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THE WASTE PREVENTION AS THE KEY ELEMENT IN THE WASTE HIERARCHY

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Abstract. The amount of waste generated depends on many variuos factors. These include levels of economic activity, demographic changes, technological innovations, life-style and patterns of production and consumption. For this reason waste prevention targets are not effective if used in isolation from products and resource policy. Waste prevention is an important strategic activity for every Member State to ensure sustainable, competitive growth into the future. Member States are required to draw up waste prevention programmes, based on best practice. It is anticipated that cooperation between Member States with their waste prevention programmes will result in useful results. Cooperation to create effective promotion of waste prevention opportunities available to all organisations and households is essential. The widespread adoption of resource efficiency has potential to reduce waste arising and contribute to the sustainable production and consumption agendas.

Keywords: waste management, waste prevention, the National Waste Prevention Programme, sustainable consumption.

INTRODUCTION

Waste prevention is about taking actions to reduce personal and business costs by using more resource efficient ways for every day activities.

The important objectives of waste prevention are to achieve significant results in reversing current trends in waste production, stabilizing waste arising and decoupling waste generation from economic growth by maximizing resource use efficiency. These objectives require concerted efforts at all levels of society deploying appropriate resources in the years ahead to ensure their accomplishment.¹ The need in reversing current trend in consumption also is essential. The consumption is increasing and in order to solve the reasons and environmental impact of this trend, it is necessary to consider sustainable consumption and use of resources, greener production possibilities and waste generation together.

Whilst some Member States have already met and passed the minimum EU waste management targets and have moved up the waste hierarchy, others are still struggling to

¹ Environmental Protection Agency. The National Waste Prevention Programme. Third Annual Report 2006/07. [accessed 20-09-2011],

http://www.climatechange.ie/pdf/epa/final%203rd%20nwpp%20annual%20report%20to%20minister%20july%2 02007.pdf.



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meet minimum requirements and concentrating their activities at the bottom. Waste still represents about 20% of all environmental infringement cases. Waste prevention represents a complex field to both legislation and monitoring. These problems emphasize the topicality of this paper.

The subject of this paper is waste prevention issues, which are widely mentioned in both legislation and waste management plans.

The aim of the paper is to prove that essential results in waste prevention can be achieved by a combination of economic, legal and social instruments and the identification of best practices across Member States.

The methodology if the research. The author of this paper used analytical and comparative methods to review waste regulation and the meaning of waste prevention, to compare different levels of waste management in Member States, to analyse different instruments for waste prevention implementation.

WASTE REGULATION

Waste is defined by the Directive 2008/98/EC on waste² ("WFD or The Waste Framework Directive") as "any substance or object which the holder discards or intends or is required to discard". The European Union generates about 1.3 billion tones of waste each year. The average waste production per person is 530 kg each year. The single fastest growing stream is municipal waste. Cost of municipal waste and hazardous waste management is 75 billion Euros per year³. Waste has become a danger not only to the environment but to human health as well. The amounts of waste produced in different Member States are a clear sign that economy is environmentally unsustainable. Despite the fact that the attitude towards waste is slowly changing, more waste is being produced than ten years ago. It is important to notice that environmental problems go beyond national borders and can only be solved through coordinated actions at EU and international level.

Effective waste management begins with prevention. Waste prevention is an important strategic activity for every Member State to ensure sustainable, competitive growth into the future.

² Directive 2008/98/EC of the European Parliament and of the council of 19 November 2008 on waste and repealing certain Directives, OJ L 312, http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:312:0003:0030:en:PDF.

Waste prevention and recycling. 2010 [accessed 19-09-2011], http://www.euractiv.com/sustainability/wasteprevention-and-recycling-linksdossier-188286.

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One of the main objectives of the Thematic Strategy of the prevention and recycling of waste, adopted in 2005⁴ ("Waste Thematic Strategy"), is waste prevention. It is at the top of the EU waste management hierarchy and the Waste Framework Directive introduces measures to strengthen waste prevention. All Member States are required to develop National Waste Prevention Programmes by 2013.

