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REGULATORY FRAMEWORK FOR THE DEVELOPMENT OF THE GREEN SUPPLY CHAIN: EU VS SERBIA

Regulatorni okvir za razvoj zelenog lanca snabdevanja –
EU vs Srbija

Abstract

Business practice indicates that besides the economic and social motives, the orientation towards the usage of green initiatives within the supply chain is mostly determined by strong legislative regulations which exist within the field, and which get more complex as the time passes. However, there is no uniformity regarding the treatment of regulation importance for the usage of the green supply chain concept worldwide. The empirical evidence shows that the degree of regulation of this issue, with the biggest number of accompanying directives is the highest within the territory of Europe, i.e. EU, while, for example, economic reasons of using this concept are more dominant in the USA, with the less developed regulations, which come as second. The rest of the world still recognizes vaguely the importance of the green supply chain concept, thus setting its implementation within these parts of the globe at the beginning stage, and making the motives which drive the implementation pretty unclear and non-differentiated. Therefore, the issue of the regulatory framework which represents the development guideline for green initiatives within the supply chain is very complex and specific and represents the basic preoccupation of the analysis within this paper. The entire paper is divided into two parts. Within the first part of the paper chosen EU directives oriented towards the regulation of specific issues and areas of managing the green supply chain are treated in detail. The second part of the paper is dedicated to the review of the legislative framework which treats the identical field, only within the Republic of Serbia. Precisely, an analysis is carried out to which degree the Serbian regulatory framework recognizes, appreciates and encourages the implementation of green initiatives within the supply chain and what is the general position of that framework compared to the one set by the EU. The aim of the paper is to identify the compatibility degree of the Serbian regulatory framework and the

one set by the EU, as well as to recognize potential incompatibilities or shortcomings within the system of Serbian regulation which defines the green initiatives. Since the ultimate strategic goal of Serbia is to become a full member of the EU, the highest possible degree of harmonization of these two regulatory systems is needed, which shall be checked by the analysis within this paper.

Keywords: *green supply chain, regulatory framework, EU directives, WEEE directive, REACH directive, RoHS directive, EuP directive, ELV directive, Serbia*

Sažetak

Poslovna praksa ukazuje da je pored ekonomskih i socijalnih motiva, usmerenost ka primeni zelenih inicijativa u lancu snabdevanja mahom određena snažnim zakonskim regulativama koje postoje u oblasti i koje se protokom vremena dodatno usložnjavaju. Međutim, ne postoji uniformnost u pogledu tretmana važnosti regulativa za primenu koncepta zelenog lanca snabdevanja u svim delovima sveta. Empirija potvrđuje da je stepen regulisanosti ovog pitanja, sa najvećim brojem pratećih direktiva najviši na teritoriji Evrope, tj. EU, dok su, na primer, ekonomski razlozi primene ovog koncepta dominantniji u SAD, sa manje razvijenom regulativom, koja je u drugom planu. Ostatak sveta i dalje slabo prepoznaje značaj koncepta zelenog lanca snabdevanja, te je u tim delovima njegova implementacija tek u početnoj fazi, a time su i motivi koji ga pokreću prilično nejasni i nediferencirani. Stoga, problematika regulatornog okvira koji predstavlja orijentir razvoja za zelene inicijative u lancu snabdevanja veoma je kompleksna i specifična i predstavlja osnovnu preokupaciju analize u ovom radu. Celokupan rad podeljen

je u dva dela. U okviru prvog dela rada detaljno se tretiraju odabrane direktive EU, usmerene na regulisanje specifičnih problema i područja upravljanja zelenim lancem snabdevanja. Drugi deo rada posvećen je razmatranju legislativnog okvira koji tretira identično područje, samo vezano za Republiku Srbiju. Konkretno, analizira se u kom stepenu srpski regulatorni okvir prepoznaje, uvažava i podstiče implementaciju zelenih inicijativa u lancu snabdevanja, te kakva je načelna pozicija tog okvira u odnosu na onaj postavljen od strane EU. Cilj rada jeste identifikovanje stepena kompatibilnosti regulatornog okvira Srbije sa legislativnom postavkom EU, kao i uočavanje potencijalnih neusaglašenosti ili manjkavosti u sistemu srpske regulative koja definiše zelene inicijative. Budući da je ultimativni strateški cilj Srbije punopravno članstvo u EU, potrebno je postojanje što veće harmonizovanosti ova dva regulatorna sistema, što će analizom u radu i biti provereno.

