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CLIMATE POLICY ACHIEVEMENTS IN EASTERN EUROPEAN COUNTRIES

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Наведено огляд політики в області зміни клімату в країнах Східної Європи – Білорусі, Болгарії, Російській Федерації, Румунії, Словаччині, Угорщині та Україні. Дано короткий опис існуючих механізмів регулювання викидів парникових газів та можливостей їх подальшого розвитку.

Ключові слова: кліматична політика, зміни клімату, торгівля квотами на викиди, проекти спільного впровадження, відновлювані джерела енергії.

Приведен обзор политики в сфере изменения климата в странах Восточной Европы – Беларуси, Болгарии, Российской Федерации, Румынии, Словакии, Венгрии и Украине. Дано краткое описание существующих механизмов регулирования выбросов парниковых газов и перспектив их дальнейшего развития.

Ключевые слова: климатическая политика, изменения климата, торговля квотами на выбросы, проекты совместного осуществления, возобновляемые источники энергии.

The article focuses on climate policy achievements of Eastern European countries (Belarus, Bulgaria, Hungary, Romania, Russian Federation, Slovakia and Ukraine). The analysis of existing framework as well as possible ways of its further development is presented.

Key words: climate policy, climate change, emission trading, Joint Implementation, renewable energy sources.

Introduction. The United Nations Framework Convention on Climate Change (UNFCCC) [1] sets an overall framework for intergovernmental efforts to tackle the challenge posed by climate change. It recognizes that the climate system is a shared resource whose stability can be affected by anthropogenic emissions of carbon dioxide and other Greenhouse Gases (GHG).

The Kyoto Protocol is an international agreement linked to the UNFCCC [2]. Its major feature is that it sets binding targets for 37 industrialized countries for reducing GHG emissions. This amounts to an average of 5 % against 1990 levels over the five-year period 2008–2012. The Kyoto Protocol provides three types of flexible mechanisms to reduce GHG emissions: Joint Implementation (JI), Clean Development Mechanism (CDM) and International Emission Trading (IET). JI refers to the projects to be implemented between two or more developed countries, whereas CDM refers to the activities between developed and developing countries. Due to the different abilities of the host and buyer countries to comply with the UNFCCC reporting requirements, Marrakech Accords set two tracks for JI:

• Track 1 for countries that can fully account for their GHG emissions and movements of units in their registry. It allows the host country government to decide which projects qualify and issue *Emission Reduction Units* (ERUs) without third party interference.

• Track 2 requires projects to be evaluated by the Joint Implementation Supervisory Committee supported by the UNFCCC Secretariat and allows implementing JI projects when Track 1 eligibility criteria are not met [3].

The Compliance Committee of the Kyoto Protocol decided which countries are eligible for Track 1 and/or Track 2, based on the reports by the international expert teams, that check the fulfillment of the eligibility criteria set out by the Marrakech Accords. After long process, all Eastern European countries are eligible for both tracks of JI [4].

The slow development of JI institutions on the national levels was one of the reasons of JI late start. The late start combined with a short crediting period resulted in a mechanism virtually running out of time: one to two year lead times make it close to impossible for projects to receive up to 2012 sufficient credits to justify investors' interest. During the last two years this has forced the majority of project developers to focus mainly on large scale high-revenue projects in the energy sector [3].

The decrease of JI projects is also caused by the fact that the host countries joining the European Union (EU) have to implement the acquis communautaire, transposing the EU law to national legislation. As the acquis communautaire introduced EU environmental standards at the level of business-as-usual, many potential projects became non-additional. In particular, the EU standards for landfills and large combustion plants have direct impact on the feasibility of JI in the respective sectors.

