

Europe Aid/135512/DH/SER/BY

"Technical Assistance to Support the Development of Green Economy in Belarus"

Contract № ENPI/2014/350-889

Component A. Development of knowledge and competences of Belarusian authorities in the context of the green economy

Activity 2.5: Elaboration of draft regulatory acts on the identification of an optimum mechanism to assess ecological compatibility of goods and services; principles of establishing environmental requirements to products, including rules and standards of packaging, labeling and re-use; principles to assess the effectiveness of technologies, rationale and justification to adopt them, prepared according to the requirements of the legislation of the Republic of Belarus

Analytical report on the regulatory framework

December 2015



The project is financed
by the European Union



The project is implemented by a Consortium
led by Hulla & Co. Human Dynamics KG



"Technical Assistance to Support the Development of
Green Economy in Belarus"



ENPI/2014/350889

ANALYTICAL REPORT

Project title: "Technical Assistance to Support the Development of Green Economy in Belarus"

Project number: ENPI/2014/350-889

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Date of report: December 2015

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LIST OF ABBREVIATIONS

ADEME	French Agency for Environment and Energy
EC	European Community
EEA	European Environment Agency
EEA	European Economic Area
ELCD	European Life Cycle Database
EMAS	European Eco-Management and Audit Scheme
EPA	Environment Protection Agency
EPLCA	European Platform on Life Cycle Assessment
ESIF	European Structural and Investment Funds
ETAP	Environmental Technologies Action Plan
EU	European Union
ILCD	International Life Cycle Data
IPP	Integrated Product Policy
ISO	International Organisation for Standardisation
JRC	Joint Research Center
LCA	Life Cycle Assessment / Analysis
LCI	Life Cycle Inventory
LCIA	Life Cycle Impact Assessment
MNREP	Ministry of Natural Resources and Environmental Protection
NGO	Non Governmental Organisation
OECD	Organisation of Economic Co-operation and Development
OEF	Organisation Environmental Footprint
PAS	Publicly Available Specifications
PEF	Product Environmental Footprint
PEFCR	Product Environmental Footprint Category Rules
PPP	Public Private Partnership
REACH	Registration Evaluation Authorisation and Restriction of Chemicals
SETAC	Society of Environmental Toxicology and Chemistry
ToR	Terms of Reference
UN	United Nations
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organisation
WBCSD	World Business Council for Sustainable Development
WRI	World Resources Institute

EXECUTIVE SUMMARY

The identification of goods and services (products) compatible with sustainable development is a major challenge on the way towards Green Economy.

At the EU level the support to eco-friendly products does not generally derive from a binding regulatory framework (Directive or Regulation) but from successive Strategies or Policies adopted and implemented over the last 12 years: strategy on Integrated Product Policy (2003), Sustainable Consumption and Production Action Plan (2008), Roadmap to a Resource Efficient Europe (2011), Building the Single Market for Green Products initiative(2013), Circular Economy Action Plan (2015). There are nevertheless some exceptions such as the Directive establishing a framework for the setting of ecodesign requirements for energy-related products (2009), or to some extent the Directive on Public Procurement (2014).

A similar situation - more policy documents than regulatory texts – can also be found at the national level of EU Member States, mainly because compulsory national measures to promote green products could risk to violate the principle of free movement of goods, or to distort competition rules prevailing on the EU single market.

There are in any case sufficient experience in the EU to contribute to the on-going efforts in Belarus to identify and promote eco-friendly products. This is first of all the case for the methodological work, based on Life Cycle Assessment (LCA), carried out since the mid 90's and which has culminated with the creation of the European Platform on Life Cycle Assessment. The EU experience is that LCA remains the best approach to identify eco-friendly products but even though existing ISO standards (series 14040 in particular) are useful, LCA implementation has to overcome scientific and technical challenges, a task devoted in the EU to the Joint Research Center of the European Commission.

Integrated Product Policy has been in the EU the main policy framework using life cycle thinking in order to promote eco-friendly products. Examples related to the work of Life Cycle Centers (Sweden, Denmark), and benchmarking of products (Finland) are described. This report refers also to various initiatives taken by several EU Member States, either predominantly on the demand side, such as Product Panels (originally at the initiative of the Danish Environmental Protection Agency) or on the supply side such as the recent initiative of Nordic Countries in order to promote eco-friendly clothing and textile products.

The existing consensus about the benefits of Life Cycle thinking is however not sufficient to solve the challenge of establishing a common methodological approach to enable Member States and the private sector to assess, display and benchmark the environmental performance of products.

The Single Market for Green Products initiative proposes a set of actions including a new methodology, the Product Environmental Footprint (PEF), which is a multi-criteria measure of the environmental performance of a good or service throughout its life cycle. This innovative approach is currently being evaluated after an initial 3 years period of development. Policy applications could take place from 2017 onwards.

For policy makers in Belarus, and in addition to methodological work described above, it could be of interest to consider the principles applied in the EU for the establishment of requirements for eco-products. Historically, the first approach related to ecodesign (Ecodesign Directive of 2009) focused on energy performance and targeted mainly electric and electronic products, or energy using products. The need to combine energy savings with other components of a policy promoting resource efficiency led very recently (December 2015) to the adoption by the EU of a Circular Economy Action Plan. This initiative will influence production processes in order to comply with ambitious recycling targets and to ensure that waste can more and more be used as a resource. A consequence of this

initiative is that eco-design requirements will be reinforced in order to promote reparability, durability and recyclability of products. The Plan foresees for instance by 2030 a recycling rate of 75% for packaging waste.

This report includes a number of recommendations that Belarus may wish to take into account in view of identifying and promoting eco-friendly products. These proposals include implementing a knowledge based approach, developing a green supply and a green demand, putting in place an appropriate institutional framework, ensuring a governance system facilitating changes, using legislative tools to ensure that environmental information on products is reliable, to start with pilot projects in some priority sectors and to explore systematically all the possibilities of cooperation with international partners such as ISO or the EU Joint Research Center.

INTRODUCTION

Belarus commitment to promote Green Economy directly leads to the question of the most appropriate methods which could be used to identify eco-friendly goods and services. A broad range of measures are indeed available in order to promote Green Economy, but they have pros and cons and their implementation is sometimes complex.

According to the Terms of Reference, the Activity 2.5 consists in drafting an analytical report on the regulatory framework of several EU Member States (as it was the case for Activity 2.4) focusing on 'information and identification of an optimum mechanism to assess ecological compatibility of goods and services' referring to the Life Cycle Analysis (LCA) and its practical implementation. In the part related to LCA, analysis should cover packaging, labelling and re-use as elements of waste management. Finally, the report should include an analysis of 'principles of establishing environmental requirements to products' referring to Integrated Product Policy, Eco-design and Resource Efficiency Assessment of Products.

Following a more precise investigation, it appears that the concept of *ecological compatibility of goods and services* deserves some clarification. This concept can hardly be found in policy or legal documents dealing with Green Economy, even though commercial companies sometimes claim that their products are 'ecologically compatible'¹. On the contrary, analogous concepts which are frequently used by the UN family (UNEP, UNIDO), OECD, EEA, the European Commission and most Member States are those of

- 'goods and services with a reduced environmental impact';
- 'green products and services';
- 'eco-friendly products';
- 'environment friendly goods and services'.

Beyond semantic discussions, what really matters is to identify which products and services can contribute to sustainable development and should be promoted in a move towards Green Economy. In order to comply with ToRs, but in view of the general practice, we suggest to focus in the report on the concept of **eco-friendly products** (covering goods and services), and to analyse criteria and mechanisms used to identify them, such as Life Cycle Analysis and Product Environmental Footprint (PEF).

