 million emission rights, which accounts for less than 1 percent of the total number of emission rights for that period of time. See R. Jeszke, A. Błachowicz, E. Smol, P. Sikora, S. Lizak, M. Pyrka (2009): *Wybrane aspekty wdrażania Pakietu energetyczno-klimatycznego*, KASHUE-KOBiZE, Warszawa, p. 9.

¹⁵ Z. M. Karaczun, A. Kassenberg, M. Sobolewski (2009), p. 44.

installations in the European Union. It is beneficial for the best developing countries with modern energy sector and the economies highly saturated with energy efficient technology. The allocation of emission rights does not take into account the fuel specificity of individual economies, which will be unfavourable for the countries with coal-based economies¹⁶. *Some industries in Poland (...) will receive fewer emission rights needed for production than their competitors in other EU Member States*¹⁷. It is estimated that for this reason, Polish economy will receive approximately 30% fewer emission rights¹⁸. That is why experts foresee a possibility of reduction of foreign investment in the sensitive sectors or relocation of production to other EU Member States with lower production costs¹⁹. In Poland, the enterprises that belong to the most energy intense sectors are the most threatened: smelting, chemical and refinery sectors, mineral and paper sectors²⁰. Some sectors have not been included by the European Commission (EC) on the list of free emission rights at all because of the risk of "emissions leakage"²¹.

Poland has found itself in the group of states enjoying, in the years 2013-2020, the right of derogation of the paid emission rights in the power generation sector (it has received up to 70 percent of free emission rights in 2013, to be gradually reduced in the subsequent years). It will probably slow the pace of the energy price hikes for companies and individual consumers. Nevertheless, the European Commission exerts pressure on Poland to make it use the free emission rights to the least possible extent²². It has also proposed to link the derogation with additional investment in CCS installations²³. The prolonged negotiations have almost completely frozen the investment in the energy sector in Poland²⁴, and they even prompt some companies to withdraw from the Polish market²⁵. Whereas in the sectors not included in the EU ETS (transport, agriculture, housing etc.) Poland has the possibility to increase the emissions by 14%. According to experts²⁶ the forecasted growth of emissions in the years 2005-2030 amounts here to as much as 68%, which is the reason why the decision of the EC is highly insufficient. The growth of emissions in transport is, to a great extent, stimulated by transport sector investment projects funded from EU funds.

In conclusion, it should be noted that the consequences of introducing the CEP will be particularly strong in the countries with a disadvantageous energy mix and

¹⁶ See R. Jeszke, A. Błachowicz, E. Smol, P. Sikora, S. Lizak, M. Pyrka (2009), p. 13; M. Pyrka, S. Lizak (2009) p. 8; *Zielona Księga Narodowego Programu Redukcji Emisji Gazów Ciepłarnianych*, p. 29.

¹⁷ M. Pyrka, S. Lizak (2009), p. 38.

¹⁸ E. Smol (2010): *Metodyka wraz z przykładowym obliczeniem „limitu” krajowej emisji gazów ciepłarnianych dla Polski na lata 2013-2020*, KASHUE-KOBiZE, Warszawa, p. 11.

¹⁹ M. Pyrka, S. Lizak (2009), p. 9.

²⁰ *Ibidem*, pp. 13, 16, 39; *Efektywność wykorzystania energii w latach 1998-2008*, Central Statistical Office, Warszawa 2010, pp. 44-45.

²¹ In Poland that applies to the manufacturers of bricks and roof tiles. See R. Jeszke, A. Błachowicz, E. Smol, P. Sikora, S. Lizak, M. Pyrka (2009), p. 17.

²² *Bruksela utrudnia darmową emisję CO₂*, Rzeczpospolita daily 24-01-2011.

²³ *CCS (Carbon Capture and Storage): installations for capturing and storage of CO₂*. See *Unia uderzy w inwestycje w polskich elektrowniach*, Rzeczpospolita daily, 15-02-2011.

²⁴ *Elektrownie czekają w napięciu*, Rzeczpospolita daily, 28-01-2010.

²⁵ *Członek zarządu zapowiada, że Vattenfall sprzeda swój biznes w Polsce*, Gazeta Wyborcza daily, 20-01-2011.

²⁶ Statement made by A. Kassenberg during the conference „Droga ku efektywnemu wdrażaniu PEK” [Towards effective implementation of CEP], 18 November 2009, Warsaw.

at the same time weaker economies. In the case of Poland the necessary investment is estimated to be at the level of 92 billion euro by the year 2030²⁷. Experts of the International Energy Agency²⁸ estimate the total costs of the implementation of CEP and the enhancement and modernisation of the energy infrastructure in Poland to amount to 195 billion euro at the same time. Domestic experts²⁹ assume that even higher costs will be involved: from 265 to 320 billion euro. The scale of this investment is disproportionate to the level of economic development.

According to some estimates, the huge scale of investment imposed by the CEP will bring GDP growth and increase of employment in the whole European Union. According to German experts³⁰, the reduction of CO₂ emissions to the level of 30 percent will increase the EU GDP in 2020 by 5.7% and will reduce the number of the unemployed by more than 30%. These estimates do not, however, take into consideration the negative economic consequences. The predictions for Poland include an increase of the production costs, lower competitiveness of the economy and outflow of production investment outside the country. According to EU experts³¹, in Poland, the employment in the sectors at risk of transfer abroad of high emission and energy-intensive industries is the highest in the EU and exceeds 9% of all people employed in industry (the average rate for the EU is less than 3%). This means that in the face of a significant scale of investment, business may be more willing to transfer the production than to bear the high costs. According to World Bank experts, implementation of the CEP in Poland will have adverse effects on the speed of economic growth, at the average annual level of 1 percent of GDP by the year 2030. The years around 2020 will be the most difficult ones, then the costs of the Package may reach even 2 percent of GDP. It is also possible that employment will fall annually on average by 140 thousand people (approx. 1 percent of all the employed)³². The estimates of Polish experts³³ are even more alarming (average 2% fall of GDP and an almost 2 percent rise in unemployment). Thus Europeanisation brings asymmetrical consequences for individual EU Member States, it is more beneficial for the richer economies, with better-developed environment-friendly technology and less dependent on coal. In addition, the European policy does not take into consideration the domestic energy resources in Poland, which is an aspect of economic security.

²⁷ *Ocena potencjału redukcji emisji gazów cieplarnianych w Polsce do roku 2030*, p. 17.

²⁸ *Energy and CO₂ emissions scenarios of Poland*, International Energy Agency, OECD 2010, p. 4.

²⁹ *Zielona Księga Narodowego Programu Redukcji Emisji Gazów Cieplarnianych*, p. 31.

³⁰ *A New Growth Path for Europe*, European Climate Forum, Potsdam 2011, p. 9.

³¹ *ReRisk Regions at Risk of Energy Poverty*, The ESPON 2013 Programme, Version 31/03/2010, p. 2.