Ključne reči: *zeleni lanac snabdevanja, regulatorni okvir, EU direktive, WEEE direktiva, REACH direktiva, RoHS direktiva, EuP direktiva, ELV direktiva, Srbija*

Introduction

The legal regulation is becoming more and more the key incentive and development guideline for the green supply chain. Although there is existent pressure made by different external elements (final users, suppliers, non-government organizations, the local community and similar), as well as internal elements (specific organization culture and agitation for moral values) to use green initiatives, the biggest pressure is precisely set by the legal regulation. The authors Kahidir & Zailani have carried out an extensive research with the aim to establish the basic drivers of green supply chain development. Within more than 30 studies which have been analyzed, the dominantly most important drivers of the green initiatives within the supply chain are as follows: regulations (in more than 87% of analyzed studies), social responsibility (much less than regulations, around 43%), client pressure (40%) and expected economic benefits (40%) [15, pp.1-9]. Within the EU project entitled United Nations Global Compact Framework, especially developed as the support for the usage of green initiatives in doing business worldwide, there is another confirmation that legal regulations are the *conditio sine qua non* [10, p.17].

Taking into account the undoubted importance of the legal framework for the implementation of green initiatives among different participants of the supply chain, the paper

further analyzes the specifics of EU regulatory practice, which is considered the most developed within this area. After that, a detailed review of the Serbian legal setting is performed which treats the issues of green initiatives, in order to finally present the comparative review of the European and Serbian legislation, along with additional comments and recommendations for further improvement. All stated elements of analysis follow.

The green supply chain regulatory specifics

It is of crucial importance to point out that there is no uniformity regarding the regulation importance treatment for the usage of the green supply chain concept in all parts of the world. Namely, different empirical research indicate that the degree of regulation of this issue, with the biggest number of accompanying directives is the highest within the EU, while the USA tend to rely more on economic reasons for using the green incentives. The rest of the world, including developing and less developed countries, does not recognize clear enough the importance of the green supply chain concept, which is in those parts of the globe at the beginning stages of its usage and with scarce or non-existent regulation covering the issue [20, pp. 524-546].

Appreciating all the given limitations as the starting point of the analysis, continuing follows the deep review of existent EU directives of influence on the green supply chain. Also, there follow considerations to which degree does the Serbian regulatory framework recognize, appreciate and stimulate the implementation of the green initiatives within the supply chain, and what is the general position of the Serbian legal framework compared to the one from the EU.

The EU directives

The European Union (EU) has the most developed and extensive ecological regulations and rules compared to any other international organization or entity. It's set of ecological regulations significantly intervenes with regulations of other entities, both of supranational and national character. The stated regulations and rules

profoundly influence all other EU member states, but also those countries which want to become its part in perspective, as is the case with the Republic of Serbia. The wide setting of EU ecological regulations assumes that the most important areas have been covered, ranging from acid rains, ozone layer thinning, pollution and quality of air, water and soil, noise issues, up to the question of managing waste of different kinds. Due to the dynamic development of this field, there are no precise data on the total regulation corpus covering this area. In order to create a general picture, the Institute of European ecological policy has set the estimate that this area is closely regulated by more than 500 directives, regulations and decisions [14, pp. 12-16]. The practical involvement of the mentioned set of regulatory settings for the greening of the supply chain is dominantly connected with the issue of waste minimization during the product life cycle, as well as the partial return of product lost value after the end of that cycle [10, p. 35]. Setting the extensive EU regulation in such a green supply chain context, the analysis within this part of the paper focuses on the following directives:

- the WEEE directive
- the RoHS directive
- the REACH directive
- the EUP directive
- the ELV directive

The WEEE directive

The electric and electronic waste such as computers, television sets, refrigerators and mobile phones, represents one of the fastest growing types of waste within the EU, with some 9 million tons cumulatively generated up to 2005 and with the expected growth of over 12 million tons up to 2020 [21]. This type of waste represents a complex mixture of materials and components, which due to its hazardous content, can cause severe ecological and health issues, if not managed correctly. Furthermore, the production of electronic equipment demands that all supply chain participants obtain rare and expensive inputs. For example, about 10% of total global gold diggings are used for the purpose of producing this equipment [21]. In order to deal with this issue, in 2003, the EU has

accepted the set of directives dealing with the disposal of electric and electronic waste. The first in line was The Waste Electrical and Electronic Equipment Directive or shortly- the WEEE directive.