The initial investigation has also evidenced that the policy at stake is framed by a number of policy and regulatory texts at EU level (Ecodesign, Integrated Product Policy, Public Procurement,...) but by very few regulatory texts at the national levels for the following reasons: free movement of goods (and services) being one of the key principles of the EU, diverging or even different regulatory frameworks at Member State level would risk to violate the EU single market rules². National regulatory frameworks are therefore marginal and exist only in order to implement EU directives (for instance in the waste management area). National authorities develop national strategies (which are policy documents), they may also propose voluntary schemes (such as National Ecolabels), but they are not part of a compulsory legal framework.

¹ For instance companies sometimes produce Environmental Product Declarations referring to International Standard ISO 14025

² In activity 2.4, national practices of several EU Member States could be identified and analysed because they did not take place in a regulatory framework, were not directly affecting the functioning of the EU single market, or were implementing policies designed at EU level.

It is therefore suggested in order to comply with ToRs, but in view to reflect reality, to focus on the **EU policy and regulatory frameworks** and to illustrate their implementation to the best possible extent in EU countries, such as Denmark, Sweden and other Nordic countries.

The issue of identification of eco-friendly products is key for the development of sustainable production and consumption. An easy measure is to ban or drastically limit the use of products which are harmful for the environment and public health, such as asbestos, mercury or chemicals containing endocrine disrupters. In the EU, the REACH Regulation described in the Report under Activity 2.4 contributes to better knowledge and therefore better control of chemical substances. Beyond these examples, what are needed are methodologies allowing a systematic assessment of all environmental aspects related to production and consumption of goods and services. It is proposed in this report to consider the following approaches in the light of the EU experience:

- Life Cycle Assessment and Integrated Product Policy;
- Single market for Green Products Initiative (Product Environmental Footprint and Organisation Environmental Footprint);
- Principles for the establishment of requirements for eco-products.

1 LIFE CYCLE ASSESSMENT AND INTEGRATED PRODUCT POLICY

1.2 The Life Cycle approach

Sometimes referred as a “cradle to grave” approach, and even as a “cradle to cradle” approach with the development of re-use and recycling, Life Cycle Assessment (or Life Cycle Analysis) has been developed since the late sixties and is still continuously subject to methodological improvements and refinements.

Life Cycle Assessment can be defined (UNEP) as a tool for the systematic evaluation of the environmental aspects of a product or service system through all stages of its life cycle.

More precisely, the EEA³ referred to another LCA definition based on the work funded by the Nordic Council of Ministers to prepare Nordic guidelines for Life Cycle Assessment.

“A process to evaluate the environmental burdens associated with a product system, or activity by identifying and quantitatively describing the energy and materials used, and wastes released to the environment, and to assess the impacts of those energy and material uses and releases to the environment.

The assessment includes the entire lifecycle of the product or activity, encompassing extracting and processing raw materials; manufacturing; distribution; use; re-use; maintenance; recycling and final disposal; and all transportation involved. LCA addresses environmental impacts of the system under study in the areas of ecological systems, human health and resource depletion. It does not address economic or social effects”.

One author even described LCA using the expression ‘the world behind the product’⁴.

The International Organisation for Standardisation (ISO) has developed (and updated in 2006) widely recognised standards related to LCA: the ISO standards 14040 series which describe the principles and framework for life cycle assessment.

According to these ISO standards, LCA should consist of the following four phases:

- goal scope and definition;
- inventory analysis;
- impact assessment;
- interpretation.

However, if a number of LCAs include these four phases and sometimes use complex software tools, others are limited to the two first phases. Using LCA is therefore always a useful approach but correspond in reality to heterogeneous practices reflecting various degrees of life cycle thinking, and often linked to resources available for LCA.

LCA has become over years an approach widely used in the EU environmental policy⁵, for instance in the Communication on Integrated Product Policy (see infra), the Thematic Strategy on the Sustainable Use of Natural Resources (2005) and the Sustainable Consumption and Production Action Plan (2008)⁶.

³ Life Cycle Assessment - A guide to approaches, experiences and information sources, EEA, 1997

⁴ “The World Behind the Product”, Bas de Leeuw, Journal of Industrial Ecology, 2005

⁵ “Life Cycle thinking in EU Policy”, Raffaella Bersani, December 2006;

⁶ COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS on the Sustainable Consumption and Production and Sustainable Industrial Policy Action Plan, 2008

LCA is a multi-criteria approach dealing with all relevant environmental aspects. Therefore, it is not possible to aggregate its results through a single score. On the contrary, the LCA results must be carefully interpreted and the LCA interpretation should reflect the diversity of environmental challenges in the territories where products are made/used. For instance, given that water scarcity is not the same in Spain and Greece on the one hand, and Finland, Estonia and Belarus on the other, it would be logical to put a different weight in LCA interpretation on the issue of water savings in production and consumption processes in these two groups of countries. It is therefore also understandable that national ecolabels do not totally reflect identical criteria but refer LCAs taking into account local or regional specificities.

Promotion of life cycle thinking in Sweden

- The Swedish Life Cycle Center is a center of excellence for the advance of life cycle thinking in industry and other parts of society. The Swedish Life Cycle Center is working with research, implementation, communication and exchange of experience on life cycle management. The mission is to improve the environmental performance of products and services, as a natural part of sustainable development. The work within the Swedish Life Cycle Center is characterized by openness and trust and is coordinated by close and continuous interaction between academia, applied research institutes, industry and authorities. Partners are industries and research groups with profound commitment to sustainable development and life cycle thinking. The center has been in existence since 1996. The constellation has varied, but the focus on environmental systems analysis has been preserved. Also the need for an open exchange of information and knowledge between organizations remains.
- Current partners are Chalmers University of Technology (host of the center), KTH Royal Institute of Technology, Swedish University of Agricultural Sciences, Department of Energy and Technology, Swedish Environmental Protection Agency, various companies such as Akzo Nobel, Volvo Car Group, Volvo Group, or Swedish Environmental Research Institute and the Technical Research Institute of Sweden.
- The center is built on high quality research and discussions in projects of different kinds and formats. A credible and flexible way of working on four different levels is applied to find sustainability solutions and reinforce the business:
- **Research projects** – identify research and further cross functional and cross disciplinary collaborations. Support dissemination of results to professionals and laymen.
- **Working groups** – initiate and facilitate open discussions to find common solutions and exchange experience on burning issues.
- **Scientific infrastructure** – build up a resource forum for methods, tools, data and reference material. Secure training for professionals, monitoring of international development and promotion of Swedish expertise.
- **Communication** – be a natural information hub and resource base for information and state of the art. Communicate outcomes internally and externally.

Source: Swedish Life Cycle Center

Promotion of life thinking in Denmark

The LCA Center Denmark was created in 2003 and is managed by three partners:

- IPU (at the Technical University of Denmark)

- COWI (Private Consultants)

- dk-TEKNIK ENERGY & ENVIRONMENT (Approved Technological Service Institute)

- The secretariat of the centre is located at dk-TEKNIK in Copenhagen

- The 'size' of the centre varies with the interest of the users as user financed activities are a major part

- The aim is to be financially independent from public funding within a period of four years

Goals

- To assist companies that have a need for environmental assessment of products in a life cycle perspective.
- To secure that the development of tools and methods for the life cycle approach in Denmark builds on a solid scientific basis.
- To promote product-orientated environmental work in companies (Life Cycle Assessments and Product-Orientated Environmental Management Systems).
- To maintain the existing cooperation between Danish LCA stakeholders.