³² *Por. Transition to a Low-emissions Economy In Poland*, pp. 15-17.

³³ K. Żmijewski (2011), p. 5.

Strategy of the Polish government for the support of low carbon economy

The worsening collapse of the energy infrastructure in Poland has not proved to be a sufficient reason for subsequent governments to undertake appropriate strategic action. It shows the weakness of the long-term economic policy of the state³⁴. Polish climate policy has emerged under the influence of the ratification of the Kyoto Protocol. It should, however, be noted that it has not included any active economic policy of the government as the reduction of emissions took place spontaneously, as a result of industrial restructuring during the system transformation and the privatisation process. This has even prompted the Polish government to adopt an ambitious emissions reduction target of 40% by the year 2020 relative to the base year of 1988³⁵.

The situation has changed following the European integration, and especially under the influence of the Climate and Energy Package³⁶. Poland has started various planning activities, which initially concerned mainly the area of ecology and only later touched upon the economy (mainly the energy sector, and, to a lesser extent, other sectors). The actions of the Polish authorities are therefore taken, to a great extent, in reaction to the European regulations and policies. Their primary role is to implement the Europeanisation requirements and to a much lesser extent – to pursue the long-term national interests. What is more, they are implemented with significant delay (in relation to the strategic discussions at the EU level). Another drawback is the political passivity in the European arena³⁷. Poland joined the CEP negotiations too late, without proper preparation based on estimating the costs for Polish economy of implementing the Package³⁸. For example, appropriate statistical data concerning Polish voivodships were not submitted. As a result, the EU documents³⁹ have not included Polish regions among those most threatened with the transfer of the high emission and energy intensive industries. This shows the weakness of the long-term economic policy, which, in the conditions of European integration, requires active participation in the planning of European policies. It is also clear that there is no political continuity of the subsequent governments and both the documents and the strategic goals are widely dispersed, especially at the ministry level. What is more, they are not sufficiently coordinated⁴⁰.

³⁴ On the weakness of the Polish government economic policy, among others: D. Klonowski (2010): *The effectiveness of government-sponsored programmes in supporting the SME sector in Poland*, Post-Communist Economies, vol. 22, no. 2, 229-245; T. G. Grosse (2010): *Barьеры для скачка цивилизационного Польши 2010-2030*, in: A. Kukliński, K. Pawłowski, J. Woźniak (ed.): *Polonia quo vadis?* Biblioteka Małopolskiego Obserwatorium Polityki Rozwoju, 3rd vol., Kraków, p. 93-115.

³⁵ See *Polityka Klimatyczna Polski. Strategie redukcji emisji gazów cieplarnianych w Polsce do roku 2020*, Ministry of Environment, Warsaw, a document adopted by the Council of Ministers on 04 November 2003, p. 14.

³⁶ An interview with D. Ledworowski (Public Board for the national Programme of Emissions' Reduction), March 2011; an interview with T. Chruszczow (Ministry of Environment), March 2011.

³⁷ Z. M. Karaczun, A. Kassenberg, M. Sobolewski (2009), p. 45.

³⁸ An interview with A. Kassenberg (Institute for Sustainable Development), March 2011; an interview with D. Kulczycka (PKPP Lewiatan), March 2011; an interview with D. Ledworowski (Public Board for the national Programme of Emissions' Reduction), March 2011.

³⁹ *ReRisk Regions at Risk of Energy Poverty*, p. 14-15. This point is also made by: K. Żmijewski (2011), p. 10.

⁴⁰ An interview with A. Błachowicz (Ministry of Environment), March 2011.

The main strategic document in the recent years has been the National Development Strategy 2007-2015 (NDS) adopted in the autumn of 2006⁴¹. After the change of government in 2007 the document became only a front, without any great political significance. Even though the new cabinet adopted initial proposals for an update of the NDS⁴², yet it later practically suspended any work on that and began to prepare a separate document designed to be a long-term strategy for national development. By the end of the government's term in office such a document was not produced. In this situation, the fundamental documents setting the government policy for the years 2007-2011 is the National Reform Plan for the years 2008-2011 (NRP)⁴³ and the National Strategic Reference Framework 2007-2013 (NSRF)⁴⁴. Both documents have been prepared under the influence of the European Union and to bring Polish policymaking into line with EU regulations and directions. The former was supposed to implement the Lisbon Strategy in Poland, whereas the latter implements the cohesion policy. Table 2 shows a list of the main priorities included in the above-mentioned documents.

Table 2: Priorities of the Polish government's economic policy (2007-2011)

Government strategic documents	Main priorities					
	(in brackets – the order of priorities in a given document)					
NDS 2007-2015	Increased competitiveness and innovation of economy (1)	Improvement of the condition of technical and social infrastructure (2)	Increase of employment and improvement of its quality (3)	Building an integrated social community and its security (4)	Development of rural areas (5)	Regional development and the improvement of territorial cohesion (6)
NRP 2008-2011	Innovative economy (2)		Active society (1)	Efficient institutions (3)		
NSRF 2007-2013	Improving the competitiveness and innovativeness of enterprises, including in particular the manufacturing sector with high added value and development of the services sector (4)	Establishment and modernisation of technical and social infrastructure crucial for better competitiveness of Poland (3)	Improving the human capital quality and enhancing social cohesion (2)	Improving the functioning standard of public institutions and development of partnership mechanisms (1)	Balancing growth opportunities and supporting structural changes in rural areas (6)	Increase of the competitiveness of Polish regions and preventing their social, economic and territorial marginalisation (5)
Summary	Innovative economy	Development of infrastructure	Development of human capital	Institutional Development	Development of rural areas	Regional development

⁴¹ *Strategia Rozwoju Kraju 2007-2015* [National Development Strategy], Ministry of Regional Development, Warszawa 2006.

⁴² *Założenia aktualizacji Strategii Rozwoju Kraju 2007-2015* [Proposals for the update of the National Development Strategy], Ministry of Regional Development, Warszawa 2008.

⁴³ *Krajowy Program Reform na lata 2008-2011 na rzecz realizacji Strategii Lizbońskiej* [National Reform Programme for the years 2008-2011 for the implementation of Lisbon Strategy], Ministry of Economy, Warszawa 2008.

⁴⁴ *Narodowe Strategiczne Ramy Odniesienia 2007-2013* [National Strategic Reference Framework] (document approved by a decision of the European Commission), Ministry of Regional Development, Warszawa 2007.

In the strategic documents under analysis, six main priorities can be found. They all refer to the higher goal of building the competitiveness of Polish economy. Among the priorities, three seem to be of the greatest importance for the state's economic policy: (1) development of innovative economy, (2) infrastructure for the purposes of economic competitiveness and (3) human capital. The priority concerning institutional development aims at improving the effectiveness of the implementation of public policies, and especially the implementation of the policies, regulations and funds of the EU. Whereas the remaining priorities concerning development of rural areas and regions in fact implement the already mentioned priorities within the territorial system of the country.