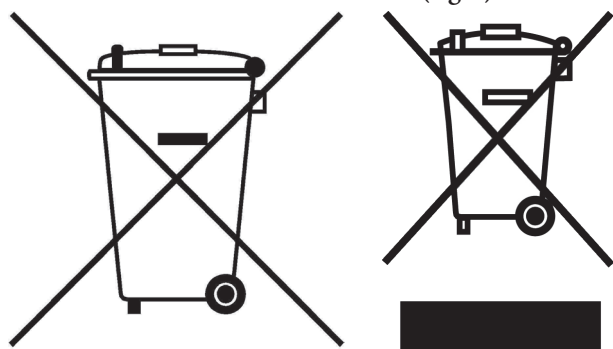
The basic contribution of this Directive is to establish the so-called schemes for gathering electric and electronic waste, according to which the final users return (dispose of) these products for free. The aim is to increase the repeated usage and potential recycling of electric and electronic waste, in order to extract the maximum product usage value. In December 2012, the revision of this Directive has been performed, and its altered and upgraded version came into force in February 2014. According to the revised version of this Directive, the general EU goal is to recycle at least 85% of total electric and electronic waste until the end of 2016 [9, pp. 1-3].

In order to raise the public awareness about the importance of this initiative, during the process of introduction of the WEEE directive and later on, during its implementation, across the countries of the EU a great number of theme manifestations has been organized. The manifestation which certainly caused the most attention occurred in April 2005, on the south bank of the river Thames in London. At that moment a sculpture, 7 meters tall, called the "WEEE man" was revealed. This sculpture was made of 3.3 tons of electric waste, which is the average quantity of waste produced by an individual during his or her lifespan [4].

It is interesting to mention that according to the principals of the WEEE directive all categories of electric and electronic waste can be categorized into historic and non-historic. The historic waste refers to the equipment which has been on the market longer than 2005, and for which the equipment owner has the obligation concerning recycling. The equipment present on the market after 2005 is categorized as non-historic waste and it is the responsibility of the producer/distributor to take care of the collecting and recycling of this equipment [12, pp. 475-493]. The differentiation in practice between these two types of waste has been enabled by using a different graphic illustration, the so-called WEEE symbol which can be found imprinted on the products. Namely, while there is a black line below the WEEE symbol on the graphical

illustration of the non-historic waste, the illustration of historic waste does not have that line. In order to make the explanation clearer, the difference is shown within Figure 1.

Figure 1: Graphical symbols of the historic (left) and non-historic WEEE waste (right)



Source: [21].

Concluding, it can be stated that the improvement of the ecological management of these materials, the upgrading of the production supply cycle and strengthening of resource efficiency regarding gathering, disposal and recycling of electric and electronic waste, represent the key reasons why this Directive is a relevant precondition for the creation and maintenance of the green supply chain.

The RoHS directive

Available evidence has shown that specific measures are needed when it comes to gathering, treatment, recycling and disposal of electric and electronic waste, defined by the WEEE directive, in order to reduce problems of managing waste caused by heavy metals. Despite these measures, a great part of electric and electronic waste ends up in the current trash flows. Even if the waste is separately gathered and subject to the processes of recycling, it still contains hazardous materials such as mercury, cadmium, lead and similar, which represent the risk for the environment and the health of people. Taking into account the technical and economic possibilities, the most effective way to reduce the risk for the environment and human health from these substances is to replace them with some others which are harmless or at least less dangerous. Along with the introduction of the WEEE directive in 2003, the EU also introduced a special Restriction of Hazardous Substances Directive or shortly-the RoHS directive. According to this

Directive, the producers within the supply chain are obliged to replace the heavy metals such as lead, mercury, cadmium or hexavalent chromium, as well as the inflammable compounds like polybrominated biphenyl or diphenyl with safer alternatives which form part of the electric or electronic products. The substances in question can be found in products such as: colors, pvc cables, batteries, lamps, light bulbs, tv glass etc [18].