Activities

- Communication about LCA and LC-thinking: courses, networks, workshops, seminars and meetings, newsletter, homepage, answering service, dialogue with LCA practitioners in companies and at consultants, articles for relevant media disseminating the positive experiences in companies, library;
- LCA software - 'Development' of a Danish version of existing professional software; Further development and update; Software sales in Scandinavia; Support; Courses in relation to software;
- Follow and coordinate activities in relation to the methodology development;
- International Networks – participation in international consensus processes, international networks (ISO, SETAC, UNEP, Nordic LCA Association);
- Research and development – participate in national and international research and development and other activities with international partners;

LCA Center Denmark for Companies

- Knowledge centre on LCA and life cycle thinking (Courses, Networks, Workshops, seminars and meetings, Answering service, LCA tools & data, Newsletter, Library, Place to get independent quality certification etc. of LCA work to increase credibility)

Future

- LCA Center Denmark to become more internationally oriented in the coming years.
- Closer link and cooperation between LCA methodology developers and companies.
- Need to address the trade-off between accuracy and feasibility - accuracy is important, but if it gets too complicated for companies to use, it will not have any effect.

Source: Official Danish Center for Life Cycle Assessment and Life Cycle Approaches, Jeppe Frydendal

In any case, it should be stressed that the Life Cycle Analysis of a given product is changing over time (with production processes, with transports mode, ...) and can be drastically modified by innovative technologies.

Finally, LCA has a number of methodological limitations such as data gathering, data quality, product definition, and as explained supra, results of LCAs focused on national and regional level may not be suitable locally. However LCA is probably the best tool currently available to substantiate the identification of eco-friendly products and is widely used in EU policies and legislations: EU decision makers consider that LCA benefits by far outreach its flaws.

Attempts are sometimes made to propose simplified LCAs, in particular with the objective to provide information easier to understand and more accessible for ordinary consumers. A good example is provided by the Finnish initiative on Eco-Benchmark.

A Finnish research on benchmarking products from a LCA perspective: the Eco-Benchmark project

Four Finnish research institutes designed in 2003 a three-year project to develop 'eco-benchmarks', i.e. illustrative presentation formats and benchmarks for presenting LCA-based information to citizens on the environmental impacts of products. The benchmarking method is also designed to help manufacturers and retailers to provide information about the environmental impacts of their products.

The result of the project is the Eco-Benchmark. It looks like a ruler with a scale on which the consequences of an average daily consumption of five different products are given as reference values. These five reference products are rye bread, laundering, cheese, car, and housing. The Eco-Benchmark helps to give an idea about the environmental impacts of any products or consuming patterns by comparing them with these five familiar reference products. The data produced by the project can be used for various comparisons. Using bus instead of private car reduces the climate change impact to less than one third, and the climatic impact of a typical car drive is 40 times as high as that of eating rye bread. Daily consumption of cheese corresponds to ten launderings when comparing the eutrophication effects on waters.

The scientists have also used previously published data when they sketched out a general view of the environmental effects of the various types of consumption. Somewhat surprising, food products were the group with the highest environmental impact, followed by housing and car traffic.

The Eco-Benchmark may in the future be a useful tool for different stakeholders. Producers can present the life cycle effects of their products by using the benchmark. Experts can analyze and illustrate the environmental impacts of various products or use the Eco-Benchmark when they discuss the impact of various life style and consumption patterns.

The objective of the next phase is to get a more reliable and accurate method of steering the choice of food products towards a more sustainable consumption. Another goal is to develop an easy-to-use internet tool which can be used by consumers to support more sustainable choices of life style and consumption.

Source: Finnish Environment Institute, Ari Nissinen

1.2 The LCA in the EU policies and legislations

Several pieces of EU environmental legislation also refer to LCA, such as the EU Ecolabel and EMAS Regulations, the Waste Framework Directive and other waste legislations, the Ecodesign Directive for energy using products or the Regulation on standardisation, as well as the 2014 Directive on Public procurement.

Out of these EU initiatives, the most relevant developments for the identification of eco-friendly products are those implemented in the frame of the **Integrated Product Policy**, even though this is not a 'regulatory framework' since this is not a binding piece of legislation (it would therefore be a Directive or a Regulation), this is definitely a policy influencing 'downstream' legislation, and it clearly has a framework setting function.

Integrated Product Policy can be defined as a policy framework covering all product systems and their environmental effects taking a life cycle perspective as a lead principle. IPP puts emphasis on three dimensions:

- IPP advocates "life cycle thinking", which means that when pollution-reduction measures are identified, consideration is given to the whole of a product's life cycle. This approach avoids shifting the environmental impacts from one phase of the life cycle to another. Instead it reduces the overall environmental impact.

- IPP is flexible as to the type of policy measure to be used, working with the market where possible. The environmental impacts of products can be an important element for environmental and energy taxations, product standardisation, environmental and energy labelling, as well as voluntary agreements. The only pre-requisite is that the measure used should be the most effective.
- IPP requires full stakeholder involvement. Throughout their long and complex lives, the environmental impacts of products are affected by the actions of many different stakeholders, such as designers, industry, marketing people, retailers and consumers. Reducing these impacts requires all stakeholders to take action in their sphere of influence: for example, manufacturers on the design and marketing of products, and consumers through product choices, use and disposal habits.

The European Commission adopted in 2003 a Communication⁷ which can be described as its main strategy to promote greener products in the EU. Five years later, IPP principles were successfully subsumed into the over-arching Sustainable Consumption and Production Action Plan, effectively embracing and taking forward the process started with the IPP Communication.

The labelling of products in the EU Sustainable Consumption and production Action Plan

“Consistent and reliable data and methods are required to assess the overall environmental performance of products, their market penetration and to monitor progress. Data on products and related environmental impacts required and collected under different tools should be shared where useful. Such methods also need to be cost-effective and easy to apply, for policy makers and for industry.

When possible, the use of European harmonised standards, ideally based on International standards should be explored, thereby ensuring increased competitiveness for industry and good relations with third countries and their manufacturers.”

Identification of eco-friendly products through LCA is a necessary step for the development of market instruments contributing to Green Economy, such as Ecolabelling or Greening of Public Procurement.

1.3 The implementation of the Integrated Product Policy

The methodological challenge of promoting life cycle assessments throughout the EU territory made necessary the creation of the European Platform on Life Cycle Assessment (EPLCA) which is managed by the Joint Research Center, the European Commission's in-house science service in charge of carrying out research in order to provide independent scientific advice and support to EU policies.

The EPLCA started functioning in 2005 with the objective to facilitate communication on and exchange of life cycle data, and to co-ordinate on-going initiatives on data collection and method harmonisation. It also aims at encouraging the EU industry to take advantage of opportunities to innovate.

The box below describes methodological documents currently available and recommended by the JRC for the implementation of LCAs.

⁷ COMMUNICATION FROM THE COMMISSION TO THE COUNCIL AND THE EUROPEAN PARLIAMENT
“Integrated Product Policy Building on Environmental Life-Cycle Thinking”, June 2003

Ensuring quality and consistency: recommended methods and data**ISO standards**

The general principles and requirements for conducting a Life Cycle Assessment are set out in the ISO standards 14040 and 14044. These describe the four phases of a Life Cycle Assessment and outline the elements that need to be considered for each phase. They also specify the reporting and verification needs to facilitate understanding and enhance the credibility of the assessment. This ensures that the reader of the final report is provided with enough information to make sound decisions. It is important to keep in mind that the ISO standards are built on international agreements but they do not go into every technical detail and are not very prescriptive. They provide a general framework which can sometimes result in two ISO compliant LCAs giving different results. For this reason, a number of guidance documents and handbooks have been published to provide additional guidance for quality assurance and coherence.

International Reference Life Cycle Data System (ILCD)

The International Reference Life Cycle Data System (ILCD) has been developed based on existing practice and through broad consultation between several partners and is coordinated by the Joint Research Centre of the European Commission. The ILCD, which is fully compatible with ISO standards, principles and guidelines consists primarily of a Data Network and a Handbook. The European Commission has developed the ILCD to provide an authoritative basis to support the increased availability of coherent and quality-assured Life Cycle Assessments, methods, and data.