All the documents under analysis refer to the EU CEP. However, they refer to the objectives of the low carbon policy and development of the energy sector only in a very general way (Table 3). They focus on environmental protection and not on supporting the national economy in order to facilitate the adjustment to the requirements of Europeanisation. Having read those documents one finds it difficult to talk about the existence of a "green" industrial policy or a low carbon economic policy of the Polish government. The NDS is an exception here as it assumes the preparation of multi-annual programmes for the development of individual industries while assuring the fulfilment of the low carbon economy objectives and adapting to EU environmental regulations⁴⁵. This can be seen, for instance, in the fact that even though the Polish government documents are prepared in response to the action taken by the European Union, in some areas it happens with a significant delay in relation to the work at the European level. Whereas in the most recent economic strategy of the EU "Europe 2020", one of the most important development instruments is the "green" industrial policy⁴⁶. In addition, the EU laws allow for public aid to the sectors threatened with high costs of energy purchase and relocation of production abroad. However, the EU regulations are not precise and, in addition, Poland has limited possibilities to grant aid in a situation where the public debt is growing.

One should also remember that EU policies are internally diversified and sometimes even contradictory with respect to the scientific grounds and substantive goals they adopt. The documents of the Polish government refer mainly to the liberal ideas underpinning the EU competition policy and to the main direction of the cohesion policy which promotes the development of transport and environmental infrastructure⁴⁷ in the countries of Central Europe. That is why, in the government documents, the role of transport and environmental protection infrastructure is emphasised stronger than the development of energy infrastructure. One can hardly see any activities of industrial policy that could support enterprises in the costly reduction of

⁴⁵ See *Strategia Rozwoju Kraju 2007-2015*, pp. 38, 46.

⁴⁶ *Europe 2020. A strategy for smart, sustainable and inclusive growth*, European Commission, COM(2010) 2020 final version, Brussels 3.3.2010, pp. 12-16.

⁴⁷ More: T. G. Grosse (2010): *EU Cohesion Policy and the peripheries of the New Member States*, in: *Regional Development in Central and Eastern Europe*, G. Gorzelak, J. Bachtler, M. Smętkowski (eds.), Routledge, London – New York, pp. 313-328.

greenhouse gases emissions. On the other hand, solutions liberalising the energy market are proposed as well as those promoting competition and privatisation of state owned enterprises.

Table 3: Objectives of the Polish government's economic policy (2007-2011) with respect to low carbon economy and development of energy sector

Most important priorities of economic policy	Main strategic documents		
	NDS 2007-2015	NRP 2008-2011	NSRF 2007-2013
Development of innovative economy	<ul style="list-style-type: none"> - development of technologies for the protection of environment and reduction of greenhouse gases emissions ; - protection of competition, liberalisation of energy market, privatisation; - building of strong energy companies capable of competing internationally; - adapting the traditional industries to the requirements of environmental protection. 	<ul style="list-style-type: none"> - ensuring competition on energy market, privatisation; - using innovative solutions for protection of environment (including promotion of clean coal technologies); - promoting energy efficiency (including through taxation). 	<ul style="list-style-type: none"> - development and introduction of new environmental and energy technology.
Development of infrastructure	<ul style="list-style-type: none"> - improving energy security of the country, including through diversification of energy sources, development of distribution networks and the capacity for storage of energy resources; - improving energy efficiency; - development of RSE; - development of nuclear energy generation. 	<ul style="list-style-type: none"> - construction and modernisation of energy infrastructure, including electricity and gas; - development of RSE. 	<ul style="list-style-type: none"> - ensuring the energy security (including diversification of supply sources, construction of transmission networks with other EU countries and of storage capacity); - improving energy efficiency; - development of RSE.
Development of human capital	---	---	---

In none of the strategic documents under analysis there could be found proposals for action for human capital development which would be related to low carbon economy. Thus, one of the three main priorities of the economic policies of subsequent governments has not been practically included in the planning for emissions reduction. An additional problem is the fact that Poland does not have a tradition of preparing political strategies oriented towards solving one particular problem which would combine the activities of several ministries at the same time. For instance, there is no strategy for low carbon industrial policy that would coordinate the action of various ministries and at the same time would ensure the

implementation of the main priorities of the government's economic policy⁴⁸. Even though in 2010, in the Ministry of Economy, the main assumptions of the National Programme for the Reduction of Greenhouse Gases Emissions⁴⁹ were prepared, yet it is a document of a very general nature. It contains only some initial proposals for action which is in principle within the remit of the Ministry of Economy. Experience shows that individual ministries prepare their own sector-specific strategies which usually cover rather narrowly outlined tasks of a given ministry. The only exception is documents prepared by the Ministry of Regional Development (that is where NDS and NSRF have been produced). It was only in December 2010 that an inter-ministerial working group was formed whose task is to prepare the National Plan for the Development of Low Emission Economy, which will provide the basis for the low carbon economic policy of the Polish government. In view of the coming parliamentary elections, however, it is not at all clear whether this policy will be drafted in the near future.

A number of sector-specific documents may be mentioned here which have been prepared recently and which aim at implementing the EU CEP in Poland⁵⁰. Experts note⁵¹ that in Poland the climate policy has never been integrated with the economic policy. A strategy that, to the greatest extent, points to the government priorities related to low carbon economy is currently only the Polish Energy Policy until the year 2030 (PEP)⁵². It refers directly to the CEP, and the three main objectives of the Package have been transferred directly as priorities of the strategy. Thus the Polish energy sector strategy focuses more on the implementation of the CEP and less on the implementation of the national economic policy. This is clearly visible on the example of the rather scarce support instruments addressed to enterprises. Similarly as in the other documents described above, one of the main mechanisms for adapting the industry to EU regulations is market liberalisation, which leads largely to shifting the cost of new investment projects to energy consumers. The government is also trying to increase the obligations of local governments with respect to investment projects. An important priority of this strategy is the energy security. As I have mentioned before, in this respect the requirements of the CEP are a real challenge for Polish economy based on coal (and our own coal resources). That is why the government's energy policy leads not only to diversification of directions of energy supply, construction of storage capacity, etc. but also to diversification of the energy mix. The point is to reduce the dominating position of coal as the energy source in Poland. Table 4 shows the planned objectives and activities of Polish government for reduction of greenhouse gases emissions. They have been prepared on the basis of PEP.

⁴⁸ An interview with A. Kassenberg (Institute for Sustainable Development), March 2011; an interview with D. Kulczycka (PKPP Lewiatan), March 2011; an interview with M. Sobolewski (Bureau of Research, Chancellery of the Sejm), March 2011; an interview with D. Ledworowski (Public Board for the National Programme of Emissions' Reduction), March 2011.

