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Article info:
Received 07.09.2015
Accepted 15.11.2015

UDC – 332.05

REGULATION AND TRADING WITH GREEN HOUSE EFFECT GASES AND ADVANTAGES OF SERBIA'S ENTRY IN THE EMISSION MARKET

Abstract: *Modern tendency to make flexible mechanism in order to stop climate change developed new kind of market based on emission trading system. Market as regulatory mechanism is capable to stop further pollution of the environment and achieve primary goal in allocation of emission permits between those who need them and those who possess them. Modern prediction are based on opinion that carbon markets will have great impact on global economy in near future. However today his influence is miserable comparing to some other markets, even though there are several very influential trading projects that are established inside EU, one of them is EU ETS. European Union trading scheme is not only important for developed countries, but also for those who have aspiration to become part of EU. Therefore basic purpose of this work is to represent principles of Carbon trading market, his function and historical development and connect them with possible advantages of Serbia's entry in the emission market.*

Keywords: *CO2 market, emission allowances, emission permits, green house effect gases, EU ETS, CDM projects, Sustainable development, Carbon trading market*

1. Introduction

At the beginning of the 19th century and during the 20th century, mankind has experienced fast technological development. Conventional fossil fuels have become part of everyday needs and their consumption and exploitation have grown more and more every year. During first part of the 20th century, mankind has become very dependent on fossil fuels, regardless of

negative effects connected with the environment. Industrial demand for electricity production, heat energy and other types of production that involves combustion processes have impact on GHG emission and climate change. Therefore, the impact of anthropogenic sources on GHG gases has resulted in developing mechanisms that will be able to reduce GHG emissions without influencing future technological growth. All of these mechanisms are in direct correlation with sustainable development, especially in developed countries, where high level of public awareness about environmental protection has legalized these mechanisms.

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However, other developing countries who have issues with public finance and fiscal policy still do not have enough ambitions to enroll in these environmental protection projects. Low prices of fossil fuels have jeopardized the realization of these mechanisms. Many environmental protection agencies in developed countries couldn't stop large corporations in consumption of fossil fuels, and because of that, they made more flexible mechanism that ought to represent "win-win" solution. This flexible financial mechanism is based on the idea of making more profit by protecting the environment.

Financial mechanism have predicted market establishment that would regulate emissions of GHG gases, firstly CO₂, by buying lack of emissions or selling their reserves. Development of unique financial markets which function on cap and trade system has resulted in involving large number of multinational corporation, who have found

opportunity to efficiently diversify portfolio. By accepting responsibility for climate changes, EU was the first to get involved in implementation of sustainable development concept through emission trading mechanism. Unlike them, big and powerful countries like Russia, China and USA, Losonc (Losonc, 2005), were not ready to participate in this kind of program and they lost the opportunity to use cheap fossil fuels like oil and coal. In spite of their decisions, many multinational corporation located in previously mentioned countries, decided to participate in this trading scheme, while environmental protection is a side effect of their participation.

Basic goal of this work is to explain terms of emission trading markets, and represent history of it, with accent on volume and prices of emission permits and their connection with different kinds of financial instruments.

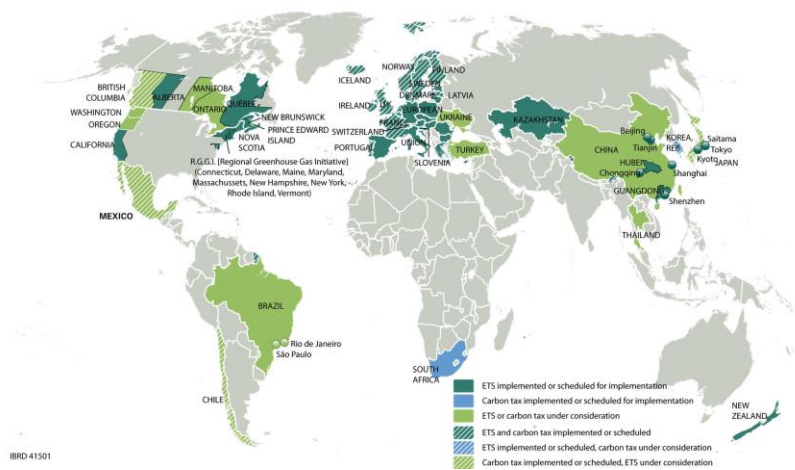


Figure 1. Countries involved in GHG trading in 2015

Figure 1 shows countries involved in GHG trading through EU ETS or other locals markets in 2015, (New climate economy report, 2015).