ILCD Handbook

As part of this system, the ILCD Handbook is also in line with the ISO standards, principles and guidelines. It consists of a set of documents, including:

- General technical guidance on Life Cycle Assessment;
- Guidance for generic and average Life Cycle Inventory (LCI) data sets;
- Guidance for the framework and requirements of Life Cycle Impact Assessment (LCIA);
- Guidance for reviews in Life Cycle Assessment.

ILCD Data Network

The ILCD Data Network is a non-centralised and web-based network that brings together consistent and quality-assured life cycle emission and resource consumption data from different sources. These data sets comply with requirements related to the ILCD Handbook. All data providers can join this network free of charge and give access to data under their own terms (for free, fee, members, etc). Consistency and quality assurance enables data from different sources to be used in one study without creating discrepancies and helps to reduce costs for users.

European Reference Life Cycle Database (ELCD)

The European Reference Life Cycle Database (ELCD) provides life cycle emissions and resource consumption data from EU business associations and other sources for selected key materials (such as plastics, metals and chemicals), energy carriers, transport, and waste management services. These ELCD datasets are available free of charge. Data from the ELCD will be an input to the ILCD Data Network.

Source: Joint Research Center, European Commission⁸

⁸ "Making sustainable consumption and production a reality. A guide for business and policymakers to Life Cycle Thinking and Assessment, JRC, 2010

The implementation of IPP and the promotion of eco-friendly products are largely linked to the greening of public procurement and the development of ecolabels (which are the subject of other activities in the frame of the current contract). However these tools cannot be seen in isolation and other initiatives are necessary either to ensure their efficiency or to complement them, upstream or downstream.

Two initiatives of this type are analysed below, one is the product panels put in place by Denmark in the past, and the other is the new initiative developed following a decision of the Nordic Council of Ministers.

The experience of product panels in Denmark (predominantly on the demand side)

The Danish experience of product panels⁹ started in the mid nineties under the leadership of the Danish Environmental Protection Agency. Its overarching objective was "... to promote the development and sale of relatively cleaner products in (some) product areas". In addition, other objectives were established, namely to:

- "Create a dialogue forum for the important players within a product area for the purpose of introducing and coordinating measures that can contribute to the development and sale of cleaner products,
- provide and maintain a consistent overview of important activities in the product area in question, for the purpose of meeting the overall objectives of product initiatives,
- draw up an action plan for the area in question and organise and implement concrete activities outlined in this plan, and
- evaluate initiatives on an ongoing basis and help communicate results to the players of the product area in question"

The innovative approach of Danish product panels is to bring together stakeholders from different backgrounds to discuss and elaborate specific actions in order to promote greener products. It should be underlined that the panels were not oriented towards the benefits of the participating companies, but the objective was to disseminate widely the results to other stakeholders active on the market.

Half a dozen of product panels were initially put in place, with about 20 participants (nominated by public authorities) in each of them. Sectors selected included textile, electronics, goods transportation, agricultural products and retailers. In some other EEA Countries (Germany, Finland, Netherlands, Norway, Spain), similar initiatives were taken for sectors such as paper, sports footwear, furniture or paints.

Some conclusions can be drawn from the Danish experience, focusing (in this report) on the textile and electronics panels.

The goal of the textile panel was to develop a market for green textiles, especially to strengthen the demand side. Emphasis was given to increasing the application of the EU ecolabel by industry and the demand for them. This was supported by coordinated action from producers, retailers, NGOs, the ecolabelling and public authorities to push the EU ecolabel on the market. The work carried out by the panel lead to some positive results:

- In February 2001, 11 EU ecolabel licenses have been granted to textile producers, this number increased in autumn 2007 to 30;

⁹ See in particular ' Innovative Approaches in European Sustainable Consumption Policies', IÖW, Frieder Rubik et alii, 2009

- An environmental knowledge centre, financed by the Danish textile industry, was created and existed for several years, but was then closed down. Some of its activities were integrated in a textile centre.

The textile panel tried to link supply and demand based on the experience that success of greener textiles depends on higher consumers' awareness. The panel's work definitely contributed to the availability of greener textiles on the Danish market and probably beyond.

The Electronics panel began its work focusing on initiatives aimed at reducing environmental impacts of producing and using electronic products.

The panel prepared two action plans (2000-2003, and 2003-2006). During the early years, the panel gained knowledge about the making of greener electronics and disseminated that knowledge amongst Danish industry, drafting guidelines. The focus then moved towards retailers, procurement and final demand. Like for the textile industry, one of the proposals was to look for an eco-label like the Nordic Swan or an EU ecolabel, but this initiative failed because producers did not support it. A positive result was nevertheless the establishment of a new type of dialogue among key actors, but a measurable improvement can hardly be found beyond awareness raising.

In a nutshell, it could be concluded that the Danish product panels have different patterns and degrees of success. All panels contributed to a spreading out of a common understanding and they created a starting point for a spreading out of environmental awareness. The main conclusion is that product panels cannot succeed if they are put in place as a stand alone approach. On the contrary, they can facilitate upstream the good functioning of Ecolabel schemes, the greening of Public Procurement or the design of Voluntary Agreements to be decided by industry or by public authorities.

As singled out by F. Rubik and alii, the success of product panels depends also on a number of conditions: clear mandate and a clear target, overarching strategy of public authorities, appropriate composition of the panel, linkages between supply and demand sides, rules of work commonly agreed, dissemination strategies and adoption of action plans, as well as budgetary support.

Even though the product panel experience phased out in Denmark after 2001, several similar initiatives have taken place in other EU Member States in the context of IPP implementation. In Denmark, the national ETAP strategy (2007) encapsulates elements of the panel approach (see in particular the partnership for innovation). More recently, the National Bioeconomy Panel finds that the bioeconomy in Denmark is able to help create solutions to global challenges and, at the same time, foster growth and employment. The panel sheds light on some general barriers which inhibit the development of new bioeconomic value chains in Denmark, while suggesting specific interventions to overcome such barriers. Finally, the panel proposes¹⁰ a series of normative principles for future framework conditions capable of accelerating progress in this field.

A recent initiative from Nordic Countries¹¹ (predominantly on the supply side)

This initiative¹² aims at lowering the environmental impact of clothing and textile products. For such goods, production accounts for a huge part of the overall environmental impact and the main challenge related to sustainability is therefore to focus on more sustainable production methods.

¹⁰ Statement by the National Bioeconomy Panel, September 2014

¹¹Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway and Sweden.

¹² 'Well dressed in a clean environment: Nordic Action plan for sustainable fashion and textiles', Nordic Council of Ministers, Nordic Council of Ministers Secretariat, 2015

The Nordic Council of Ministers for the Environment has considered that 3 issues are of particular importance in order to promote green products this sector: limitation of harmful chemicals, promotion of more sustainable materials and common requirements for suppliers amongst Nordic countries.

Reducing the use of harmful chemicals is a priority since amongst chemicals used in textile production, some are harmful to the environment and health. These include allergenic, carcinogenic and endocrine-disrupting chemicals. Some are washed out during the production process and often end up polluting the environment in the producing countries, while others remain in the textiles, creating a risk for consumers, e.g. allergens. Given that production often takes place outside the EU and involves long supply chains, there is a need for greater knowledge about the use of chemicals (chemicals no longer allowed within the EU are still used in the production of imported textiles).

One solution could be that textiles are sold with a sewn-in or electronic "label" that lists the problematic chemicals contained in the product. However, in connection with the textile labelling regulation, the EU Commission decided in 2014 that the current requirements on textile products are sufficient. It will require a focused effort by the Nordic countries if a chemical labelling system for textiles is to be made a higher priority on the EU agenda. There are also other ways of implementing labelling requirements for chemicals in textiles, e.g. via REACH.