⁴⁹ *Założenia Narodowego Programu Redukcji Emisji Gazów Ciepłarnianych*, Ministry of Economy, Warsaw 2010.

⁵⁰ E.g. *Polityka ekologiczna państwa w latach 2009-2012 z perspektywą do roku 2016 [National Environmental Policy in the years 2009-2012 with the perspective by the year 2016]*, Ministry of Environment, Warsaw 2008; *Krajowy Plan Działań dotyczący efektywności energetycznej (EEAP)*, Ministry of Economy, Warsaw 2007.

⁵¹ A. Kassenberg (2009).

⁵² *Polityka energetyczna Polski do 2030 roku*, Ministry of Economy, Warsaw 2009.

Table 4. Objectives and activities for low carbon economy in relation to the economic policy priorities (2007-2011)

Main economic policy priorities	Low carbon objectives (based on PEP)					
	Advanced technologies	Competition on energy market	Energy efficiency	Energy security	Development of RSE (3)	Development of nuclear energy
Development of innovative economy	<ul style="list-style-type: none"> - development of clean coal technologies (CCS) and their implementation in the economy; - development of technologies using methane released in coal mines; - development of other energy efficient technologies, including nuclear and RSE. 	<ul style="list-style-type: none"> - privatisation of energy and resource enterprises; - protection of competition in energy sectors, - removing barriers to changing the energy supplier by consumers; - liberalisation of energy market (incl. freeing energy prices for individual consumers), - creating markets for spot and futures / forward contracts for electricity; - formation of strong capital groups on the basis of existing resource and energy companies. 	<ul style="list-style-type: none"> - establishing the national target for increasing energy efficiency; - stimulating development of cogeneration; - marking of energy intensity of devices and products and introduction of energy consumption standards for them. 	<ul style="list-style-type: none"> - promoting the implementation of clean coal technologies, - increasing access to natural resources in Poland (including coal), - supporting access of Polish fuel companies to foreign deposits; - limiting the possibilities of hostile takeover of national energy companies; - securing the interests of the state (including State Treasury) in the strategic energy companies. 	<ul style="list-style-type: none"> - maintaining support for producers of energy from RSE and its introduction for heat producers; - increasing the share of bio components in transport fuel; - exempting energy from RSE from excise tax; - supporting the Polish manufacturers producing devices and equipment for RSE. 	<ul style="list-style-type: none"> - legal regulation of nuclear energy sector; - preparing Polish industry to participation in the nuclear energy programme, - identifying the accessibility of uranium deposits in Poland.
Development of infrastructure	<ul style="list-style-type: none"> - development of scientific and research infrastructure for energy sector, especially nuclear energy. 	<ul style="list-style-type: none"> - diversification of supply directions and sources of energy, - enhancing the regional energy market in international trade. 	<ul style="list-style-type: none"> - introduction of energy performance certificates for buildings; - introduction of energy efficiency standards for public sector; - using EU funding, NFOŚiGW(1) and FTiR(2) to improve energy 	<ul style="list-style-type: none"> - diversification of supply directions and sources of energy , - expansion of distribution and transmission networks (also with other EU Member States); - building storage capacity for energy resources; 	<ul style="list-style-type: none"> - support for construction of agricultural biogas plants; - removing legal barriers to new infrastructure projects; - construction of infrastructure with EU and NFOŚiGW funding, - using State 	<ul style="list-style-type: none"> -preparing government nuclear energy programme; - construction of nuclear power plants, - construction of nuclear waste storage; - preparation of transmission network for nuclear power plants.

			efficiency of buildings.	- construction of LNG terminal; - construction and modernisation of energy generating infrastructure; - removing legal barriers to new infrastructure projects; - legal changes to increase the investment in energy by local governments.	Treasury infrastructure for RSE production.	
Development of human capital	---	---	- information campaigns promoting rational use of energy.	---	---	- education of personnel for nuclear energy sector; - educating the public on nuclear energy; - public consultations of the government nuclear energy programme.

(1) NFOŚiGW: National Fund for Environmental Protection and Water Management.

(2) Thermomodernisation Fund.

(3) RSE: Renewable Sources of Energy.

Implementation of action in support of low carbon economy

Since the planning of strategic action for low carbon economy has started in Poland quite recently - its implementation has also been delayed. Therefore it is rather difficult to assess its effectiveness. Especially as some experts view the government's activity as mere declarations which are not effectively implemented⁵³. An additional difficulty is the lack of a leading strategic government document both on the economic policy and in relation to low carbon industrial policy. As a result, there is no coherent system of monitoring and evaluation of those policies. Still another problem is posed by the dispersion of the works and planning documents within Polish government. That results in the lack of proper cooperation during the implementation stage.

Because of budget restrictions and the lack of industrial policy tradition after the political system transformation in 1989, legislation is the main area of government activity. This applies particularly to the implementation of EU law.

⁵³ An interview with M. Sobolewski (Bureau of Research, Chancellery of the Sejm), March 2011; an interview with D. Ledworowski (Public Board for the National Programme of Emissions' Reduction), March 2011.

The work has, however, been delayed. An example can be a few months lag in introducing into the national legal system of the EU directives on energy efficiency (2006/32/EC) and on renewable energy sources (2009/28/EC)⁵⁴. The work on provisions concerning the use of nuclear energy to generate electricity was also delayed⁵⁵. As a result, Polish nuclear energy programme has been postponed by at least two years and the first nuclear power plant may start operation in 2022 at the earliest⁵⁶.

The policy of the Polish government shifts most of the costs of adapting Polish economy to the requirements of CEP to the market. It is worth noting that this is consistent with the EU approach. The implementation of the CEP is to be achieved through investment made by enterprises, including, among others, the emission allowances auctioning system and the development of the internal energy market in the EU⁵⁷. Public investment projects are to be only of supplementary nature, for instance, when a project is not attractive enough for the market to finance or when public funds are expected to stimulate market investment. Such an approach means that investment in energy and environmental projects will cause dramatic rise of electricity prices for the industry and individual consumers (especially so as the Polish government is planning to free the energy prices for households⁵⁸). According to various estimates, the price rise may reach from 50 to even 100%⁵⁹. This carries a threat of reduced competitiveness of the economy and decreasing the welfare of the society. It may also reduce foreign investment and lead to relocation of production from Poland to third countries. What is more, the rise of energy prices does not guarantee additional investment. Even though in the recent years the wholesale price of energy has gone up over 60%, investment in power plants has not grown⁶⁰. This is related, among other things, to the specific nature of operation of the big energy groups which operate in many countries. They can use income generated on one market for investing in another. Yet another negative factor influencing investment by companies in Poland is the lack of clarity of EU regulations, especially those concerning the allocation of free emission rights for the energy sector during the transition period (2013-2020).