2. EU ETS

European emission trading scheme (EU ETS) is an international system and largest GHG emission trading scheme in the world. In order to explain it better, it is a program trading scheme gases with a greenhouse effect inside the EU. European emission

trading scheme is a key for European politics for dealing with climate changes and it is the most important program for reducing industrial emissions of greenhouse gases in EU. ETS as the first and the biggest international scheme for emission permits trading with a greenhouse gases, includes more than 11 000 power plants and industrial facilities in more than thirty countries around the world. The EU ETS covers up to 46% of European CO₂ emissions, Han *et al.* (2015). In addition to the 27 member states of the EU, some other countries have joined this program too, and those countries are Iceland, Liechtenstein and Norway. This program is mainly for corporations which produce CO₂ emissions activities from facilities such as power plants, oil refineries, steel mills, cement, glass factory, the production of bricks, ceramics, pulp, paper and paperboard. EU ETS has been working since 2005 and it still works on the principle of “Cap and trade”, which means that there is a cap or the upper maximum limit of the total authorization of emissions of greenhouse gases, which factories, power plants and others also can drop. In accordance with these limits companies receive emission units that may buy or sell mutual, and limitations on the total number of available quota ensure that quotas have some value established by the market. By the end of trading period, the EU ETS requires all firms covered by the scheme to submit their verified annual emissions report to the European Commission, in line with the Monitoring and Reporting Regulation (MRR), because otherwise they are threatened with large penalties, carbon taxes, Philip and Shi (2015). By reducing its emissions, the companies can keep unused permits for their future emissions or they can sell them to another company that lacks the permits. Every right on emission or permit is equivalent to one ton of CO₂.

First phase of program lasted from 2005 to 2007 and involved around 12 000 facilities, which caused around 40% of GHG emissions in the EU. In first and second

phases of the EU ETS, each member state drew up a National Allocation Plan (NAP) that fixed the national cap and determined the sectoral permit allocation, Martin *et al.* (2014). On the 1st of January 2005, a few of the EU countries were ready to start with program realization, Ellerman and Buchner (2008). During April 2006 price for the ton of CO₂eq was around 30 EUR per permit. However, last week of April 2006 was catastrophic for EU ETS. France, Czech, Holland, Spain and Belgium announced that amount of distributed permits is higher than total emission which is produced by each country. After announcing this information, prices dropped down in one day for 54 % from 30 EUR to 13,3 EUR per ton. In March 2007 permits were worthless with price of 0,1 EUR per ton. These transactions reached 5.97 billion USD in 2005, 15.2 billion USD in 2006, and 24.1 billion USD in 2007, thereby confirming the fact that the EU ETS represents the largest emissions trading scheme to date in terms of transactions, Chevallier *et al.* (2011).

The second phase lasted from 2008 to 2012 and the main objective was to correct the mistakes of the first phase and to expand the program. The three countries outside the EU, Liechtenstein, Norway and Iceland joined the program, and Clean Development Mechanism (CDM) and Joint Implementation were introduced, with the objective of investing in projects that reduce the emission of harmful gases in the environment, Betz and Sato (2006). In June 2012, due to the success of the implementation of EU CO₂ emission trading scheme it was decided that one unique international market would be much more efficient than the previous one. Over 30 000 registers were transferred from national to international unique database, which marked the beginning of the third phase. In this period, carbon dioxide emissions decreased by about 3%, or 50 million tons of CO₂ equivalent.