The Nordic countries are committed to work together to propose that the EU strengthens the regulation of chemicals in textiles, with a view toward reducing particularly harmful chemicals in textiles in the period 2015–2017.

Under the coordination of the Danish EPA, Nordic countries intend to realise by 2016 an analysis of the current initiatives concerning the labelling of chemicals in textiles. This analysis will identify the need for labelling (including positive and negative side effects), which substances should be covered, as well as legal and practical issues related to implementation. The analysis should propose a strategy for a labelling system for chemicals in textiles. Nordic co-operation should also provide input into the strategy being developed by the EU (scheduled for publication in 2018) for a toxic-free environment, in order to strengthen the development of sustainable replacements, including non-chemical solutions.

Promoting more sustainable materials is another priority in Nordic countries since they have at their disposal various materials that could be used in textile production; this could also help to re-establish textile production in the Nordic Region and make an important contribution to the Nordic bioeconomy. In Sweden and Finland, chemical wood pulp is considered to have particularly great potential. Research is also being conducted into the production of textiles from materials such as milk, seaweed and fish scales. However, the actual degree of sustainability for these materials will depend on the specific production processes.

Another way to develop more sustainable materials is to improve the environmental profile of existing materials, such as wool and cotton, by reducing the consumption of energy, chemicals and water. In Sweden and Finland, research is being conducted into chemical wood pulp as an alternative to cotton. In Finland, industry is conducting research into creating new markets for advanced cellulose products, including textiles. Norway has studied the possibility of bringing back Norwegian wool as a textile material, while Finland is focusing on the use of hemp in textile production. In Denmark, research is carried out about new uses for enzymes in textile production, given that they can reduce a textile's environmental impact and improve the durability of finished products. Test results have shown a reduction in the consumption of water, energy and chemicals. At Nordic level, work is on going to develop a global innovation platform for the use of sustainable materials throughout the value chain, as well as on textiles' bioeconomic potential. Given the number of current initiatives, Ministers have concluded that there is no immediate need to launch further Nordic initiatives.

Promotion of joint Nordic supply-chain management is the third priority identified to contribute to the green of textile and clothing products. Although many industry players have developed their own guidelines, none of these apply to all of the companies involved and set appropriate minimum requirements – such as maximum water consumption or energy consumption per kg of clothes. Most of the industry players in the Nordic Region are engaged in work with more sustainable textiles, and as such have established their own systems for placing demands on suppliers and ensuring compliance. Big companies in the EU can consult the Best Available Techniques Reference Document, which sets production-related requirements for textile manufacturers, among others. The EU and the Nordic ecolabels have been on the market for many years. However, few of the textile products available on the market carry an ecolabel. In recent years, there has been increasing interest in environmental accounts (Natural Capital Accounting) as a tool that can inform decisions regarding sustainability. The industry is in the process of developing an indicator based tool – the so-called “Higg Index” – for assessing the sustainability of clothing and shoes throughout the supply chain.

In addition to existing initiatives, Ministers consider that Voluntary agreements on sustainable textile production could bring a useful contribution to making textile and clothing greener. A study will be conducted on the feasibility of a voluntary business-driven industry agreements concerning minimum requirements for textile production environmental parameters and social aspects. The initiative launched in 2015, will run until 2017. The Environmental Protection Agency, Denmark will be responsible for the co-ordination of the work.

The first part of the process will consist of meetings and discussions in a working group dealing with:

- opportunities for co-ordination with national industry initiatives and with national or international standards being developed in the area;
- linking with existing international standards for social responsibility and corporate social responsibility;
- potential industry partners, e.g. companies and trade associations, including evaluation of relevant types of company (e.g. production companies and retailers) – and, potentially, authorities;
- solutions to facilitate supply-chain management and traceability;
- areas in which it may be relevant to set minimum requirements, e.g. with negative lists (Restricted Substances List) for chemicals or to limit pollution; improvements to working conditions; waste management; and water consumption.

The second part of the process could lead to drawing up industry guidelines with relevant minimum requirements and dissemination of knowledge about the industry guidelines.

Conclusions

LCA is broadly recognized as the most relevant method for assessing the environmental impacts of goods and services. This multicriteria approach, in spite of various methodological challenges, has become a necessary step for the identification of eco-friendly products and their promotion in the frame of the EU Integrated Product Policy. From the experience of Denmark, Sweden, Finland and other EU/EEA Nordic countries, it can be concluded that promotion of green products is a continuous challenge which should be tackled both on the demand and the supply side. Belarus could consider whether its move towards Green Economy could benefit from the creation of a Life Cycle Center linked to MNREP and which could provide over time an updated knowledge based support to other initiatives contributing to more sustainable production and consumption patterns. Given its experience, cooperation with the EU Joint Research Center could be explored.

2 TOWARDS UNIFIED CRITERIA TO IDENTIFY GREEN PRODUCTS

2.1 The single market for green products initiative

The European Commission adopted in 2011 a 'Roadmap to a Resource Efficient Europe'¹³, fully consistent with objectives already in place under IPP and the Sustainable Consumption and Production Action Plan. Amongst others, the Roadmap includes the commitment to

'Establish a common methodological approach to enable Member States and the private sector to assess, display and benchmark the environmental performance of products, services and companies based on a comprehensive assessment of environmental impacts over the life-cycle ('environmental footprint')'.

The adoption two years later of the initiative 'Building the Single Market for Green Products'¹⁴ is a follow-up of this commitment. The rationale of this initiative is that providing more reliable information on whether production and consumption is green will be beneficial for companies, households, and the environment.

Progress needed in the EU for product environmental information!

Six out of ten (EU consumers) think that current product labels do not provide enough information about their environmental impact (59%) and a third more believe the information is unclear for some products (32%).

Respondents were also asked where they would like to find environmental information about a product and they could give several answers. Most people would like to find environmental information on product labels (81%), with fewer people supporting listing such information on the shelf containing the product (55%) or in advertisements about the product (41%).

Only just over half of EU citizens generally trust producers' claims about the environmental performance of their products (52%). This represents a small increase in trust since the previous survey in 2009 (+3).

More than nine out of ten respondents agreed that the lifespan of products available on the market should be indicated (92%).

Source: "Attitudes of Europeans towards building the single market for green products", EUROBAROMETER Survey, July 2013

The difficulty, in view of the creation of a single EU market for green products, is that in spite of all efforts made to harmonise LCA methods and data, there is still no common definition of what a 'green product' is, or of what makes a 'green organisation'. Instead, economic operators are confronted with a mosaic of public or private methods¹⁵, usually inspired by LCA, but diverging between countries or sectors, far from the legitimate consumers' expectations.

¹³ COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS, Roadmap to a Resource Efficient Europe, 2011.

¹⁴ COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL Building the Single Market for Green Products. Facilitating better information on the environmental performance of products and organisations, 2013

¹⁵ There is a proliferation of methods for measuring the environmental performance of products and organisations. Considering the area of carbon measurement only, studies carried out by the European Commission (2010) identified 62 leading initiatives and methods on product carbon footprinting and 80 on carbon reporting.

This initiative will allow in the medium term a wider uptake of eco-friendly goods and services and will develop greener practices by companies on the EU market. This would not only contribute to reducing the environmental impacts of EU consumption but also provide opportunities for economic growth, and job creation. Green products are often based on innovative technologies and are results of advanced production processes and more sustainable distribution channels. Policies that stimulate the uptake of eco-friendly products can bring additional economic benefits – it can create new markets, foster innovation, and make companies more competitive and less reliant on scarce and costly resources.