Moreover, the opportunities for projects within EU countries were significantly limited by the introduction of the EU Emissions Trading Scheme (ETS) [5]. The EU ETS within Phase II (2008–2012) is a Kyoto compliant market, in which each European Union Allowance (EUA) is backed by an Assigned Amount Unit (AAU). Thus, the implementation of Phase II meant that the projects that were located at an EU ETS installation or were affecting emissions of an EU ETS installation could have led to double counting of their emission reductions through both ERUs and EUA (AAU), and, therefore, had to be regulated separately by the European Commission [6]. The complicated rules combined with the significant difference between the prices of EUAs and ERUs have almost stopped the development of projects in the EU ETS sectors.

In the non-ETS sectors, such as landfills, funding for implementing environmental standards may be attracted by selling AAU surplus through the Green Investment Scheme (GIS). A GIS directs revenues from trading surplus allowances to environmentally related purposes. Thus, a GIS could finance a range of activities from capacity building ("soft greening", usually limited to 5% of the whole amount) to large-scale emission reduction projects ("hard greening"). The GIS appeared to provide significant support to JI-like projects, whose implementation is difficult after

joining EU ETS. The GIS is also popular among countries that are trading their AAUs surplus, but are not EU members.

Due to available surplus of allowances or absence of sharp need for emission reductions, Eastern European countries do not exhibit interest in implementing CDM projects and receiving certified emission reductions (CER).

Climate policies within EU Eastern European Countries. All EU countries are the parties of UNFCCC and Kyoto Protocol. The policies are implemented on both national and international level. The national policies are simultaneously an integral part of EU policies, which can be considered as the first step of international activities. Within environmental policies, EU sets the target to achieve by 2020 at least a 20 % reduction of GHG compared to 1990 levels, 20 % of renewable energy from final energy consumption, and 20 % increase of energy efficiency compared to 2005 levels [7]. This pack of measures is widely known as 20/20/20.

All contemporary Eastern EU member states passed a long process of political and economic transition in the early 1990s which led to the significant reduction of GHG emissions and increase of energy efficiency of the whole national industry. Actually, these reductions are: 46,8 % for Bulgaria, 25,4 % for Hungary, 31 % for Poland, 46 % for Romania and 32 % for Slovakia in relation to the base year [2, 8].

Usually, environmental ministries are responsible for the preparation and reporting of the annual inventories of GHG emissions, as well as for the formulation and implementation of the policies and measures to mitigate climate change. Other ministries, especially the energy-related ones, may have many common activities with their colleagues within climate policies in the frame of special programs. These activities aim at reducing GHG emissions, as well as decreasing the environmental, economic and social effects of climate change. A good example of programmatic approach is the adoption of the National Climate Change Strategy in Hungary.

Following the adoption of the EU climate and energy package, all the countries agreed to increase their GHG emissions in non-ETS sectors (e.g. buildings, road transport and farming) within only 10–20 % by 2020 compared to 2005 levels.

The Eastern EU countries expressed strong interest in the development of JI projects. Simultaneously, the countries had to comply with EU environmental standards. This led to attempts of attracting investments in clean technologies to the sectors not covered by EU ETS. Most of the current JI projects are implemented in the field of power generation from renewable energy (wind, biomass, landfill gas, etc.), cogeneration and replacement of retrofit equipment for energy production, household gasification and others. Significant work remains still to be performed, in order to reduce the energy intensity of local industry, and this makes these activities attractive within JI mechanism.

In order to be able to issue allowances, every JI project has to pass the final determination. Most of the projects passed according to the Track 1 procedure. Only one project from Bulgaria passed according to Track 2. Slovakia submitted for determination only one JI project.

Due to timely work, Hungary was the first country that concluded an AAU deal under a GIS, which was established in 2007. Poland signed two deals with Spain and

a private Japanese investor in 2009. In Bulgaria, Romania and Slovakia, draft GIS legislation has already been developed but still needs approval by national authorities. Generally, IET is not very active due to a variety of reasons. The combination of the demand for allowances on international carbon market and the requirements for the national GIS programmes are the most limiting factors for the traded amounts of AAUs [9].