Without public aid, the energy sector will not be able to increase the capacity and to adjust to the requirements of the CEP. The investment potential of the sector, including its loan eligibility and the financial capability of Polish banks, is too small as compared to the needs. Experts assume⁶¹, that if the involvement of companies were to reach the maximum level of 20 billion euro by the year 2020 – at least 30 billion euro of necessary investment would still be missing. Investment is not sufficiently stimulated by the “coloured” energy certificates scheme⁶², under

⁵⁴ *Zielona Księga Narodowego Programu Redukcji Emisji Gazów Ciepłarnianych*, p. 19, 22.

⁵⁵ *Zielona Księga Narodowego Programu Redukcji Emisji Gazów Ciepłarnianych*, p. 24.

⁵⁶ *Waldemar Pawlak forsuje pakiet atomowy*, *Rzeczpospolita* daily, 17-01-2011.

⁵⁷ See *Conclusions*, European Council, 4 February 2011, EUCO 2/11, Brussels, p. 3.

⁵⁸ *Uwolnienie cen prądu dla konsumentów w 2012 roku*, *Rzeczpospolita* daily, 01-03-2011. .

⁵⁹ *Transition to a Low-emissions Economy In Poland*, p. 17; *Polski nie stać na pakiet 3x20 - wywiad z M. Sworą*, *Prezesem Urzędu Regulacji Energetyki*, *Energetyka ciepłna i zawodowa*, no. 4, 2010, pp. 10-13.

⁶⁰ *Krzysztof Żmijewski: Sektor energetyczny potrzebuje 100 mld euro*, *Rzeczpospolita* daily, 8-11-2010.

⁶¹ *Zielona Księga Narodowego Programu Redukcji Emisji Gazów Ciepłarnianych*, p. 37.

⁶² The “coloured” certificates scheme – introduced in Poland, among other countries, operates in such a way that green

which green energy producers can generate income by trading their certificates. According to experts⁶³ such income exceeds 1 billion Euro per annum, but the weakness of the scheme lies in the fact that while supporting the producers, it does not ensure that new investment in the energy sector is made. Another consequence of Europeanisation in the area under discussion is neglecting investment in the coal-mining sector, which resulted in Poland becoming a net importer of coal⁶⁴. This poses a serious threat to the energy security of the economy.

Experts point out⁶⁵ to the insufficient use of the domestic financial instruments. The scope of support granted by the National Fund for Environmental Protection and Water Management [NFOŚiGW] and the Thermomodernisation Fund [FtIR] is too small. The domestic instruments have at their disposal mainly the funds from the sale of emission allowances (the so called Green Investment Scheme⁶⁶) or substitution fees or penalties connected with fulfilling the obligation to acquire and submit for redemption the energy certificates of origin (the so called “coloured” certificates scheme). They are thus financed, to a great extent, by the business. In the Polish reality the funds are quite substantial (see Table 5), although still insufficient in relation to the needs of low carbon economy. They have been designed mainly to address two objectives: improve energy efficiency and RSE. The relevant government agencies and ministries are not very good at coordinating individual activities. This is a consequence of the lack of a proper institutional system for national development policy (a system that would not be related to the implementation of the EU cohesion policy). In addition, at the time of budget restrictions connected with excessive public debt – the energy sector is one of the places where funds are sought to support the state budget. The fiscal burdens imposed on energy in Poland are among the highest in the EU and exceed 23%⁶⁷. In such a situation even the income from the sale of CO₂ emission rights is threatened, as, according to experts⁶⁸, instead of being used for investment in energy sector, it might go straight to the state budget. And these are potentially amounts reaching from approximately 1.3 billion in 2013 to over 3.3 billion euro in 2020.

energy producers are awarded a transferable certificate for every unit of generated energy. They get income both from physical sale of energy and from trading the certificates. The prices of energy and the certificates are determined on the electricity market. The government sets the quantitative targets for the share of green energy and the market participants who sell energy to end users either buy an appropriate number of certificates or they have to pay a penalty or a substitute fee. These are paid to the state budget and are in part used for co-funding low carbon investment projects. See R. Gnatowska (2010): *Charakterystyka polskiego systemu certyfikacji pochodzenia energii elektrycznej*, Polityka Energetyczna, Vol. 13, Booklet 2, pp. 145-155; K. Żmijewski (2011): *ABC kolorowej certyfikacji*, Materiały Budowlane, no. 1, pp. 8-11.

⁶³ An interview with K. Żmijewskim (Secretary General of the Polish Board for the National Programme of Emissions’ Reduction), March 2011.

⁶⁴ *Polska nadal importerem węgla netto*, Rzeczpospolita daily, 19-01-2011.

⁶⁵ *Zielona Księga Narodowego Programu Redukcji Emisji Gazów Ciężkich*, p. 26.

⁶⁶ GIS – Green Investment Scheme is derived from the emission trading mechanism agreed in the Kyoto Protocol. It is connected with “earmarking” of funding acquired from the sale of the excess of emission units in order to ensure that they are spent on clearly defined objectives related to environmental protection in the state of the units’ seller.

⁶⁷ *Polski nie stać na pakiet 3x20*.

⁶⁸ *Miliardy ze sprzedaży uprawnień do emisji CO₂*, Rzeczpospolita daily, 02-02-2011.

Thus the effectiveness of the domestic financial instruments may be very moderate. The forecasts related to activities implemented by NFOŚiGW indicate⁶⁹, that, thanks to the investment made from the Fund, the efficiency of the end use of energy will, by the year 2016, increase by only approx. 0,67 Mtoe, which accounts for just 15 percent of the national target. Whereas the reduction of CO₂ emissions as a result of all NFOŚiGW activities (including also the cohesion policy instruments) will, over the next seven years (2011-2017), amount only to 5 million tons⁷⁰. It is a rather modest achievement, considering that the annual limit of free emission allowances for Poland in the years 2008-2012 is more than 208 million tons.

A very low level of domestic public funds involvement in innovative projects and in development of new low carbon technologies should also be noted. It is only limited to a small number of research programmes funded by the Ministry of Science and Higher Education (Table 5)⁷¹. This is indeed a wider problem of the economic policy in Poland, where – so far – no national innovation scheme has been created, no scheme that would initiate research and development work suited to the goals of the national development policy and support the transfer of innovation and technology to business. In addition, only limited activities are undertaken in support of the development of human resources, including training and information activities, to meet the needs of low carbon economy (Table 5)⁷².

In this situation, the main source of public funding for investment in Poland are EU funds. In the years 2007-2013 Poland has been the greatest beneficiary of the cohesion policy and may receive more than 67 billion euro from the EU budget (these funds must be supplemented with the mandatory domestic contribution). These funds have been, for many years, the main and in a number of areas, the only source of funding for development investment⁷³. Specialists claim⁷⁴ that they are rather loosely related to the CEP objectives and their support for the development of low carbon economy is not strong enough. Instead, they indirectly contribute to the increase of emissions mainly because most of the funds support the development of transport infrastructure. This is an example of a lack of homogeneity or even contradiction between various trends of Europeanisation. Under the cohesion policy implemented in the years 2007-2013, the main instruments of support for the energy policy (including low carbon economy) has been the Operational Programme Infrastructure and Environment (OP IE) and the sixteen regional operational programmes (16 ROP). They have been designed mainly to address infrastructure objectives, concerning improvement of energy efficiency, energy security and RSE (Table 5). For these objectives, under those

⁶⁹ NFOŚiGW *na rzecz efektywności energetycznej*, NFOŚiGW 2010, p. 16.