The third phase began in 2013 and will continue until 2020. The European Commission has proposed a number of changes relating to the planned reduction of quotas by 2020, so that the total volume of emissions will be lower which will increase the demand for permits and the growth of price. To absorb some of the permits surplus, the EU-ETS amendment, approved on July 3rd 2013 by the European Parliament, has introduced the so-called back-loading measure, Chaton *et al.* (2015). The first results were felt immediately after the introduction, when the price of individual quotas increased from 6.2 to 6.4 euros.

The fourth phase will be realized in the period from 2021 to 2030, as it was decided at the Council of Europe held on the 22nd January, 2014.

The stability of the market is to a large extent based on how the participating companies are configured to cope with the uncertainties inherent to the emissions trading scheme. Behaviour and attitudes among the participating companies not only have significance for the stability of the market but also for the efficiency of the emission trading scheme, Sandoff and Schaad (2009).

3. Division of the trading quota markets

Under the jurisdiction of the UN and by introducing the Kyoto Protocol, the market for trading permits CO_{2eq} was founded. Industrial countries, that is, developed countries, agreed, and later expected that they should reduce emissions of GHG by 5.2% compared to the average of 1990. After signing the Kyoto Protocol, governments of the countries which signed, took the responsibility in the implementation of the protocol. To ensure the realization of the foreseen plan, countries got involved in the trading market of quota emissions, and companies within them, under "compulsion" were included in this system. Such a market

is created under the influence of sovereignty and state coercion, and is called The Compliance Market. In addition to the above, companies are able to reduce emissions of greenhouse gases in developing countries using clean development mechanism (CDM), and in return to receive carbon credits or permits which they can sell on the market and therefore refund the invested. Projects under the CDM must be registered and approved by the competent authorities, also the certificate emission reduction (CER) must be accurately determined, which is equivalent to that approved credit, that is, newly acquired quota permit. Projects relating to emission reductions are most often related to the following areas, (ETS-Srbija.info):

- Investment in renewable energy sources, including: Bio renewable sources (biomass), energy of small watercourses, wind energy, solar energy, geothermal energy. These projects provide new sources of energy, while reducing emissions,
- Investments in agriculture are very important because developing countries often have great potential in developing the economy but not the ability to actualize these investments in the environmentally best way. A large number of manufacturers of agricultural goods in developing countries are doing it in an environmentally unacceptable manner, due to lack of money they do not care about increasing the protection and preservation of the environment,
- Investments in transport are an extremely popular way of reducing emissions, where the emphasis is on introducing new technologies ICE engines with reduced emission of CO₂ producing a large number of electric and hybrid vehicles,
- Investment in wastewater treatment is a process where urban or industrial wastewater is treated, for

the sake of usage of useful components in them, and consequently in connection with the reduction of further environmental pollution

- Investment in waste management is today's tendency where the methane released to the local dumps is collected and used as fuel in the production of electricity or warming the water for the purpose of heating. Through this process we obtain cheap raw material for the production of electricity or hot water (landfill gas) and we disable the emission of methane into the surrounding atmosphere.
- Investment in afforestation is usually unprofitable project whose main function is to create new green spaces. It is known that plants through photosynthesis use carbon dioxide and release oxygen, therefore these projects are related to reduced emission.

The Voluntary Market is another type of market which most frequently involves multinational companies on a voluntary basis. There are two main reasons why the companies would join this type of market.

The first concerns the demonstration of corporate responsibility for the protection and preservation of the environment. At the beginning of the 21st century, the awareness of the effects of the man and the anthropogenic sources on the environment was awakened. A large number of non-government organizations is advocating for raising awareness with consumers and buyers of products about the purchase of environmentally "clean" products. In this way corporations or companies that engage in this modern trend, will mark their product or service "clean" or "green", through which they can benefit.

The second reason relates to the corporate conviction that in the future this type of market will become mandatory and that it is only a matter of time when this will happen.