At the bottom of the waste management hierarchy is the least preferred option – the disposal of waste. Despite this fact, the largest part of municipal waste still ends up in landfill. That also means that people are throwing away the earth's natural resources. Landfills are becoming increasingly full and produce toxic gases and leaking heavy metals and toxins into groundwater and soil. Incineration also produces toxins and heavy metals.

According to the fact that production of waste is related to consumption patterns, lifestyle, income levels and other social, economic and cultural factors, waste prevention must be regulated in adjustment with all these factors.

2. THE MEANING OF WASTE PREVENTION

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The concept of waste prevention has been broadly accepted. The promotion of waste minimization has existed for decades. For example, the Organisation for Economic Cooperation and Development (OECD) began to work on programme on waste minimization in 1994. But waste generation is still on the rise. Consequently, the question is how much time is needed to implement one of the priority issues of waste hierarchy. In this context it may be enquired whether this paramount objective, despite all considerable resources spent on environmental protection and waste reduction, is only declaratory and not achievable.

According to WFD Article 3 "prevention" means measures taken before a substance, material or product has become waste, that reduce the quantity of waste; the adverse impacts of the generated waste on the environment and human health; or the content of harmful substances in materials and products⁵. The European Topic Centre on Sustainable Consumption and Production gives more explicit definition of waste prevention: "prevention means eliminating or reducing the quantity of waste which is produced in the first place, thus reducing the quantity of waste which must be managed. Prevention can take the form of reducing the quantities of materials used in a process or reducing the quantity of harmful

Communication on the Thematic Strategy on the prevention and recycling of waste. http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2005:0666:FIN:EN:PDF.

Directive 2008/98/EC of the European Parliament and of the council of 19 November 2008 on waste and repealing certain Directives (n. 2).

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materials which may be contained in a product. Prevention can also include the reuse of products"⁶. It means that prevention may be achieved by reducing the overall demand for goods and services, by using less or less harmful resources to meet the reasonable needs.

Under EU policy, landfilling is seen as the last option and should only be used when all the other has been exhausted. It is implied, that only a substance, material or product that cannot be prevented, re-used, recycled or otherwise treated should be landfilled. While in Lithuania the disposal of municipal waste in landfills still remains the cheapest way of waste management and about 90 per cent of municipal waste is lanfilled⁷, in some Member States landfilling has nearly disappeared.

Waste prevention approach is highlighted as the most effective way to deal with waste. However, the tendency of the Waste Thematic Strategy to only look at the problem from a waste perspective is considered as not sufficient. Waste sector is unable to influence consumption patterns adequately. So it is important to look at the waste prevention from the different perspective. In order to ensure its accomplishment concentrated efforts of changes in lifestyles, in current trends in production and consumption are required. Also it is important to evaluate resource efficiency, innovation, design approach. All these efforts together would help stabilize waste arising and achieve one of the main objectives of waste prevention – decoupling waste generation from economic growth. This will require to ensure, that appropriate resources are available, and that all levels of society adequately respond to the challenges.

It is quite difficult to discern any significant changes in Lithuanian waste prevention sector. There are few decisions made and certain initiatives are being implemented in waste reuse and recycle sectors. The original waste sorting is also weakly developed (only about 20 per cent of the population is sorting waste).⁸

For example, in the UK a better understanding of the reasons for food waste generation and the options for prevention was achieved. Unrelated to the Waste Thematic Strategy, the "Love food, hate waste" campaign was launched two years ago, and its impact is starting to be measured. This experience shows that some positive results in waste prevention may be achieved by influencing consumption habits, but it takes a lot of time. In Germany 270

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⁶ What is waste? [accessed 20-09-2011], http://scp.eionet.europa.eu/themes/waste.

⁷ Uselyte R., Silvestraviciute I. *Analysis on the waste management state. The report 30-11-2009*. <u>2009 [accessed 20-09-2011]</u>, http://www.am.lt/VI/files/0.440577001288949478.pdf.

⁸ Ibid.