The Single Market for Green Products initiative proposes a set of actions:

- it establishes two methods to measure environmental performance throughout the lifecycle, the Product Environmental Footprint (PEF) and the Organisation Environmental Footprint (OEF);
- it recommends the use of these methods to Member States, companies, private organisations and the financial community through a Commission Recommendation;
- it announces a three-year testing period to develop product - and sector-specific rules - through a multi-stakeholder process;
- it provides principles for communicating environmental performance, such as transparency, reliability, completeness, comparability and clarity;
- it supports international efforts towards more coordination in methodological development and data availability.

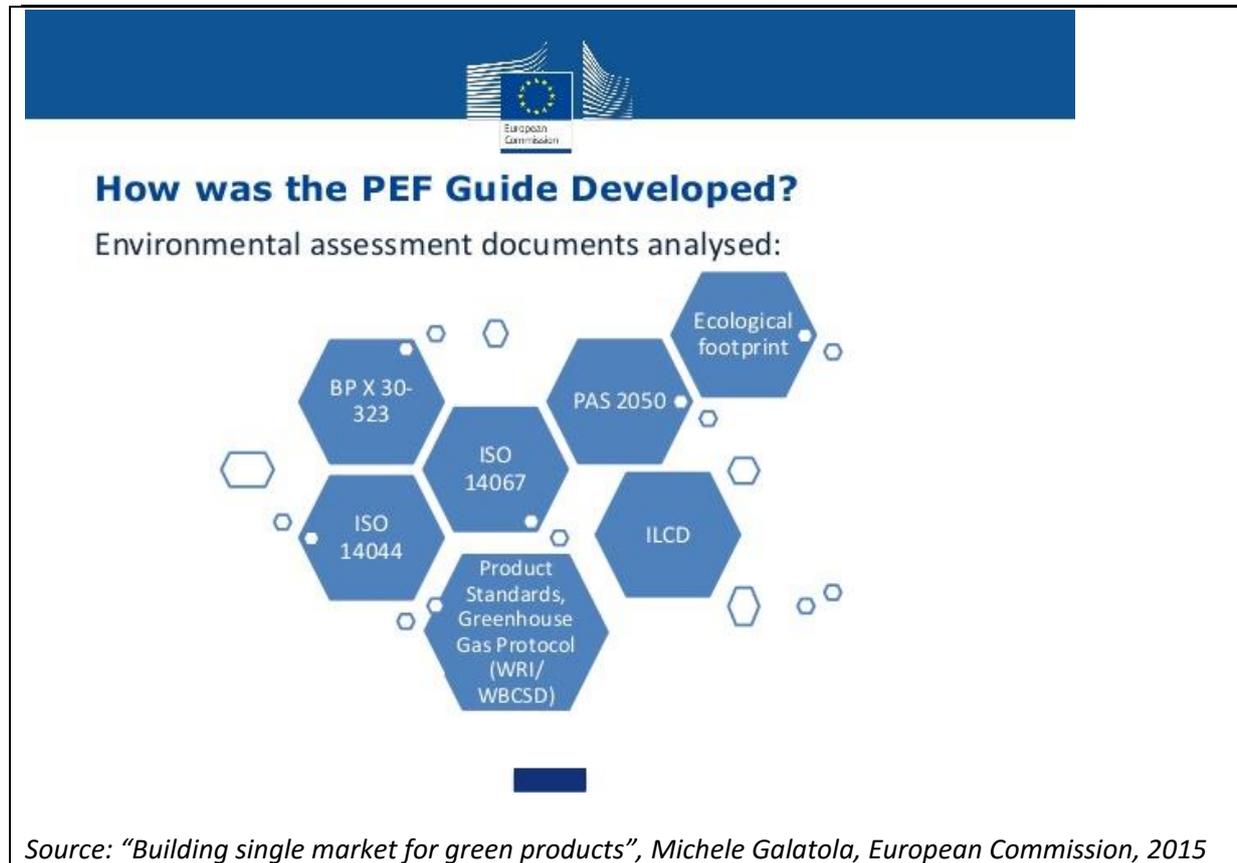
2.2 The Product Environmental Footprint

An EU Recommendation¹⁶ was indeed adopted in 2013. This Recommendation promotes the use of the environmental footprint methods related to the measurement or communication of the life cycle environmental performance of products or organisations

The Product Environmental Footprint (PEF) is a multi-criteria measure of the environmental performance of a good or service throughout its life cycle. PEF information is produced for the overarching purpose of helping to reduce the environmental impacts of goods and services.

This Recommendation provides guidance on how to calculate a PEF, as well as how to create product category-specific methodological requirements for use in Product Environmental Footprint Category Rules (PEFCRs). PEFCRs are a necessary extension of and complement to the general guidance for PEF studies. As they are developed, PEFCRs will play an important role in increasing the reproducibility, consistency, and relevance of PEF studies. PEFCRs help focus on the most important parameters, thus also possibly reducing the time, efforts, and costs involved in conducting a PEF study.

¹⁶ COMMISSION RECOMMENDATION of 9 April 2013 on the use of common methods to measure and communicate the life cycle environmental performance of products and organisations



The European Commission, with the support of the Joint Research Centre, has developed a proposed (a rather complex) methodology for the calculation of the environmental footprint of products, primarily aimed at technical experts.

Each requirement specified in the PEF Guide has been chosen taking into consideration the recommendations of similar, widely recognised environmental accounting methods and guidance documents. Specifically, the methodology guides considered were:

- ISO standards (in particular: ISO 14044(2006), Draft ISO/DIS 14067(2012); ISO 14025(2006), ISO 14020(2000)),
- the ILCD (International Reference Life Cycle Data System) Handbook;
- the Ecological Footprint Standards (Global footprint network);
- the Greenhouse Gas Protocol (WRI/WBCSD);
- the general principles for an environmental communication on mass market products (ADEME);
- and the specification for the assessment of the life cycle greenhouse gas emissions of goods and services (PAS 2050, 2011).

The PEF and OEF method can potentially cover 14 impact categories:

- climate change;
- ozone depletion;
- human toxicity – cancer effects;
- human toxicity - non-cancer effects;
- particulate matter/respiratory inorganics;
- ionising radiation;
- photochemical ozone formation;

- acidification;
- eutrophication – terrestrial;
- eutrophication – aquatic;
- ecotoxicity - freshwater aquatic;
- land use;
- resource depletion - water;
- resource depletion – mineral and fossil fuel.

In the spring of 2013, the Commission launched a call for pilots to test this methodology (over the period 2013-2016) with specific product sectors, in order to:

- develop workable product category rules (PEFCRs);
- test the verification objectives;
- test different communication options.

A second phase (2014/Dec 2016) will build on an in-depth evaluation of the results of the three-year testing and additional actions carried out under the Recommendation. Based on this evaluation, the Commission will decide on further policy applications of the PEF and OEF methods, probably in 2017.

Conclusions

In spite of the general recognition of the merits of Life Cycle Thinking and Life Cycle Assessment, there is still no agreement on a precise method for benchmarking the environmental performance of products. No surprise therefore if the EU consumers consider that environmental information on products remain rather poor and sometimes misleading. The Single Market for Green Products initiative launched in 2011 aims at filling these gaps through methods of calculation of Product Environmental Footprint (and Organisation Environmental Footprint), using ISO standards and other international work available. Work on PEF started in 2013 and will be evaluated end 2016. Here again, it would seem relevant for Belarus to follow closely this work, not only in view of potential exports to the EU but having also in mind the internal requirements of Green Economy.

Timing seems appropriate to include this item on the agenda of the MNREP in view of its future work on Green Economy related for instance to ecolabelling, greening of public procurement or development of voluntary environmental agreements.

3. ANALYSIS OF PRINCIPLES FOR THE ESTABLISHMENT OF REQUIREMENTS FOR ECO-PRODUCTS

3.1 The basic principles of the EU ecodesign directive

“As much as 80% of a product’s environmental impact is in fact determined at the design stage. What’s more, the resource extraction and manufacturing stages can suck up as much energy, and emit as much CO₂, as during the entire use stage. To give a scale of grandeur, laptops have a raw material consumption of 270 kg for every kilogramme of the final product’s weight”¹⁷.