Of course many of them believe that they will benefit from the voluntary reduction of emissions through the purchase and sales of quotas on these markets, given that the laws are much "softer" in regard to CER trading. Voluntary markets are perhaps currently much smaller and VER trading is not as represented, yet their development is not driven by legislation and the coercion of the state, but private sector approaches them based on the principles of goodwill from the previously mentioned reasons. The presence of large companies such as Tesco, The Co-op, Marks and Spencer is obvious evidence that this markets should not be easily disregarded. Due to high competition and developed financial institutions in relation to the mandatory market, the opinion of the majority is that right here is the future of CO₂ emission trading.

4. Emission permits and emissions trading system deficiencies

Emission permits can be obtained in two ways. The first is the purchase from relevant institutions that perform their primary emission. Most often their purchase occurs by using an auction system, and the distribution under the principle of current output or historical production. Another possibility of obtaining emission permits is by using carbon credits that were obtained by CDM projects, Kossoy *et al.* (2014). The main advantage of the system of buying and selling of emission permits is the ability to supply electricity from power plants that run on coal, until the technology for the production of electricity from alternative sources does not develop or does not become cheaper. Emission permits have the task to direct knowledge and technology to the location where the greatest economic benefits is combined with the least impact on the environment.

In itself, the system of issuing and trading of emission permits proved to be unfair from the perspective of selection the relevance of the amount of given permits to companies or

countries. Big problem occurred even at the signing of the Kyoto Protocol when many states opposed to creating a market for trading emission permits for this very reason, Edwards (2010). The criteria for determining how many emission quotas should be given to every country represented serious problems because the limitation in emissions of carbon dioxide directly represented limitations to further economic prosperity. This specifically refers to the field of energy, which is the most developed and it can be said the most important economic sector in the world economy. Planet Earth abounds with large reserves of coal of different quality, so coal as a fuel or raw material which is used in the production of electricity and other technological processes, and has the lowest market price. The world's leading countries because of a greater demand for electricity use coal as the cheapest raw material. By the combustion of coal a large amount of carbon dioxide and other harmful gases is released in the atmosphere. The introduction of emission permits limits the use of coal which will force the countries to turn to alternative sources of energy which will, to a lesser extent or not at all contribute to environmental pollution. However, despite a number of advantages regarding the ecology of combustion, that is environmental preservation, price of these fuels is extremely high. From the above follows a logical conclusion that the use of alternative sources of electricity will lead to increase in the price of electricity. The rise in the price of electricity will lead to the emergence of discontent among business people which will result in an increase in the price of services and products that depend on it. At the end of the entire burden of increasing electricity prices will be borne by the society. This additional direct taxation of the society will lead to major social and political unrest as well as slowdown of economic growth with imminent closure of some power plants.

Beside of previously mentioned problems, determining limitation of CO₂ emission for

industry represent enormous problem. The impact of end product prices (electricity and industry products) on the price of an emission permits is positive, as an increasing price boosts production and thereby emissions, Aatola *et al.* (2013). Most of developed countries, who are involved in emission trading, decided to determine "cap" for each type of industry. Problem occurs when disproportionate allocation of emission permits, makes disbalance amongst pollutants and creates opposite effect. The best example can be represented in traffic. If government decides to limit production of electricity from coal power plants, the price of electricity will grow, which will have the effect on ticket price for trams and metro. Because of that, people will start to use their own transportation which will have effect on growth of pollution.

5. Trade and price of emission licenses

As already mentioned in the previous section each emission purchase licenses, not only to achieve the effect of preserving the environment, but also the ability to continue to trade in order to gain additional profit. UNFCCC data from 2009 shows that in that year the total trade volume was slightly higher than the 249.6 million tones of CO_{2eq}.

Opinions of the many heads of states and multinational corporations are that this market has a good perspective, and most likely to experience sudden expansion in the future. The risk management when purchasing emission permits is not yet clearly defined.

However, due to the large number of financial instruments, including derivatives, primarily futures and options, there is a possibility of reducing unintended consequences caused by trade, Kossoy *et al.* (2011). There are several types of risk that one encounters in this market, amongst which are:

- Country risk - refers to investments in CDM projects in politically unstable countries, Jeremic (2012).
- The risk of quality - refers to non-compliance with the so-called gold standard CDM.
- Delivery Risk - refers to the implementation of new untested technologies that may not be able to achieve projected reduction in CO₂ emissions.
- Market risk-the risk of negative effects on financial outcomes and equity due to changes in the value of a portfolio of financial instruments.