Among the priority areas for GIS investments are those which are not attractive for JI: increasing the use of renewable energy, further develoment of clean coal technologies, fuel switch, increasing the energy efficiency of buildings and the effectiveness of district heating systems, promoting the construction of low energy use buildings, modernisation of lighting and public lighting systems, replacing inefficient household appliances with environmental friendly ones, promoting the establishment of carbon sinks, realization of emission reductions in the transport sector [9]. Actually, the projects not fitting for all JI requirements can be implemented with GIS investments.

Following the adoption of the EU energy package, the countries have committed to achieve by 2020 higher shares of energy from renewable sources in gross final energy consumption: Romania – 24 % (from 18 % in 2005), Bulgaria – 16 % (from 9 %), Poland – 15 % (from 7 %), Slovakia – 14 % (from 7 %) and Hungary – 13 % (from 4 %) [8]. The first place of Romania in the list is due to the wide use of large-scale hydro plants. Within the assigned goal, it is feasible to develop further local wind potential as well as small hydro power plants. High interest also exists in the construction of photovoltaic facilities but the current expensive and low efficient technology limits its wide penetration. Particular attention and support also needs the technology of solar heating of water for domestic purposes.

In the national level Hungary, Poland and Romania developed Energy Policy strategies. The main objectives of these documents are the energy efficiency and safety based on each country's natural resources and supply diversification, the increased share of energy production from *Renewable Energy Sources* (RES), the development of competitive fuels and energy markets, and the reduction of energy-related negative environmental impacts. Furthermore, for the development of RES, Poland launched a scheme to construct at least one agricultural biogas plant in each municipality [8]. Additionally, the new Energy Efficiency Action Plan of Hungary has set an annual target of 1% energy savings for the period 2008-2016. The measures include energy efficiency labeling of gas and electrical equipment, energy audits of buildings, information campaigns, and financial support for reconstruction to increase energy efficiency in households and industry. Within the climate friendly activities, Bulgaria plans to demonstrate a *Carbon Capture & Storage* (CCS) project in Maritza-East, in order to allow the utilization of rich lignite resources of that basin, and the construction of a new natural gas thermal unit at Varna.

Slovakia's focus on climate and energy policy development resulted in a mixed performance. Several policies were introduced to address climate change, but their implementation is progressing slowly and the energy safety concerns led to the

approval of a new coal-fired power plant, which will increase total GHG emissions considerably. Within the RES development target, the government approved the Action Plan for Biomass Use for the period 2008-2013 and a proposal for increased use of biofuels. However, the implementation of programmes and actions in this area are lagging behind [8].

Belarus. Like all post-Soviet countries, Belarus decreased its GHG emissions. In 2005, the GHG emissions were 40 % lower than in 1990. Currently, Belarus is not a member of Annex B of the Kyoto Protocol, and, therefore, has not been allocated AAUs to trade. As a result, the country is not allowed to host JI projects. However, the Belarusian government has expressed its keen interest on gaining the status of an Annex B party and hosting JI projects. An amendment to the Protocol adding Belarus to Annex B was adopted in 2007; however, 75 % of the parties to the Kyoto Protocol must ratify the amendment to make it enter into force. Due to political and institutional problems this seems unlikely to happen in time for Belarus to host JI projects during the first commitment period (2008–2012). Nevertheless, Belarus has developed domestic institutions to comply with the Kyoto requirements as well as a portfolio of potential JI projects. The option of hosting projects outside the Kyoto Protocol to produce Voluntary Emission Reductions (VERs) remains, however, the case of Belarus is indeed relevant for the future of the Kyoto Protocol [3].

According to the World Bank estimations, the wide-scale use of renewable options such as wind, solar, and geothermal seems to be less attractive from an economic standpoint because of Belarus' geographical and geological conditions. Therefore, priority should be given to expanding the use of wood, peat, and hydropower resources for small-scale energy generation.