Ecodesign has focussed for long on energy consumption. The first EU legislation in this respect was adopted in 2005 and was then reviewed in 2009.

The EU Ecodesign Directive¹⁸ establishes a framework under which manufacturers of energy-related products are obliged to reduce the energy consumption and other negative environmental impacts occurring throughout the product life cycle: while its primary objective is to reduce energy use, it is also aimed at reducing other environmental impacts including resource use, water use, emissions, waste (through increased recyclability).

Its scope currently covers both energy using products (such as TVs, refrigerators, washing machines, computers, machine tools, air conditioning equipment, light bulbs, ...) and energy-related products (= having an impact on energy consumption) such as windows or insulation materials.

Eco design parameters for products are described in Annex 1 of this directive, as illustrated in the table below.

Ecodesign parameters for products

1.1. In so far as they relate to product design, significant environmental aspects must be identified with reference to the following phases of the life cycle of the product:

- (a) raw material selection and use;
- (b) manufacturing;
- (c) packaging, transport, and distribution;
- (d) installation and maintenance;
- (e) use; and
- (f) end-of-life, meaning the state of a product having reached the end of its first use until its final disposal.

1.2. For each phase, the following environmental aspects must be assessed where relevant:

- (a) predicted consumption of materials, of energy and of other resources such as fresh water;
- (b) anticipated emissions to air, water or soil;
- (c) anticipated pollution through physical effects such as noise, vibration, radiation, electromagnetic fields;
- (d) expected generation of waste material; and

¹⁷ Stephane Arditi, European Environmental Bureau

¹⁸ DIRECTIVE 2009/125/EC of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products

(e) possibilities for reuse, recycling and recovery of materials and/or of energy, taking into account Directive 2002/96/EC.

1.3. In particular, the following parameters must be used, as appropriate, and supplemented by others, where necessary, for evaluating the potential for improving the environmental aspects referred to in point 1.2:

- (a) weight and volume of the product;
- (b) use of materials issued from recycling activities;
- (c) consumption of energy, water and other resources throughout the life cycle; EN 31.10.2009 Official Journal of the European Union L 285/23;
- (d) use of substances classified as hazardous to health and/or the environment according to Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances and taking into account legislation on the marketing and use of specific substances, such as Council Directive 76/769/EEC of 27 July 1976 on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations, or Directive 2002/95/EC;
- (e) quantity and nature of consumables needed for proper use and maintenance;
- (f) ease for reuse and recycling as expressed through: number of materials and components used, use of standard components, time necessary for disassembly, complexity of tools necessary for disassembly, use of component and material coding standards for the identification of components and materials suitable for reuse and recycling (including marking of plastic parts in accordance with ISO standards), use of easily recyclable materials, easy access to valuable and other recyclable components and materials; easy access to components and materials containing hazardous substances;
- (g) incorporation of used components;
- (h) avoidance of technical solutions detrimental to reuse and recycling of components and whole appliances;
- (i) extension of lifetime as expressed through: minimum guaranteed lifetime, minimum time for availability of spare parts, modularity, upgradeability, reparability;
- (j) amounts of waste generated and amounts of hazardous waste generated;
- (k) emissions to air (greenhouse gases, acidifying agents, volatile organic compounds, ozone depleting substances, persistent organic pollutants, heavy metals, fine particulate and suspended particulate matter) without prejudice to Directive 97/68/EC of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery;
- (l) emissions to water (heavy metals, substances with an adverse effect on the oxygen balance, persistent organic pollutants); and
- (m) emissions to soil (especially leakage and spills of dangerous substances during the use phase of the product, and the potential for leaching upon its disposal as waste).

Source: DIRECTIVE 2009/125/EC – Annex 1

Interestingly, the Ecodesign directive can also be implementive through Voluntary agreements (see in this respect the report prepared under Activity 2.4 of this Project). This is the case for instance for imaging equipment and for game consoles.

The Ecodesign Directive is complemented by the Energy Labelling Directive¹⁹ providing information about the performances of products. This Directive establishes a framework for the harmonisation of

¹⁹ DIRECTIVE 2010/30/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 19 May 2010 on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products

national measures on end-user information, particularly by means of labelling and standard product information, on the consumption of energy and where relevant of other essential resources during use.

Energy labelling in the EU

Member States shall ensure that:

(a) information relating to the consumption of electric energy, other forms of energy and where relevant other essential resources during use, and supplementary information is, in accordance with delegated acts under this Directive, brought to the attention of end-users by means of a fiche and a label related to products offered for sale, hire, hire-purchase or displayed to end-users directly or indirectly by any means of distance selling, including the Internet;

(b) the information referred to in point (a) is provided in respect of built-in or installed products only where required by the applicable delegated act;

(c) any advertisement for a specific model of energy-related products covered by a delegated act under this Directive includes, where energy-related or price information is disclosed, a reference to the energy efficiency class of the product;

(d) any technical promotional material concerning energy-related products which describes the specific technical parameters of a product, namely, technical manuals and manufacturers' brochures, whether printed or online, is provided to end-users with the necessary information regarding energy consumption or shall include a reference to the energy efficiency class of the product.

Source: Directive 2010/30/EU, article 4

According to estimates made by the European Commission, the result of these labels and standards will be an energy saving in the EU of around 166 Mio tons by 2020, roughly equivalent to the annual primary energy consumption of Italy. For consumers, this means a saving of €465 per year on household energy bills.

A specific example: Ecodesign requirements and labelling for vacuum cleaners

1. Specific Ecodesign requirements for vacuum cleaners shall comply with the following requirements:

(a) From 1 September 2014:

- annual energy consumption shall be less than 62,0 kWh/year,
- rated input power shall be less than 1 600 W,
- dust pick up on carpet shall be greater than or equal to 0,70. This limit shall not apply to hard floor vacuum cleaners,
- dust pick up on hard floor shall be greater than or equal to 0,95. This limit shall not apply to carpet vacuum cleaners.

These limits shall not apply to water filter vacuum cleaners.

(b) From 1 September 2017:

- annual energy consumption shall be less than 43,0 kWh/year,
- rated input power shall be less than 900 W,

- dust pick up on carpet shall be greater than or equal to 0,75. This limit shall not apply to hard floor vacuum cleaners,
- dust pick up on hard floor shall be greater than or equal to 0,98. This limit shall not apply to carpet vacuum cleaners,
- dust re-emission shall be no more than 1,00 %,
- sound power level shall be less than or equal to 80 dB,
- the hose, if any, shall be durable so that it is still useable after 40 000 oscillations under strain,
- operational motor lifetime shall be greater than or equal to 500 hours.

The annual energy consumption, rated input power, dust pick up on carpet, dust pick up on hard floor, dust re-emission, sound power level, durability of the hose and operational motor lifetime are measured and calculated in accordance with Annex II.

2. Information to be provided by manufacturers

(a) The technical documentation, booklet of instructions and free access websites of manufacturers, their authorised representatives, or importers shall contain the following elements:

- any information required to be published in respect of the vacuum cleaner under any delegated acts adopted under Directive 2010/30/EU of the European Parliament and of the Council,
- short title or reference to the measurement and calculation methods used to establish compliance with the above requirements,
- for hard floor vacuum cleaners, mention that they are not suitable for use on carpets with the delivered nozzle,
- for carpet vacuum cleaners, mention that they are not suitable for use on hard floors with the delivered nozzle,
- for appliances that are enabled to function also for other purposes than vacuum cleaning, the electric input power relevant to vacuum cleaning if this is lower than the rated input power of the appliance,
- as which of the following three groups the vacuum cleaner should be tested: general purpose vacuum cleaner, hard floor vacuum cleaner or carpet vacuum cleaner.