An adequate assessment of short-term price and volatility dynamics in the EU ETS is crucial because accurately measuring and forecasting market risk is a key factor for portfolio management and hedging to realize efficient trading strategies and to make informed investment decisions, Sanin *et al.* (2015).

The price of emission permit is expressed in US dollars (USD) or Euros (EUR) depending on the trading venue (referring to the market). The market price of emission

permit depends on supply and demand, and may depend on the project.

Price dependence of the project is related with futures most frequently, a customer buys from a seller emission permits that will be generated only after the completion of CDM projects. Depending on the risk that the project carries, greater risks futures would hold lower value whereas less risk futures would hold higher value. The buyer evaluates whether he is willing to take appropriate risks, and in the future he bears positive or negative consequences about it. In the event that the seller offers a guarantee that the implementation of an appropriate project, the buyer gets the agreed volume of emission quotas and the risk is further reduced.

Trading by VER is verified by different standards which must be approved by a third party. Besides voluntary and mandatory markets, market trading by CER is also conditioned by the standards. The best standard that is consistent with the policy of sustainable development and in the essence of the two markets, is the gold standard. The gold standard is based on the grounds of transparency and freedom of trade, and sustainability for all market participants.

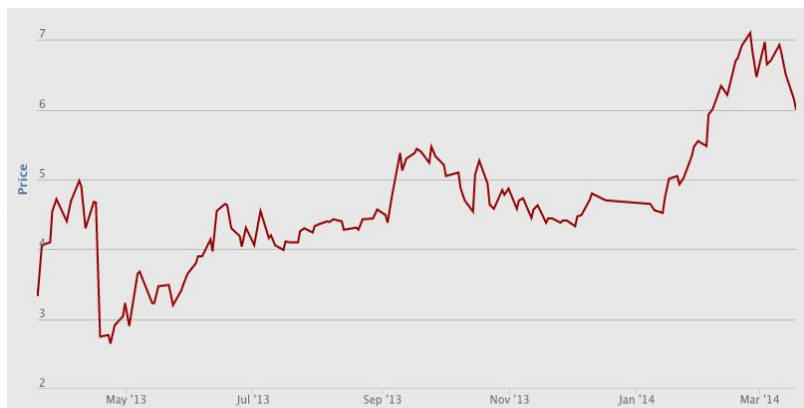


Figure 2. CO_{2eq} per ton spot prices may 2013 - march 2014

Figure 2 present spot prices of CO_{2eq} per ton from may 2013 until march 2014. Tendency of spot prices are indicators of market growth.

6. Advantages and disadvantages of serbia's entry in the emission market

Serbia has ratified the Kyoto Protocol in 2007. By ratifying the Kyoto Protocol, Serbia was classified as a developing country. Relatively late signing of the Kyoto Protocol resulted in the loss of huge potential profit which the Republic of Serbia could achieve. Just by not being classified in Annex 1 of the Kyoto Protocol, Serbia gained the right to participate in the implementation of CDM projects, that is the Clean Development Mechanism, which means that it could redeem carbon credits, gained by reducing GHG emissions, in the international market through this Clean Development Mechanism. Even if Serbia becomes part of Annex I, there would be no economic consequences, as the country would not be obliged to reduce emissions. According to the estimates of the Center for Advanced Economic Studies (CEVES) the level of emissions in 2008 in Serbia is significantly lower than the 1990 level (over 30%). Serbia would thus be able to trade "hot air" (the difference between the level of emissions from 1990 to the present level) until it reaches the level of emissions in 1990. Due to the significant risk only a small number of CDM projects are carried out in European countries in the development, therefore, Serbia signing Annex 1 could be involved in the mechanism of joint implementation of Kyoto Protocol, which is available only in developing countries, which would increase the number of potential investments. Due to the lack of