⁹ Preparing for the review of the thematic strategy on the prevention and recycling of waste. 2010 [accessed 20-09-2011], http://ec.europa.eu/environment/waste/pdf/review_report.pdf.



existing waste prevention initiatives have been running; however, their impacts are yet unknown. ¹⁰ Such data shows how many measures every Member State has to take in order to achieve certain results in waste prevention field. It is also important to underline that all these initiatives don't guarantee the desirable results because waste prevention by its nature can be difficult to measure. It is also difficult to say, whether any observed reductions in waste generation are due to waste prevention measures, or to external factors such as economic or demographic changes, or other behavioural changes independent of waste prevention strategies. ¹¹

Rising consumption results in no overall change in resource use or decline of waste quantities despite of the growing production efficiency. This can be solved either by creating products with longer life term or cutting the consumption. According to stakeholders, it is not easy to legislate consumption because industry dictates what people buy and industry is generally not interested in reducing consumption. However, the goal could be seen as lessening the impacts of consumption (of goods and services) on the environment rather than reducing consumption per se. ¹² To achieve this goal the lack of self – perception by consumers should be resolved. Admittedly, people do not realise what they are doing, especially with food waste. So it is very important to identify motivation, to choose the right people to speak and well-targeted incentives.

Although waste prevention is a clear priority in waste management, it becomes evident through various projects and initiatives that growing waste amounts, waste diversity and associated risks highlights the need for governments of every Member State to seek waist prevention as an essential component of strategy for a sustainable development and implement the necessary legislation.

In the final report on the analysis of the evolution of waste reduction and the scope of waste prevention, it is noted that according to the Waste Thematic Strategy, limited progress has been made in transforming this objective into practical action, although waste prevention has been the paramount objective of both national and EU waste management policies for

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 $^{^{10}}$ Ibid .

¹¹ Supporting the Thematic Strategy on waste prevention and recycling. Final report. 2010 [accessed 20-0-2011], http://ec.europa.eu/environment/waste/pdf/Final%20Report%20final%2025%20Oct.pdf.

¹² Preparing for the review of the thematic strategy on the prevention and recycling of waste (n. 9).



many years. Neither the Community nor the national targets set in the past have been satisfactorily met.¹³

The Waste Thematic Strategy concludes that waste prevention can only be achieved by influencing practical decision at various stages of the life cycle: how a product is designed, manufactured, made available to the consumer and finally used.¹⁴

In this context it may be enquired whether certain economic instruments may be included to strengthen producers and consumers behaviour and choices. For example, the value added tax applied on products that are made by recycling used materials or on second-hand goods could be reduced. Also certain tax exemptions could be granted to certain organisations, which make investments to produce longer lifespan products or change their production technologies according to environmental awareness and sustainable future. Such companies or organisations could also get reduced interest rates on the financial loans for their commercial activities promoting waste prevention. All these instruments could have a positive impact on consumer behaviour. Additionally, this would be consistent with supporting consumer behaviour and choices that are beneficial for the environment and for the economy.

Despite the fact that Member States still do not have the single model that would allow to predict the results in few years or a decade, this is not an excuse for not taking any actions. Just because Member States cannot measure waste prevention and the initiatives they launch, it doesn't mean they shouldn't try to achieve the paramount objective. Contrary, Member States must collaborate in this process because it is difficult enough for one country to act alone in a global market.

Waste prevention, reuse and recycle have been considered as being a base of environmental awareness and a way of promoting ecological balance through conscious behaviour and choices. It is generally accepted that these trends of behaviour and consumers' choices will lead to savings in materials and energy which will benefit the environment.

3. THE NATIONAL WASTE PREVENTION PROGRAMME

The Waste Framework Directive introduced a number of new provisions aiming to maximize prevention efforts, in particular, through national waste prevention programmes.

¹³ Analysis of the evolution of waste reduction and the scope of waste prevention. Final report. 2010 [accessed 20-09-2011], http://ec.europa.eu/environment/waste/prevention/pdf/report_waste.pdf. ¹⁴ *Ibid*.

NATURAL PROPERTY OF THE PROPER

The aim of the National Waste Prevention Programme is to promote the sustainable use of natural resources, to deliver substantive results on waste prevention and minimisation across both hazardous and non-hazardous waste arising.