With the passing of the time, the issue of electric waste has become more and more serious regarding the ecological and health risks, despite of initially introduced directives. Therefore, similar as with the WEEE directive, in 2008, the EU Commission suggested a revision of the RoHS directive in order to reduce the administrative burden and to assure the coherence with new policies and legislation which treats product commercials within the EU. The altered version of the RoHS directive has been announced in the official EU Gazette on July 1st 2011, and it came into force on January 3rd 2013 [18]. At the beginning of the usage, the RoHS directive did not assume the existence of any product mark which respects regulation imposed by this Directive. In the meantime, such a situation provoked a great number of individual producers to create their own marks with the aim to point out that a particular company respects the green initiatives, so in that manner the situation became very confusing. In order to eliminate any doubts regarding the existence of the official symbol of the RoHS directive and its features, the EU Agency for the implementation of the trading standards has determined that the only valid and allowed indicator of accordance with the RoHS directive is the CE mark [19]. The graphical illustration of the CE mark is given within Figure 2.

Figure 2: The only official symbol of concordance with the RoHS directive



Source: [19].

The importance of the RoHS directive from the perspective of the green supply chain can be seen in efforts to minimize the harmful waste, which not only has negative effects on the environment, but is also extremely expensive in economic terms for manipulation and disposal. The elimination or potential minimizing of harmful waste also creates a positive image of the supply chain participant, which puts efforts in that initiative. Therefore, this Directive has a multiple role of importance in the efforts to make the supply chain greener.

The REACH directive

Within the market of the EU a great number of chemical substances has been in the process of production for years now. While that production is often in great quantities there are still insufficient information on the dangers these substances can cause to human health and the environment. That is why a need has occurred to fill in the information gaps, in order for the responsible supply chain participants to estimate the dangers and risks of these substances and to implement measures which neutralize or at least minimize the negative effects. With that aim, REACH was formed as the regulation of the European Union, adopted to improve the protection of human health and the environment from the risks that can be posed by chemicals, while enhancing the competitiveness of the EU chemicals industry. This Directive came into force on June 1st 2007 and it replaced the existing set of partial regulations and directives with a unique system [17]. This regulation introduces the responsibility of the supply chain participant for the estimate and risk management which can be needed in case of hazardous chemicals and offers the adequate safety information to

their users. Simultaneously, where there is an expressed need, the EU uses additional measures connected with highly dangerous substances (such as the analysed RoHS directive). The basic goals of the REACH directive are shown within Table 1.

The REACH directive functions on the principal “no data, no market”. In this manner, producers and importers are targeted and obliged to gather information about the features of their chemical substances, which shall enable them safe manipulation with those substances and data collection within the Central register of The European Chemicals Agency (ECHA) located in Helsinki, Finland. The agency represents a focal point of the REACH directive: it manages the data bases needed for the system functioning, it coordinates the deep evaluation of suspicious chemicals and it creates publically available data bases where all interested parties can obtain the needed information.

As is the case with two previous directives, the REACH directive is also estimated to be in need of modernizing. Differing from the WEEE and RoHS directive, the REACH directive has not yet been revised, i.e. the revision procedure is being performed at the moment. Also, the accordance of a particular product with this Directive is not prone to any specific labeling [3].

The importance of the REACH directive for the supply chain and its greening is similar to the RoHS regulatory framework. A special emphasis in this case is put on the necessity of the adequate timing of information sharing among all participants of the supply chain, in order for the initiative to get it's full sense. With the increase in the number of substances which must be controlled, and with simultaneous time compression given to retailers to answer questions on sold product contents (the current deadline is 45 days [3]), it is a highly demanding task.

Table 1: Main goals of the REACH directive

Aim	Aim description
Protection	Securing a high level of human health protection and the protection of the environment due to the use of hazardous chemicals.
Responsibility	Establishing the responsibility of the producer and the importer which deliver the chemicals onto the market for understanding and managing risks connected with their usage.
Trade intensifying	Allowing the free flow of substances within the EU market.
Competitiveness	Stimulating competitiveness within the EU chemicals market.
Innovation	Promoting the usage of alternative methods of dangerous substances estimate (the QSAR method, for example.)

Source: [17].

The EuP directive

The EU has implemented an ambitious energetic program rounded up by the EuP directive in order to assure the safety of energy supply, as well as to solve energy issues connected with other peoples' health and surroundings. This Directive has been introduced in 2005 and it has completely been adjusted to the Energy action plan according to which by the year 2020, the EU should lower the energy consumption by 20%. If this goal is achieved, that shall help the implementation of the Kyoto protocol and create savings of over 100 billion € on an annual level [6].