development of methods for monitoring CO₂ emissions in Serbia and the region, there is no official data on CO₂ emissions, but in 2004 according to estimates, about 53 million tons of CO₂ was released into the atmosphere. About 30% of emissions was created only by Electric Power Industry of Serbia (EPS) of which has the largest share of coal (about 76%), Avlijaš (2006). Since the price of the futures on EU ETS in the period of 2008 was around EUR 20 per quota, i.e. tone of CO₂ equivalent, the total annual value of CO₂ equivalent emissions amounted to more than billion euros. In the theoretical case if the emissions were reduced to zero, Serbia would annually make profit from CO₂ emissions, Avlijaš (2006). Of course, given the fact that it is not possible to completely neutralize emissions, only the reduction of the same would result in additional revenue in the budget of the country. With serious efforts of the state leadership, emissions can be further reduced through CDM projects. Thus, to achieve double profits by building new production of "green" facility, which would be a direct inflow of foreign investment and the creation of new emission reserves. Compared with other countries in the region, from clean sources of energy Serbia uses hydroelectric power with approximately 30% of the total electricity generated, which is satisfactory.

Figures 1 presents share of GHG emissions by sectors in the period 2010-2013, including year 1990, Jovovic *et al.* (2015). The GHG emissions are expressed in CO₂ equivalent in accordance with the IPCC's AR4 (Global warming potential values are 1 for CO₂, 25 for CH₄ and 298 for N₂O).

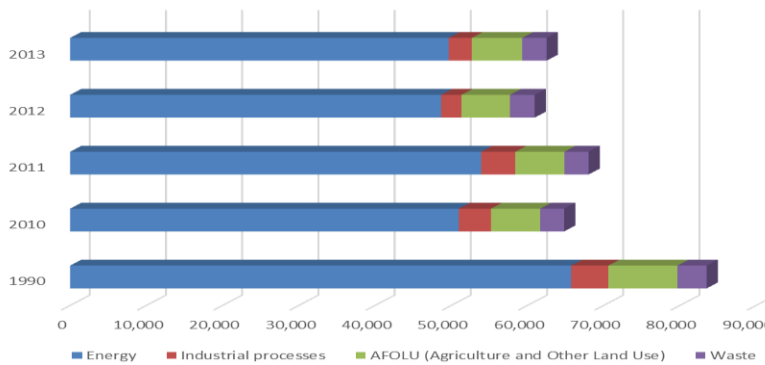


Figure 3. GHG emissions by sector 1990,2010-2013

In table 4 mitigation potentials for the increase of energy efficiency across the sectors are shown, Jovovic *et al.* (2015).

Table 1. Mitigation potential for the increase of energy efficiency across the sectors (GgCO_{2eq})

Year	2015	2030
Electricity and heat production	128	375
Industry	621	558
Trasnport	103	1145
Other sectors	128	194
Fugitive emissions	52	120
Total	1032	2392

Compared with other countries in the region, from clean sources of energy Serbia uses hydroelectric power with approximately 30% of the total electricity generated, which is satisfactory. When employed in projects to reduce GHG emissions (such as the creation of new enterprises that use energy more efficiently, or the use of more efficient technologies), CO₂ savings can be sold on the international market in the form of carbon credits. Investor can make it happen (regardless of whether it is a multilateral fund, foreign or domestic company or government of the country). Moreover, as projects implemented under the Clean Development Mechanism generate carbon credits over a period of about 10 years from

the beginning of the application, they represent a medium-term revenue source emissions from the market, and not just a one market transaction. Even domestic banks or the government of Serbia can through the system enter the market of emissions in order to diversify their portfolios. Not only the funds obtained by selling emission reserves in the CO₂ market Serbian government does not necessarily have to invest in projects that reduce greenhouse gas emissions, but also may invest in some other priority projects that are related to the construction of recycling companies, collecting landfill gas, waste water treatment and so on.