⁷⁰ *Ibidem*, p. 20.

⁷¹ Examples of research programmes implemented in the years 2007-2010: Materials and technologies for hydrogen management development basing on the industrial process gases; Chemistry of prospect processes and byproducts of coal conversion; Supercritical coal-fired power units; Modern technologies for the energy use of biomass and bio-degradable waste. See *Ocena realizacji Polityki Energetycznej od 2005 roku*, Ministry of Economy, Warsaw 2009, p. 16.

⁷² A similar view: *Zielona Księga Narodowego Programu Redukcji Emisji Gazów Ciepłarnianych*, p. 16.

⁷³ T. G. Grosse (2006): *An Evaluation of the Regional Policy System in Poland: Challenges and Threats Emerging from Participation in the EU's Cohesion Policy*, European Urban and Regional Studies, vol. 13, no. 2, 151-165.

⁷⁴ A. Kassenberg (2009).

programmes, only less than 2.5% of all cohesion policy funding in Poland has been allocated. Just to compare, for the development of transport infrastructure, during the same time, more than 24% of funds have been allocated. Moreover, the European policy does not sufficiently develop low carbon technologies or support their application by business. Thus, it only marginally contributes to the achievement of one of the main goals of the CEP, namely, the promotion of innovative technology within the framework of “green” economy⁷⁵. This is a serious problem of cohesion funds, which fail to sufficiently stimulate the development of innovative and competitive economy in the more slowly developing countries of Central Europe⁷⁶. As a result, the support from the cohesion policy (under its current investment direction) is definitely insufficient when set against the needs of the development of low carbon economy. If one assumed that the adaptation to the CEP requirements in Poland entails investment in the order of 100 billion euro then the European Union support available under the cohesion policy will amount to less than 2% of this sum.

Table 5. Selected low carbon economy implementation activities in relation to the priorities of economic policy (2007-2011)⁷⁷

Main priorities of economic policy	Advanced technologies	Competition on energy market	Energy efficiency	Energy security	Development of RSE	Development of nuclear energy
Development of innovative economy	<ul style="list-style-type: none"> - development of energy technologies (OP IEC) (3); - launching of a series of national research programmes (MNiSzW) (8). 	<ul style="list-style-type: none"> - implementation of EU directives on electricity market (2003/54/EC) and natural gas market (2003/55/EC); - process of consolidation of energy companies; - freeing of energy prices 	<ul style="list-style-type: none"> - setting the national target for energy saving (2007); - analysis of energy efficiency of individual branches of economy (Ministry of Economy); - effective use of energy by companies (NFOŚiGW: 500 million euro in the years 2011-2016) (4). 		<ul style="list-style-type: none"> - regulation of RSE, including an obligation to buy RSE by energy suppliers, introduction of discounts for connection of RSE to the power grid. 	<ul style="list-style-type: none"> - negotiations concerning the purchase of technology for nuclear energy sector from a foreign partner.

⁷⁵ See Analysis of options to move beyond 20% greenhouse gas emission...; A Roadmap for moving to a competitive low carbon economy In 2050, pp. 5, 12; Y. Hongyuan (2009): Two Logics of Climate Change Games: Environmental Governance and Know-How Competition, w: A. Gradziuk, E. Wyciszewicz (red.): Energy Security and Climate Change. Double Challenge for Policymakers, Polish Institute of International Affairs, Warsaw, 125-152.

⁷⁶ More: T. G. Grosse (2010): *EU Cohesion Policy and the peripheries of the New Member States*.

⁷⁷ Based on: National Strategic Framework Reference 2007-2013; *Ocena realizacji polityki energetycznej od 2005 roku [Assessment of the implementation of energy policy since 2005]*, Ministry of Economy, Warsaw 2009; National Action Plan for Energy Efficiency 2007, Warsaw 2007; National Fund for Environmental Protection and Water Management: <http://www.nfosigw.gov.pl> including: *NFOŚiGW na rzecz efektywności energetycznej*, NFOŚiGW 2010.

		(2007) then restoring the regulation of prices for individual consumers (2008).				
Development of infrastructure	- planned extension of the coloured certificates scheme (adding orange certificates to support CCS technology).		<ul style="list-style-type: none"> - introduction of a coloured certificates scheme, especially the planned introduction of the so called white certificates; - implementation of the EU directive (2004/8/EC) on supporting cogeneration; - implementation of EU directive (2002/91/EC) on the energy performance of buildings; - development of infrastructure for improving energy efficiency, cogeneration and improvement of energy management (OP IE: 324.5 million euro*(1); 16 ROP: 118,5 million euro*(2)); - improvement of energy efficiency in public buildings (NFOŚiGW: 792 million euro in the years 2010-2013); - improvement of energy efficiency in housing (FTiR: approx. 38 million euro in 2010) (5). - thermomodernisation of buildings and district heating networks (GEF: 	<ul style="list-style-type: none"> - development of electrical TEN-E (OP IE: 213,9 million euro*); - development of natural gas TEN-E (OP IE: 206 million euro*). - starting the construction of a LNG terminal at Świnoujście; - cooperation with the Vysehrad Group states on the EU energy policy and new TEN-E investment projects. 	<ul style="list-style-type: none"> - introduction of a green certificates scheme; - development of wind RSE (OP IE: 172 million euro*; 16 ROP: 44.4 million euro*); - development of solar RSE (OP IE: 12.9 million euro*; 16 ROP: 45 million euro*); - development of biomass RSE (OP IE: 202 million euro*; 16 ROP: 61.6 million euro*); - development of other RSE (OP IE: 43 million euro*; 16 ROP: 83.7 million euro*); - loans and subsidies for development of RSE (NFOŚiGW: 670 million euro in the years 2011- 	<ul style="list-style-type: none"> - adoption by the government of a set of laws under the nuclear energy programme (2011).

			Global Environmental Facility: approx. 37 million euro) (9).		2013).	
Development of human capital			- environmental education, including energy efficiency (NFOŚiGW: 48 million euro in the years 2011-2013).			

* In the cohesion policy programmes only the EU funds contribution has been listed, without the domestic matching funding.