According to the Waste Framework Directive the programmes shall set out the waste prevention objectives. Member States shall describe the existing prevention measures and evaluate the usefulness of the given examples of measures or other appropriate measures. The aim of such objectives and measures shall be to break the link between economic growth and the environmental impacts associated with the generation of waste. ¹⁵

Member States shall determine appropriate specific qualitative and quantitative benchmarks, targets and indicators for waste prevention measures. Annex IV to the document provides examples of waste prevention measures. These include measures that can affect the framework conditions related to the generation of waste (research on cleaner products), measures that can affect the design and production and distribution phase (the promotion of eco-design) and measures that can affect the consumption and use phase (awareness campaigns). Member States have to establish these programmes not later than 12 December 2013.

The European Commission will adopt the indicators to measure waste prevention, publish prevention guidelines and create system for sharing best practice examples from across the EU. The national reports could show relevant indicators on waste prevention to law, policy and commercial decision makers.

An EU initiative to encourage the dissemination of best practice from Member States or industrial sectors that have made the most progress to those that have made the least would help to structure waste prevention work and focus it on those areas where there is most benefit to be gained. ¹⁶

To create effective waste prevention programmes, it is very important to consider the provision of useful information on national waste arising. That would help to identify trends in waste arising from a variety of sectors and to direct efforts towards priority targets in waste prevention.

¹⁵ Directive 2008/98/EC of the European Parliament and of the council of 19 November 2008 on waste and repealing certain Directives (n. 2).

The story behind the strategy. EU waste policy. http://ec.europa.eu/environment/waste/pdf/story_book.pdf.

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For example, Ireland launched the National Waste Prevention Programme in April 2004.¹⁷ Projects under this programme include prevention in community, commercial and business context, such as shopping centres, a regional airport, construction, farms, university, public organization and schools. Also grant and technical assistance is being provided to single initiatives or projects to be implemented by local authorities. Best practice case studies and prevention data/know-how will emerge from each project dissemination and implementation throughout the country. It is anticipated that waste prevention projects will yield important results and promote the development of a culture of waste prevention in Irish

Later the new Prevention Plan 2009-2012 in Ireland was published.¹⁸ A key part of this Prevention Plan is the marketing and promotion of prevention opportunities available to all organisations and householders. This Prevention Plan 2009-2012 seeks to have regard to the requirements of Article 29 of the revised Waste Framework Directive and build on the success and lessons learned from implementing a range of practical prevention projects.

In the year 2011 the final report of evolution of (bio-) waste generation/prevention and (bio-) waste prevention indicators (Report) was provided for the European Commission. ¹⁹ The Report provides an overview of the status of the EU-27 national waste prevention policies. Various waste prevention projects in all Member States were evaluated. The Report shows examples of waste prevention initiatives which can be positively linked to actually reduced waste generation.

Lithuania has adopted a National Strategic Waste Management Plan in the year 2002. The main objective with respect to waste prevention in this plan is to avoid generation of waste, to reduce the quantities of generated and untreated waste and the threat it poses to human health and the environment. According to the plan, waste prevention shall be implemented by introducing integrated product policy, by implementing cleaner production

¹⁷ Environmental Protection Agency. The National Waste Prevention Programme. Third Annual Report 2006/07 (n. 1).

Environmental Protection Agency. The National Waste Prevention Programme. Prevention Plan 2009-2012. 2009 [accessed 20-09-2011], http://www.epa.ie/downloads/pubs/waste/prevention/Prevention%20Plan%202009-2012%20FINAL2.pdf.

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and low-waste technologies, reduction of hazardous substances used in production and etc. According to the Report, the only results/existing evaluations in Lithuania are: introduction of deposit system of reusable beverage packaging since 2003, analysis establishing of deposit for one-time beverage packaging 2009 and study of the development of reusable packaging usage. The Report doesn't give any good practice initiatives in Lithuania. For example, most of the bio-waste prevention initiatives were identified in Belgium, Ireland, the Netherlands and the United Kingdom, as in these countries, the need to reduce food waste generation was realized earliest. Contrary to Lithuanian's declaratory results, the Ireland's results/existing evaluation is as following: in 2009, a total of 2.95 million tones of municipal waste was generated in Ireland, a decrease of 8 per cent since 2008; the amount of municipal waste generated per capita has been reducing since 2006.