Russian Federation. Currently, the Russian economy is considered to be in transition to the model of market economy. This process led to the significant drop of GHG emissions through the whole country in the 1990s. In 2005, Russia's GHG emissions were 33 % lower than the base year level, and much better than its Kyoto target to maintain the level of 1990 emissions for the period 2008–2012. The nation has a total AAU amount of 16,6 billion tCO2eq, with a commitment period reserve of 10,6 billion tons. The Russian government has repeatedly indicated that it does not intend to flood the market with AAUs, as this may lead to a strong reduction of the price [9].

The process of establishing a JI project approval system in Russia has been prolonged. The task was established by the National Action Plan in September 2004. The main framework for the project approval was adopted in May 2007, however, major gaps still remained in this legislation, and further legal development was required [3]. Recently, by the end of 2009, progress in this domain was made by the adoption of Climate Doctrine and Governmental Directive 843, dealing with JI issues. According to this directive, the Ministry of Economic Development will be the focal point for JI activities, while the state owned Sberbank will be the "operator of carbon units". With regard to GIS, Sberbank is the key institution to prepare deals and to negotiate with possible buyers. There are several reasons why Russia has been slow in developing a GIS. One of them is that the government is interested in

extending the GIS into a post-2012 regime. Another reason is that the revenues from AAU sales are not of high priority for the country, compared to other far more lucrative business areas, such as oil and gas exports.

Russia has good chances to become one of the major JI hosting countries. Numerous projects are already in the UNFCCC JI pipeline. These projects were waiting the issuance of Letters of Endorsement and Letters of Approval from local authorities. Following the Directive 843, at the beginning of 2010, Sberbank had its first tender for approval of projects reducing GHG emissions under the JI-mechanism. 30 million tons carbon credits were available in this tender. Applications are evaluated on the three selection criteria (energy and ecological efficiency, technical and financial potential, economic and social impact of project), and the total score of the application will be computed by multiplying the three subscores. This tender, and probably also later tenders, will only consider energy, forestry, solvent usage, waste, and industrial projects, and will thus not cover fugitive emission projects [10].

The Energy Strategy (2003) of Russian Federation for the period up to 2020 outlines several main priorities, which can influence significantly future GHG emissions. They include an increase in energy efficiency, a reduction of the impact on the environment, sustainable development, energy development and technological development, as well as improved effectiveness and competitiveness. Significant emphasis is also put on the RES development; its share in national energy balance is very small, but there is considerable potential for renewable energy use. The most developed renewable energy sources in Russia are large hydro and geothermal energy, which is used for heating and electricity production in some regions of the Northern Caucasus and the Far East [11].

Ukraine faced a huge decrease of industrial production after the fall of Soviet Union. Due to this fact, between 1990 and 2007, the decrease of the GHG emissions was around 53%. The possibility to use Kyoto mechanisms is very attractive for Ukraine and its transitional economy offers many cost-effective ways to mitigate emissions, particularly in the industrial sectors.

The National Environmental Investment Agency (NEIA), a government body under the Ministry of Environmental Protection, is responsible for the country's compliance with the Kyoto Protocol. With regard to GIS, NEIA is responsible for the negotiations with buyers as well as for the design of the GIS under the government's supervision [9]. During 2009, there were AAUs sales deals with Japan and Spain. Among the priority areas for GIS investments are energy efficiency, district heating, and forest management. However, according to the contracts, the choice of projects strongly depends on the buyers' preferences. For the moment, despite the numerous projects being claimed, only very few have been identified and are suitable for GIS finance. Given these experiences it cannot be expected that Ukraine will sell a large amount in the short term; a few medium-size deals are still possible.