- (1) PO IE: Operational Programme Infrastructure and Environment (EU Cohesion Policy in the years 2007-2013).
- (2) 16 ROP: 16 Regional Operational Programmes (EU Cohesion Policy in the years 2007-2013).
- (3) PO IEc: Operational Programme Innovative Economy (EU Cohesion Policy in the years 2007-2013).
- (4) NFOŚiGW: National Fund for Environmental Protection and Water Management.
- (5) FTiR: Thermomodernisation Fund.
- (6) RSE: Renewable Sources of Energy.
- (7) TEN-E: trans-European energy networks.
- (8) MNiSzW: Ministry of Science and Higher Education.
- (9) GEF: Global Environmental Facility.

Conclusions and recommendations

The economic crisis (2008-2010) has made the economic competition more fierce, both on the common market and globally. At the same time, it has intensified the activity of politicians, aimed at finding competitive advantage for European businesses. A good example of such a trend is the EU climate policy. One of its goals is to build economic competitiveness in the area of low carbon technologies, and especially to use the existing potential of some European economies with respect to technological advancement and access to clean energy sources. The rules of the CEP produce unequal consequences for individual Member States. They bring benefits to the better developed countries with technological advantage, and, at the same time, they impose excessive cost burden on the less developed economies based on coal, thus decreasing their cost-effectiveness. This way, European regulations may support competitiveness of some EU Member States on the common market, and simultaneously weaken others. This is of great importance for employment and the rate of economic growth in individual countries.

The phenomenon is confirmed by earlier research on Europeanisation⁷⁸. Its results show that European regulations and policies have strong impact on national economic policies and on the institutional system of the economy (the national model of capitalism⁷⁹). This impact varies depending on local conditions. Wherever the EU policy is not consistent with the local logic of the economic system, it leads to serious costs, decreasing of the system's internal rationality of operation or to its gradual de-institutionalisation. This is also an example of individual states using European policies to maximise their benefits on the common market, among others, through such design of EU regulations that will strengthen their national competitive advantage and reduce the possible costs of introducing the EU law⁸⁰. This requires the national governments to be politically active on the EU forum and to ensure close coordination with the national development policy.

An additional difficulty resulting from Europeanisation are the serious constraints concerning granting of public aid by national governments. EU regulations do permit granting of aid to the sectors susceptible to high cost of electricity or transfer of production abroad. The provisions, however, are not very precise and, what is more, the Polish state has limited capability to grant such support in a situation of growing public debt. On the other hand, the cohesion policy funding, designed for the less developed Member States, only to a limited extent supports the development of low carbon economy. In particular, it is not good at stimulating the development of "green" economy where competitiveness is based on the use of modern technology.

The Europeanisation processes related to climate policy are particularly disadvantageous for Polish economy. Its competitiveness is based primarily on low production costs and at the same time, the main source of energy is a high-emission type of fuel – coal. Thus, a consequence of implementing the CEP in Poland and of pursuing the current Polish economic model may be the escape of some industries outside the country, also to other EU Member States. Another possibility is the reduction of the GDP growth rate and increase of unemployment. In this situation, it is a challenge for the Polish government either to mitigate the EU CEP or to fundamentally change the model of development for the national economy.

This will require a coherent long-term economic policy and intensive political activity on the EU level. Whereas currently in Poland there exists neither a long-term strategy for national development nor a policy for the development of low

⁷⁸ M. Höpner, A. Schäfer (2007): *A New Phase of European Integration. Organized Capitalism In Post-Ricardian Europe*, MPIfG Discussion Paper 07/04, pp. 8, 22.

⁷⁹ P. Hall, D. Soskice (ed.) (2001): *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage*. Oxford – New York: Oxford University Press, 1-44; B. Amable (2003): *The Diversity of Modern Capitalism*, Oxford – New York: Oxford University Press, 103-114, 176; J. Alber (2006): *The European Social Model and the United States*, *European Union Politics*, vol. 7, no. 3, 393-419.

⁸⁰ See M. P. Smith (2005): *Germany's Quest for a New EU Industrial Policy: Why it is Failing*, *German Politics*, vol. 14, nr 3, 315-331; H. Callaghan, M. Höpner (2005): *European Integration and the Clash of Capitalisms: Political Cleavages over Takeover Liberalization*, *Comparative European Politics*, nr 3, 307-332.

carbon economy. All the action undertaken in this area takes place in response to the initiatives of European policies and is, to a great extent, limited to implementing EU regulations. Thus, what happens is the gradual, although delayed, implementation of the CEP requirements, yet without proper support for national enterprises. What is also missing is such a re-orientation of the investment processes that would strengthen the competitiveness of national economy. Consistently with the philosophy adopted under the CEP – the policy of the Polish government shifts most of the costs related to adapting the national economy to the Package requirements to the market. Business is supported by the state budget only to a very limited extent. The activities of individual public bodies focus on the implementation of narrowly defined sector strategies and are not properly coordinated, either at the planning or at the implementation stage. Additional difficulty is the lack of continuity in the policy of the state by subsequent governments.

Another problem is the weakness of the political activity of the Polish government at the EU level. Whereas in the context of European integration it is an indispensable element of an effective economic policy of every Member State. The results of this report show that the political activity of subsequent Polish governments in this respect is passive and severely delayed. Inter-ministerial coordination fails, which is a result of the poor system of EU policy management by Polish government. The coordination is mostly carried out by the Ministry of Foreign Affairs⁸¹. Whereas examples of other countries prove that it is much more effective if the responsibility for coordination lies with the chancellery of the head of the government⁸². The weakness of Polish European policy is partly a result of the lack of the proper national economic policy. As a result, Poland adopts a reactive approach towards initiatives originating at EU institutions. This may be shown by a number of strategic documents which are drafted almost only for the purpose of the implementation of EU policies.

In connection with the EU climate policy, Poland faces a challenge of a fundamental change of its economic model – to low carbon economy based on innovation and environment-friendly technologies. This requires the preparation of a long-term policy of the development of low carbon economy. It is necessary to make an in-depth analysis and diagnosis of the condition of Polish economy as well as assess the consequences of implementing the CEP for individual sectors and regions. This policy cannot be limited only to the implementation of the Package requirements but it must, first of all, aim to strengthen the competitiveness of the national economy. It should not involve only the energy sector but must also cover other sectors of the economy⁸³. The goal of such a policy should be to support development research and the development of low carbon technologies⁸⁴, as it is one of the main priorities of the EU climate policy. For this

⁸¹ See *Act dated 27 August 2009 on the European Affairs Committee*, Journal of Laws of 2009 no. 161, item 1277.

⁸² S. James (2010): *Adapting to Brussels: Europeanization of the core executive and the 'strategic projection' model*, Journal of European Public Policy, 17:6, 818-835.

⁸³ An interview with D. Kulczycka (PKPP Lewiatan), March 2011.

⁸⁴ An interview with Prof. K. Żmijewski (Secretary General of the Public Board for National Programme of Emissions)

purpose, a strong National Innovation Scheme should be created, with implementation of low carbon economic policy of the government as one of its priorities.