According to the EuP directive more than 75 action courses have been identified in 10 priority areas, including new standards of energy performance for different product groups, such as: boilers, copy machines, tv sets, lighting etc. The energy program set by the EuP directive has two key aspects. The first aspect has the goal to influence the awareness of both final, as well as business users when making the shopping decisions. Namely, the idea is to enhance the sales of products labeled with the "EU eco-flower" or "EU energy star", in order to make the products which incorporate the principals of the EuP directive more popular. These are informal symbols which indicate the accordance with the EuP directive, and besides those there are no others, of formal nature. The graphical review of these symbols is given within Figure 3.

The other key aspect targets producers as the participants within the supply chain, demanding and/or stimulating them to reduce the ecological influence on all phases of the product life cycle and to decrease their

Figure 3: The symbols of the „EU eco flower” and „EU energy star”



Source: [6].

energy consumption. The complication of ecological issues has not left this Directive without revision either. Starting from January 2009, an improved version of the EuP directive is used. This version is oriented towards the decrease of stand-by electric energy consumption for 75% up to 2020 [6].

The companies with products falling under the scope of the EuP directive shall have serious challenges regarding its implementation. These companies shall be obliged to gather numerous data and report on various energy measures concerning the consumption of particular product groups, through all the phases of their life cycle. What is most important, the usage of the EuP directive introduces additional demands which are potentially even more challenging than the WEEE, RoHS, REACH or any other valid regulatory framework. Namely, the directives analysed up to now mostly concentrate on one (or dominantly one) aspect- recycling (WEEE), toxic matters (RoHS) and similar, while EuP covers numerous ecological aspects. That is why the importance, as well as the challenges of this Directive are multiple for the participants of the green supply chain.

The ELV directive

The number of motor vehicles used within the EU is among the largest in the world. In 2014, the total number of motor vehicles in the EU was 263 million, out of which passenger cars accounted for the greatest share with 223 million units. With the annual number of newly registered vehicles of 18,7 million, out of which 15,9 million are passenger vehicles, the estimated number of end-of-life vehicles is between 13 and 14 million units per year. However, the official statistics indicates that there are between 7 and 9 million end-of-life vehicles, since a part of the "waste-intended" vehicles is sold as used within the markets of Eastern Europe or Africa. Therefore, every year, the end-of-life vehicles generate between 7 and 9 million tons of waste within the EU, and this waste needs adequate management [5].

With that aim in mind, as one the earliest introduced directives, in 2000, the EU introduced the End-of-Life Directive or shortly- ELV directive. This Directive is the

first regulatory guideline dealing with EU waste, within which the EU Commission introduced the concept of extended producer responsibility. The basic purpose of this Directive is to reduce waste which is generated when vehicles are being disposed of at the end of their lifespan. The span of influence of the ELV directive is such that it covers the passenger vehicles of M1 category and light commercial vehicles of N1 category. The directive refers to all phases of the vehicle life cycle, as well as to the final phase of its disposal [5]. The main goals of the Directive are given within Table 2.

Seeing the basic goals of the ELV directive, it is evident that its features refer to the four key groups of participants within the supply chain: producers, the recycling industry, the last car owner and the regulatory entities. Similar to other analyzed directives, the ELV directive is also under the process of revision. The revision started in 2014, but the modified document has not yet officially been published. However, the already known elements of the revised material, indicate that in order to measure the real performance achieved by the EU member states regarding the implementation of the principles of the ELV directive, grading criteria have to be more strict. The comparative review of old and new criteria is given within Table 3.

The stated criteria are calculated based on the average weight of an individual vehicle per year. According to this methodology, recycling is defined as processing of materials with the aim of their usage for the same or similar purpose, while the return of value assumes incineration with the aim of generating energy. Therefore, the difference between

the two criteria represents the part which is intended for incineration [5].

Concluding, it can be pointed out that the usage of the ELV directive represents a serious obligation for the stated participants within the supply chain covered by the Directive. Taking into account the volume of operations performed in the business processes of the automobile industry and its supply chain, both within EU and globally, the demand sensitivity for products within this chain, as well as the pressure of increasing competition, the conclusion is that the given obligation must be fully implemented. That is the only manner to keep the supply chain sustainable and green.

The regulatory framework in the Republic of Serbia

The analysis performed up to now indicates that the implementation of the green supply chain concept and its stimulation, whether through a convenient regulatory framework or by using economic stimuli, represents a systematic and serious effort of some of the most developed countries in the world in a fight against the growing ecological problems. The analysis has also shown that there is no unique treatment of regulatory framework importance for stimulating the greening of the supply chain with all included entities. Therefore, the position of the Republic of Serbia also has to be defined concerning this issue.