The Ukrainian position among JI hosting countries is very good due to the existence of a functional project approval system. The other important advantage of Ukraine is the status as a non-EU country: the double counting rules do not apply,

and the country is not subject to the same EU environmental restrictions as are the new EU member states. Since it has taken so long to get JI operational in Russia and most other potential host countries subject to EU rules, Ukraine was seen by many project developers as the only realistic option for engaging in JI projects [3]. All these facts helped the country to be on the top of Point Carbon JI hosting countries list for more than a year [12]. Also, Ukraine was the first country to receive final determination for a JI project under the Track 2 JI in March 2007 [2].

The coalmine methane and industrial energy saving, especially from the steel and cement sectors, are the dominant types in the Ukrainian project portfolio. Those projects for the modernization of district heating systems, which are not eligible for JI, are among the options to be implemented with the revenues from AAUs sales under GIS.

The Energy Strategy of Ukraine to 2030, adopted in 2006, provides a comprehensive overview of the current situation in the energy sector. The key policy objectives include reducing import dependence and improving efficiency. In the document, the projections are mostly supply-oriented, without detailed analysis of demand trends. The strategy projects increased share of coal and nuclear in Total Primary Energy Supply (TPES) and decreased share of gas. The RES share in energy balance will increase, but not significantly. However, even the RES projected share of 4,33 % for the year 2020 and 10,41 % for 2030 looks much better than less than 1 % in 2005. The use of biofuels is promoted within RES biomass measures [13]. In addition, Ukraine adopted a large number of programs, laws and regulations related to renewable energy. However, the impact of these measures has been rather weak because of a lacking comprehensive policy and enforcement mechanisms.

Conclusions

To summarize, all Eastern European countries are implementing climate policies both on national and international level. Some are already very successful, some are not.

The EU member states, in addition to Kyoto Protocol, have to comply with Community legislation. Within EU, an ambitious target is set: to achieve a 20 % GHG reduction (compared to 1990 levels) and 20% renewable energy by 2020 including a 10 % biofuels target with concrete proposals of how the efforts could be shared among the member states. The introduction of the EU ETS and EU environmental standards with some other measures, despite all the difficulties led to direct reductions of GHG emissions. The EU ETS limited attractiveness of JI within member states, but facilitated the trading of emission allowances and priced them with a higher value than under JI. A large number of activities in this region related with renewable energy, mainly small hydro, wind and biomass, are also supported by the objectives of the new member states. However, the great majority of the projected emission reductions are focused on the modernization of the combined heat and power plants and in the industry.

The proposals of Russia and Ukraine to decrease their GHG emissions by 20 % by 2020 were heavily criticized by the world community, as it would actually mean

the possibility of an increase of emissions or AAUs further trading instead of real cuts.

As for the Kyoto Protocol mechanisms, almost all the countries, except Belarus and Slovakia, are involved in JI projects activities and carbon trading. Ukraine, Romania and Poland are ranked among top JI hosting countries by Point Carbon [12]. Ukraine and Russia will continue to attract JI projects because many cost-effective ways to mitigate emissions, especially in industrial sectors, still exist.

The significant surplus of AAUs available forced countries to develop GIS in order to be more attractive to the buyers. Currently, Hungary, Poland and Ukraine are involved in carbon trading. The received revenues are directed to activities supporting environment related measures according to the national needs.

The Eastern European countries often indicate that the main priority of the energy sector, which is the key GHG source in the region, is the modernization and decrease of carbon intensity of the industry. Simultaneously, it is a painful issue for countries like Bulgaria, Poland, Slovakia and Ukraine, which traditionally rely on lignite and coal for their energy generation. Among others, the options include further switch to gas units, an increased share of RES in electricity production, as well as further energy efficiency improvements in the power sector and in the end-use sectors of the economy.

To conclude, climate policy may be considered as an essential part of measures on the path of sustainable development that is needed not only in the region, but also in the whole world. In order to effectively address the defined targets, further research must be performed. It is crucial to continue to build the architecture of effective climate governance on local, national and international levels and to enforce it with the relevant legislation.

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