Even though the Republic of Serbia would have numerous benefits by joining gas trade markets with greenhouse effect, certain effects which would have a negative impact on the economy would still be present. The outcome of a scenario in which Serbia joins the EU ETS will primarily depend on the regulation of trading. During the first and second phase of trading on the EU ETS, emission permits were freely granted according to emitters in countries that joined the trade, depending on the historical emissions of greenhouse gases. However, due to constant abuse in the distribution of emission permits, these permits, within the third phase of trade (which is currently in progress) are distributed by auction. Yet, eight EU member states, which fall into the category of developing countries, continue to

receive part of the emission permits, emissions caused by electricity production from old power plants, through free allocations. Therefore, the Republic of Serbia belongs in the same category so based on the Article 10c derogation should be involved in the same. Consequently, given that EPS is the largest polluter of the environment in the Republic of Serbia, a large amount of free emission permits would be distributed to EPS. Profit earned by trading free emission permits, according to Article 10c must be used in the modernization of old power plants or investing in renewable energy sources, so the state would have the right to freely dispose of profit in order to invest in priority investments, which may or may not be associated with a reduction of GHG emissions. If the companies in Serbia, GHG emitters, had to buy emission permits on auction, in advance, there would be no possibility of achieving significant profit. In addition, free allocation of emission permits also affects industrial sectors exposed to carbon leakage. Carbon leakage is a risk of relocation of production to territories that are not included in the trade of GHG in order to reduce the costs associated with the purchase of allocation permits. Possible accession to the EU ETS, which would cause an outflow of cash in order to purchase allocation permits would cause an increase in the prices

of products which are directly or indirectly related to the emission of greenhouse gases. These effects to the current price of emission permits would have serious consequences on standard of living but in the case of the price increase of emission permits by several times in comparison with the current price, the difference would certainly be felt. However, given the overall opinion on the manner of allocation of emission permits, it is quite possible that it will be free in the future. A large number of markets with different or similar regulations like the EU ETS will show over time that the mechanism of the primary issue of emission permits is the most acceptable.

Unfortunately due to lack of data, GHG emissions cannot be safely monitored and it is very difficult to predict the future of GHG emissions in the Republic of Serbia. It is certain that due to lack of investment in the industry and energy, emissions in the future will not significantly change, as can be seen from the forecast derived for the period from 1990 to 2015. The figure 4 shows the change scenarios of GHG emissions in the Republic of Serbia in the period from 1990 to 2015, (Jovovic *et al.*, 2010). Given that the data on emissions are unavailable, the second report of the Republic of Serbia to the United Nations Convention on Climate Change is in preparation.

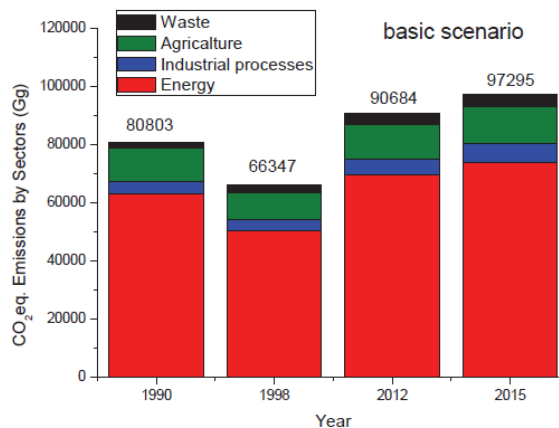


Figure 4. Change in GHG emissions in the Republic of Serbia in the period from 1990 to 2015

In the following years GHG emissions in the industrial sector will decrease due to the closure of businesses, while total emissions will grow due to increased GHG emissions by inhabitants. Therefore in the coming years it is not expected that the Republic of Serbia reaches GHG emissions corresponding to the level of 1990. If the regulatory framework of the EU ETS remains unchanged, especially the part that refers to allocation of permits, the inclusion of Serbia in the same can contribute to profit. By the end of 2015 several important investment projects which will contribute to the reduction of GHG emissions in the industrial and energy sectors will be

completed. Table 2 shows the investment projects with values of investments and the costs of reducing GHG emissions, Jovovic *et al.* (2010).