Any interpretation of the issue of treating the green initiatives and regulations which cover this question in the

Table 2: Basic goals of the ELV directive

Prevention of using certain heavy metals such as cadmium, lead, mercury and hexavalent chromium
Gathering of vehicles within convenient locations, organized in the form of specialized car wastes
Purifying of liquids and specific components
Coding and information on parts and components
Offering information to clients and specialized car wastes
Achieving re-usage, recycling and return of targeted performance

Source: [5]

Table 3: Old and new criteria of norm fulfillment imposed by the ELV directive

	Starting from January 1 st 2006	Starting from January 1 st 2015
Re-usage and recycling	80%	85%
Re-usage and partial return of value	85%	95%

Source: [5].

Republic of Serbia, must be performed taking into account the wider geo-political situation within the country. The Republic of Serbia has set as its main strategic goal and orientation for its future the membership within the EU. Although this has been the strategic goal of the country for more than a decade and a half, the Republic of Serbia has officially submitted the demand for EU membership on 22nd December 2009 [16].

Since it has already been elaborated that the EU has the most detailed and developed regulatory elements, which treat the ecological issues and green business initiatives, one of the preconditions of the entrance of the Republic of Serbia into the EU shall certainly be the accordance with such a regulatory framework. That is precisely the main topic of one of the 35 negotiation chapters connected to the acceptance and carrying out of the legal heritage of the EU, which shall be set as a precondition for the membership of the Republic of Serbia, once the negotiations have begun. Precisely, the negotiation chapter 27 deals with this issue and it is called *The environmental issues* [2]. Therefore, all current actions of the Republic of Serbia concerning

the implementation of the green initiatives are closely connected with putting efforts into adopting its legal-regulatory framework treating ecological issues to the regulatory framework of the EU, i.e. the key directives of the Union. Analyzing the current state of the given accordance and practical usage of the green initiatives, unfortunately it can not be said that there is a generally high level of progress. Namely, the last serious step towards the introduction and implementation of the green laws in the Republic of Serbia was made in 2009, when based on the suggestion of the official, at that moment called the Ministry of the environment and space planning, a set of the so-called Green laws (a package of 16 environmental laws) was introduced. Since 2009 up to present, unfortunately there have been no serious advances within this field. Following, all elements of the stated package are presented within Table 4.

Analyzing the individual elements of the “Green laws” package, at first glance it could be stated that they cover adequately a wide area of environmental protection and respect the concept of the green supply chain in different

Table 4: The “Green laws”- set of 16 Serbian ecological laws introduced in 2009

The Law on waste management
The Law on package and package management
The Law on air protection
The Law on chemicals
The Law on biocidal products
The Law on environment protection
The Law on influence estimate on the environment
The Law on nature protection
The Law on the protection from the ionizing radiation and nuclear security
The Law on the protection from the non-ionizing radiation
The Law on banning the production, warehousing and usage of chemical weapons and it's destruction
The Law on noise protection within the environment
The Law on the protection and sustainable usage of fish resources
The Law on confirming the Amendment to the Appendix B of the Kyoto Protocol along with the Guideline Convention of the EU on climate change
The Rotterdam convention on the procedure of giving the concordance based on previous notification about certain dangerous chemicals and pesticides in international trade
The convention about information availability, participation of public in decision making processes and the right to legal protection in the matters of the environment

Source: [1].

aspects of doing business. However, although the declarative goal of introducing these regulations was the accordance with the key directives of the EU covering this area, that has not been carried out to full extent in practice.

Namely, the situation regarding the analyzed directives is different. The highest degree of applicability can be noticed with the ELV directive, with its elements recognizable in the valid Law on waste management, as well as within the Rule book on the way and procedure of managing vehicles at the end of their lifespan. However, this regulatory framework only partially corresponds to the ELV directive since it does not respect the analyzed concept of extended producer responsibility, nor does it clearly define the obligations of different economic subjects, which are serious remarks [13]. Also, an effort has been made to implement the key aspects of the REACH directive, which refer to the prohibition and restriction, reports on the data security, as well as to the complete list of questionable substances and chemicals, which is all incorporated within the Law on chemicals [3].