Government policy should support energy efficiency and investment projects focusing on the development of renewable sources of energy⁸⁵. In both cases, there is a relatively big potential for such activity in Poland. Experts⁸⁶ recommend, among other solutions, a reform of the coloured certificates scheme so that it could support not only the producers but, first of all, those who invest in the new energy generation capacity. In addition, the certificate scheme should be more effective in reducing the price of energy⁸⁷. The existing administrative barriers to the development of RES should be removed, mechanisms of public-private partnership in this area should be developed and technological solutions implemented in microscale should be supported (such as solar panels, biogas plants, etc.)⁸⁸. The government should, to a greater extent, encourage people to save energy, also by imposing an obligation on the public sector to increase energy efficiency (e.g. in public buildings)⁸⁹. The development of energy market should be supported, also through construction of cross border interconnectors which will make it possible to benefit from the offer of foreign energy producers⁹⁰. In addition, public aid should be granted (within the scope of the EU law) to sectors at risk of production transfer abroad. The point is to support the necessary investment that the companies need to make. An important element of the government policy should be to divide the funds acquired under the community emissions trading scheme, which, under the EU law, may be allocated, for example, to the development of RES, energy efficiency and CCS installations. These funds should not be used as a remedy to excessive deficit or public debt. A system of “green” public procurement could also be developed, so that the criteria of energy efficiency and use of RSE were taken into account⁹¹. The state’s economic policy should also be more focused on developing the services sector and the development of human resources for the low carbon economy.

Appropriate institutions should be built for effective coordination and implementation of the government’s low carbon policy. As early as at the planning stage, the low carbon economy strategy could be used for proper coordination of activities between sectors and for binding this strategy even more to the main goals of the government’s economic policy. It would thus become a “second-level” strategy, coordinating the leading national development strategy with the sector-

Reduction), March 2011, an interview with D. Kulczycka (PKPP Lewiatan), March 2011.

⁸⁵ An interview with Prof. K. Żmijewski (Secretary General of the Public Board for National Programme of Emissions’ Reduction), March 2011; an interview with A. Kassenberg (Institute for Sustainable Development), March 2011.

⁸⁶ An interview with M. Sobolewski (Bureau of Research, Chancellery of the Sejm), March 2011; an interview with Prof. K. Żmijewski (Secretary General of the Public Board for National Programme of Emissions’ Reduction), March 2011.

⁸⁷ An interview with A. Kassenberg (Institute for Sustainable Development), March 2011.

⁸⁸ An interview with A. Kassenberg (Institute for Sustainable Development), March 2011.

⁸⁹ An interview with M. Sobolewski (Bureau of Research, Chancellery of the Sejm), March 2011; an interview with A. Kassenberg (Institute for Sustainable Development), March 2011.

⁹⁰ An interview with M. Sobolewski (Bureau of Research, Chancellery of the Sejm), March 2011; an interview with D. Kulczycka (PKPP Lewiatan), March 2011; an interview with D. Ledworowski (Public Board for National Programme of Emissions’ Reduction), March 2011.

⁹¹ An interview with D. Kulczycka (PKPP Lewiatan), March 2011.

specific documents. An appropriate system is also needed for implementation, monitoring and evaluation of national development policies. The system of institutions created for the implementation of the cohesion and the regional policies could be used for this purpose. I have in mind here, for instance, application of territorial (voivodship) contract instruments or regional operational programmes implemented by voivodship authorities. Using the instruments of regional policy to implement the low carbon economic policy of the government is driven by the specific territorial nature of the country, which requires flexible instruments. In addition, a number of activities aimed at improving energy efficiency or development of RES may be successfully carried out on the regional or even local scale. Appropriate incentives should be introduced for local governments to encourage their greater involvement in action for low carbon economy⁹². Another instrument may be the above mentioned innovation policy of the government and the creation of a strong National Innovation Scheme. The activities under the Scheme may be also partially implemented in a decentralised way, with the support of voivodship authorities. A reform of the public finance system is absolutely necessary in order to increase the pool of funds for investment related to low carbon policy⁹³. Other funding for this policy may come from the Community Emissions Trading Scheme and the Green Investment Scheme⁹⁴.

Another challenge is to improve the political activity of the Polish government at the EU arena, by taking advantage of the Polish Presidency in the EU (in 2011), in order to play a more active part in developing detailed solutions implementing the CEP. Experts agree⁹⁵ that at the current stage of the European debate, there is little chance to re-negotiate the CEP to make it more beneficial for Polish economy. Nevertheless, they suggest that certain action should be taken, for instance, to strive for reducing the cost of emission allowances, including imposing limits on the purchase of allowances by entities from outside the EU or by investment-speculation funds. They also suggest that the unused parts of the allocation could be transferred from non-ETS area to EU ETS or outside the EU (the so called *flexible trading & offset model*)⁹⁶. It is a challenge for Polish diplomacy to participate in the negotiations over the future of EU policy after the year 2020 related to the road map for competitive and low carbon economy⁹⁷. The active participation of the government in the works on the details of the European industrial policy referred to in "Europe 2020" may be of great importance. In addition, the EU cohesion policy should be re-oriented towards supporting low carbon economy objectives, and, especially, the development of low carbon technologies and their economic application in the least developed EU Member States⁹⁸. Unfortunately, such tasks

⁹² An interview with T. Chruszczow (Ministry of Environment), March 2011.

⁹³ See T. G. Grosse (2010): *Bariery dla skoku cywilizacyjnego Polski 2010-2030*.

⁹⁴ See footnote 76.

⁹⁵ An interview with A. Kassenberg (Institute for Sustainable Development), March 2011; an interview with M. Sobolewski (Bureau of Research, Chancellery of the Sejm), March 2011.

⁹⁶ See Z. M. Karaczun, A. Kassenberg, M. Sobolewski (2009), s. 46-47; K. Żmijewski (2011), p. 5.

⁹⁷ *A Roadmap for moving to a competitive low carbon economy In 2050*; an interview with A. Błachowicz (Ministry of Environment), March 2011.

⁹⁸ An interview with A. Kassenberg (Institute for Sustainable Development), March 2011; an interview with D. Ledworowski (Public Board for National Programme of Emissions' Reduction), March 2011.

feature neither in the Polish government's position on the future of the cohesion policy after 2013⁹⁹, nor in the preliminary priorities for the Polish Presidency of the European Union Council¹⁰⁰.

⁹⁹ See *The position of the Government of Poland on the future of the cohesion policy after 2013*. „*Polityka Spójności jako skuteczna, efektywna i terytorialnie zróżnicowana odpowiedź na wyzwania rozwojowe Unii Europejskiej*”, adopted by the Council of Ministers on 18 August 2010.

¹⁰⁰ Preliminary priorities of the Polish Presidency approved, <http://prezydencjaue.gov.pl>, 20.03.2011.

Report for Institute of Public Policy Reserach,
Low Carbon Industrial Strategy Project



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