From the enclosed you can see that many of these investment projects make big annual savings in GHG emissions. Previously enclosed shows that despite of the low price of emission permits there is a possibility that a small investment gets paid through reduced GHG emission. Such cases are particularly pronounced in countries that are not sufficiently developed and where small investments can significantly increase the efficiency regarding environmental protection.

Table 2. Investment projects by the end of 2015 in the Republic of Serbia

No.	Projects	Investition (million USD)	Annual additional costs (million USD/year)	Annual emission reduction (MtCO ₂ eq/year)	Cost of reduction of GHG emission (USD/ tCO ₂ eq)
1.	Thermal power plant	1470	-6,1516	1,268	-4,85
2.	Hydro power plant	655,2	13,9076	0,967	14,38
3.	CHP plant	280	138,929	2,2425	61,95
4.	Thermal power plant – energy efficiency I	161	2,7832	0,519	5,36
5.	Thermal power plant – energy efficiency II	350	0,6334	1,07	0,59
6.	Forestry project	210	-	0,5	42

The Republic of Serbia has a large amount of coal that is the primary source of energy in power plants. Any restriction in the use of coal, the production of electricity or heat, the purchase of licenses would have a negative

effect on the final consumer. Given the macroeconomic and political situation in Serbia, the growth of prices of products would directly caused social problems. In order to prevent social problems of a

voluntary or mandatory approach to trade emissions of greenhouse gases regardless of whether the ultimate outcome of cost-effective, it is necessary to educate the population to increase awareness of environmental protection.

7. CONCLUSION

Complete liberalization made the idea of total access to the market for all interested parties a reality. Although a regulated market has the tendency to increase freedom and reduce regulation to a minimum, there are numerous problems that indicate the need for strict regulation. Strict rules attract potential investors with reduced systemic and market risk, while at the same time they deter some participants that look to earn a profit from speculation. With that in mind, large corporations participate in a OTC market that provides a certain amount of freedom in choice of a counterparty. Attributes of a undeveloped market are still present in this form of trade, time will show which of the market forms, regulated or OTC, will remain dominant in the greenhouse effect gasses emission trade. Although whether the global carbon market works is a controversial topic, there is no doubt that as a financial market, carbon dioxide emission market is going to be a success one, Zheng *et al.* (2015). The only factor that limits growth of the emissions trade market is the US. Currently, only the United States did not incur an obligation of participation in the emissions trade for large corporations. However, when the opportunity arises, the greatest economic force in the world, will not forgo a chance to make some additional revenue.

Increasing of energy efficiency with the use of an international emissions market might lead to: (a) attracting new technologies; (b) incentives for innovation in the economy; (c) increasing of comparative advantage of the economy; (d) support for long term growth. Policy makers have a very important role during the creation of these credit lines and

in supporting their use, and that role should not be neither of intervening nor executive, but rather a role in creating a framework for investing in a sustainable energy sector. The way in which the credit lines are created and operate, and other tools for incentivizing the use of renewable energy or energy efficiency, are important enough so that attention is needed for each individual instrument from idea to institutional support in implementation. Studies regarding the mechanisms of sustainable development confirmed that these tools represent the best allocation mechanisms which, if properly designed and implemented, bring benefit to the investor.

Participation of Serbia in the emissions markets will bring numerous advantages, but some problems with synchronizing as well. Entering the market Serbia would achieve better comparative advantage because two different reasons. On one hand it would have direct benefit from imposing a limit in emission of harmful gases and better care for the environment. On the other hand it will generate some additional public revenue. One problem arises with increased fiscal burden on the private sector, which is not in a strong position today. Further, tracking of CO_{2eq} emissions requires a big administration which makes the process of complete participation in the market difficult. Today the only company in Serbia that is participating in CO_{2eq} trade is Air Serbia. With numerous problems that come from the international to the national level, the CO_{2eq} market will not be a significant factor in Serbia's, and other countries of the region, development. However, the global CO₂ market represents a rare opportunity for Serbia to be an active participant in sustainable development, increase energy efficiency and make significant steps in further economic expansion.

Although these are the main reasons for participation of more nations in the market, benefits that come from trade itself are much more important.

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