It is a worrying fact that the valid Law on waste management, although it was its previous intention, does not adequately correspond to the WEEE and RoHS directives, for which we can conclude that they do not have the visible transposition into the national regulatory framework [8]. Also, besides a couple of elements mentioned within the Law on energetics, there is no particular, separate and complete treatment of the EuP directive neither [11]. On the other hand, the undoubted importance and complexity of this Directive have already been explained in detail. In order to introduce the stated directives which are missing, in various turns active workshops have been organized by the official EU institutions, in order for the official entities in Serbia to be trained and prepared for their implementation. However, that has not been done up to now.

Concluding the analysis on the regulatory framework in Serbia, it can be pointed out that there are at least two serious issues which need to be solved right away. The first issue is connected to missing regulations, which correspond to the EU directives. In order for the process of Serbian accession to the EU to be completed successfully, it is needed, among other things, to perform an adequate and complete transposition of all important elements of the green regulatory framework into the Serbian legislation. Connected with that, we can identify the second, much more serious problem, and that is a partial and incomplete usage of the EU regulatory framework, but also other international conventions (Kyoto protocol, for example) which are being accepted.

It has already been stated that almost every implemented regulation has serious shortcomings and inconsistencies compared to the original legislation. The issue of EU accession, but also the issue of generally better life and business quality, shall be thus determined by the willingness to completely and efficiently implement the elements of regulatory framework towards which there are official aspirations. Since the stakes are really high, the effort of the state on all levels must be such that the green initiatives become an integral, recognized and completely implemented element in business of various supply chains, but also in the functioning of the environment generally.

The comparative review of regulatory frameworks: EU vs Serbia

In order to obtain a precise picture of the position of Serbia regarding the importance acknowledgment of adequate regulations for the stimulation of green initiatives within the supply chain, preservation of the environment and the way and quality of human life in general, within this part of the analysis a comparative review of the green regulatory

Table 5: The comparative review of regulatory frameworks: EU vs Serbia

Country /entity \ Focus of the regulation	Electric and electronic waste	Usage of dangerous substances in electric and electronic equipment	The usage control of dangerous toxic substances	The security of energy supply	Vehicle disposal at end of lifespan usage
EU	WEEE directive	RoHS directive	REACH directive	EuP directive	ELV directive
Serbia	No existing accepted regulation	No existing accepted regulation	Elements of Law on chemicals	Elements of Law on energetics	Elements of Law on waste management

framework is given for the Republic of Serbia and the EU member states. In that manner, in on place, a practical summary is given of the entire analysis concerning the green regulatory framework. Only remembering, the analyzed elements are the ones which are most often the subject of different issues within the environment. The comparative review is given within Table 5.

Based on the presented comparative review, two main conclusions can be made. First, as was presented at the beginning of the analysis, the most comprehensive regulatory framework covering the key issues connected with the green supply chain is present precisely within the EU. Secondly, compared to the EU, the position of the Republic of Serbia concerning the adopted green regulatory framework can not be marked as drastic, of course excluding the two serious limitations which have been pointed out within the previous part of the analysis. That certainly does not mean that our country should be pleased with the current state and that it should not continue to undertake all possible efforts in order to adopt a full and complete regulatory framework which shall be an excellent incentive for further proliferation of the green supply chain concept in the Serbian business practice.

Conclusion

Concluding the analysis connected with the regulatory framework of the green supply chain, it can be stated that its role is vital and that it can not be replaced by exclusively economic incentives, as an implementation measure. Of course, the *vice versa* also stands. That means that it is not enough to introduce a stiff and compulsory set of green laws, if their usage is not clear, whole and comprehensive. Only a joint usage of a wide set of measures, both regulatory and economic, can significantly influence that green practices should become an integral and usual elements of company business, and the concept of the green supply chain and important and real tool of contemporary competitive fight.

Comparing the legislative setting of the EU and the Republic of Serbia in this domain, it has been concluded that the state in the Republic of Serbia connected with the green regulatory framework is not drastically bad, of course, excluding two serious limitations. Those two limitations

are the absence of some regulations, which correspond to the directives of the EU, on one hand, and the partial and incomplete usage of the contents of the regulatory EU framework which is adopted, on the other hand.

The final conclusion is that in order for the process of accession of the Republic of Serbia into the EU to be carried out fully, it is needed as soon as possible to implement an adequate and complete transposition of all important elements of the green regulatory framework into the Serbian legislative system. Only in that manner shall it be possible to achieve the desired legislative harmonization, and what is more important, that shall make the Republic of Serbia ecologically aware, competitive and a strong national economy, a full member of the EU in the future to come.

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