Ireland's experience in waste prevention shows that waste management has developed greatly in Ireland in the last two decades particularly in relation to separate collection of recyclables/packaging and improved landfill standards. However, specialists admit that waste prevention is a different challenge that can only be achieved by a complete change in attitudes and behaviour by people in business, industry, other organisations, and householders as consumers or at leisure. From experience with a range of projects it can be also concluded that there is an ongoing challenge to explain the practical application of waste prevention and resource efficiency ideas to public and private sector organisations. Irish specialists summarize few challenges to waste prevention²⁰:

- consumers are focused on convenience, fashion, high turnover of goods;
- there is a lack of alternative approaches to waste avoidance, generation and management;
- products lack durability or repairability;
- poor understanding of prevention and the connection between excess consumption and waste:
- lack of recent tradition of reuse, repair;
- need to implement prevention best practice widely in society.

The conclusion can be made that every Member State in order to seek certain results in waste prevention must establish a wide variety of ambitious waste management treatments, various waste prevention projects, initiatives, legislation, and must ensure the active

²⁰ Environmental Protection Agency. The National Waste Prevention Programme. Prevention Plan 2009-2012 (n. 18).



participation of people, organisations and other sectors and their engagement with the projects to seek the desired changes in behaviour that results in waste prevention.

CONCLUSSIONS

Waste issue is one of the key areas of the EU environmental policy. Increasing amounts of waste is a serious concern for the EU and specific attention is paid to preventive measures. Waste prevention is not achievable through legislation alone. Waste prevention can be achieved through improvements in production process, product's life cycle, through encouraging consumption of greener and long lasting products. Economic growth, the adoption of best practice, consumer behaviour and social structures also effect the generation of waste.

The waste strategy requires a common legislative base, comparable statistics as well as shared concepts and principles. Previous experience of Member States shows that in order to achieve certain results in waste prevention, a number of actions must be taken.

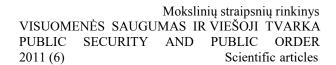
Although waste prevention has been the paramount objective of both national and EU waste management policies for many years, limited progress has been made in transforming this objective into practical action.

Growing waste amounts, waste diversity and associated risks highlight the need for governments of every Member State to seek waist prevention as an essential component of a strategy for a sustainable development and implement the necessary legislation.

All Member States are required to develop National Waste Prevention Programmes by 2013. The important thing for the National Waste Prevention Programme is to analyse existing projects, to establish what is working and to build on success. It is also necessary to conceive new projects and approaches and to promote new sectoral initiatives. The projects undertaken require communications with a wide variety of audience promoting good practice.

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ATLIEKŲ PREVENCIJA, KAIP PAGRINDINIS ATLIEKŲ HIERARCHIJOS ELEMENTAS

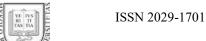
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Mykolo Romerio universiteto Viešojo saugumo fakultetas

Santrauka

Susidarantis atliekų kiekis priklauso nuo įvairiausių veiksnių, tame tarpe ekonominio aktyvumo, demografinių pokyčių, technologinių inovacijų, gyvenimo būdo, gamybos bei vartojimo specifikos. Dėl šios priežasties atliekų prevencijos priemonės, taikomos atskirai nuo gamybos bei išteklių politikos, nėra efektyvios. Atliekų prevencija yra laikoma svarbiu strateginiu kiekvienos šalies narės uždaviniu siekiant užtikrinti tvarų ir konkurencingą augimą ateityje. Iš valstybių narių yra reikalaujama parengti atliekų prevencijos programas, vadovaujantis atskirų šalių geriausia patirtimi. Yra tikimasi, kad valstybių narių tarpusavio bendradarbiavimas rengiant atliekų prevencijos programas, atneš reikšmingų rezultatų. Bendradarbiavimas kuriant efektyvias atliekų prevencijos skatinimo galimybes, prieinamas tiek organizacijoms, tiek namų ūkiams, yra labai svarbus. Visuotinai priimtinas efektyvus išteklių naudojimas gali turėti įtakos atliekų kiekio mažėjimui ir prisidėti prie tvarios gamybos ir vartojimo.

Pagrindinės sąvokos: atliekų tvarkymas, atliekų prevencija, Nacionalinė atliekų prevencijos programa, tvarus vartojimas.



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