(b) The technical documentation and a part for professionals of the free access websites of manufacturers, their authorised representatives, or importers shall contain the following elements:

- information relevant for non-destructive disassembly for maintenance purposes, in particular in relation to the hose, suction inlet, motor, casing and cable,
- information relevant for dismantling, in particular in relation to the motor and any batteries, recycling, recovery and disposal at end-of-life.

Source: Commission Regulation (EU) No 666/2013 of 8 July 2013 implementing Directive 2009/125/EC with regard to ecodesign requirements for vacuum cleaners – Annex 1

Under the very recent Circular Economy package (see next paragraph), the European Commission will go farther in the implementation work related to the Ecodesign Directive. It will support product requirements that makes products more durable, and easier to repair and recycle.

This should be an opportunity to address in a more balanced way not only the energy impact of products but their broader environmental footprint, improving benefits which can be expected from ecodesign.

3.2 The principles of Circular Economy in the EU (including packaging and re-use)

One stage of paramount importance in order to assess how environment friendly a product is relates to its end of life. This was illustrated for instance by EU legislation on end of life vehicles, and other legislative requirements linked to waste management.

However, the most important evolution of EU policy has been recently to consider waste management in the more comprehensive context of Circular Economy, with the adoption on 2 December 2015 of a Circular Economy Action Plan²⁰ facilitating EU transition towards a circular economy which will boost global competitiveness, foster sustainable economic growth and generate new jobs.

The proposed actions will contribute to "closing the loop" of product lifecycles through greater recycling and re-use, and bring benefits for both the environment and the economy. The plans will extract the maximum value and use from all raw materials, products and waste, fostering energy savings and reducing Green House Gas emissions. The proposals cover the full lifecycle: from production and consumption to waste management and the market for secondary raw materials. This transition will be supported financially by ESIF funding, €650 million from Horizon 2020 (the EU funding programme for research and innovation), €5.5 billion from structural funds for waste management, and investments in the circular economy at national level.

"Our planet and our economy cannot survive if we continue with the 'take, make, use and throw away' approach. We need to retain precious resources and fully exploit all the economic value within them. The circular economy is about reducing waste and protecting the environment, but it is also about a profound transformation of the way our entire economy works. By rethinking the way we produce, work and buy we can generate new opportunities and create new jobs."

F. Timmermans, Vice President of the EU Commission (December 2015)

The Circular Economy Package gives a major signal to economic operators that the EU is using all the tools available to transform its economy, opening the way to new business opportunities and boosting competitiveness. The broad measures for changing the full product lifecycle go beyond a narrow focus on the end-of-life stage and underline the clear ambition to transform the EU economy upstream. Innovative and more efficient ways of producing and consuming should increasingly emerge as a result of the incentives put in place. Sectoral measures are also set out, as well as quality standards for secondary raw materials.

Main actions in order to promote Circular Economy in the EU

- Funding of over €650 million under Horizon 2020 and €5.5 billion under the structural funds;

²⁰ COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS -Closing the loop - An EU action plan for the Circular Economy – 2 December 2015

- Development of quality standards for secondary raw materials to increase the confidence of operators in the single market;
- Measures in the Ecodesign working plan for 2015-2017 to promote reparability, durability and recyclability of products, in addition to energy efficiency, in cooperation with European Standardisation Organisations;
- A revised Regulation on fertilisers, to facilitate the recognition of organic and waste-based fertilisers in the single market and support the role of bio-nutrients;
- A strategy on plastics in the circular economy, addressing issues of recyclability, biodegradability, the presence of hazardous substances in plastics, and the Sustainable Development Goals target for significantly reducing marine litter;
- A series of actions on water reuse including a legislative proposal on minimum requirements for the reuse of wastewater, for instance for irrigation.

A proposal is also tabled in order to revise Waste legislation. This proposal sets quantified targets for reduction of waste and establishes an ambitious long-term path for waste management and recycling.

Key elements of the revised waste proposal include:

- A common EU target for **recycling 65% of municipal waste** by 2030;
- A common EU target for **recycling 75% of packaging waste** by 2030;
- A binding landfill target to **reduce landfill to maximum of 10%** of all waste by 2030;
- A ban on landfilling of separately collected waste;
- Promotion of economic instruments to discourage landfilling ;
- Simplified and improved definitions and harmonised calculation methods for recycling rates throughout the EU;
- Concrete measures to promote re-use and stimulate industrial symbiosis –turning one industry's by-product into another industry's raw material;
- Economic incentives for producers to put greener products on the market and support recovery and recycling schemes (e.g. for packaging, batteries, electric and electronic equipment, vehicles).

Conclusions

A green economy project is directly linked to the promotion of sustainable production and consumption . Since the environmental footprint of products covers their impact from 'cradle to grave', there is a need to anticipate these impacts as early as possible, and therefore from the design stage. The EU ecodesign directive started such a process for electric and electronic goods, contributing mainly to better performance related to energy consumption. A more comprehensive approach has been developed recently with the Circular Economy package which reinforces the Ecodesign requirements together with ambitious recycling targets, and focus on some new priorities such as plastics, fertilisers or water re-use.

Depending on Belarus' priorities (energy efficiency, resource efficiency, waste management, Green House Gases Emissions reduction, ...) move towards Green Economy could be shaped either to focus on a limited range of products and environmental issues (like the initial Ecodesign Directive) or to propose a more radical change based on resource efficiency (like the Circular Economy package). The second option would definitely be preferable in order to develop exports to the EU and more generally the competitiveness of the Belarussian economy.

4 RECOMMENDATIONS

Orientations for a possible strategy in Belarus to identify and promote eco-friendly products**1. A knowledge-based approach**

Promotion of eco-friendly products can only be knowledge-based. The involvement of the Joint Research Center in the EU work on Life Cycle Analysis or on Product Environmental Footprint illustrates that scientific research and coordination are needed. Given its scientific capabilities, Belarus is certainly in very good position to develop sound criteria and methodologies for the identification and the promotion of eco-friendly products. Scientific assessments can also be used to communicate with consumers and provide them with all the information needed, on domestic and external markets.

The idea of creating a Life Cycle Center (finding inspiration in the Swedish or Danish experiences) linked to MNREP could be explored as an element of such a knowledge-based approach. Possibilities of international cooperation should be explored (see below).

2. Creating a green supply

Economic operators may well need guidance (such as guidelines) in order to change their traditional production patterns. Companies first of all need in advance clear information about the criteria defining eco-friendly products. The example of the Nordic countries involved in the initiative of greening the clothing and textile sectors also shows that a close cooperation with industry can be put in place, having in mind environmental protection, but also competitiveness (through resource efficiency) and exports objectives. The idea of Voluntary Environmental Agreements could be used in Belarus with frontrunners interested in developing simultaneously their business and their green image. Some initiatives may also be taken to promote green technologies and eco-innovation.

3. Creating a green demand

Consumers generally have a natural preference for products respecting environment, but cultural or economic factors may also lead them to make other –if not opposite- choices. Once well identified eco-friendly products are available on the market, their success depends on a variety of factors:

- are consumers adequately informed?
- can eco-products claim the same quality than others?
- can eco-friendly products be sold at an attractive price?

Each of these issues should be dealt with.

Information campaign and labelling can probably remedy the issue, if any, of consumers' awareness. Quality of eco-friendly products should be certified at the time their environmental performance is assessed, something which could be specified through appropriate labelling. The most difficult issue is to ensure that eco-friendly products can be put on the market at affordable prices. Higher volume of sales could facilitate economies of scale, but several instruments may be necessary, such as differentiated taxation, green public procurement or an active eco-labelling policy.

4. Creating the right institutional frame

Even if the functioning of the market can contribute to the promotion of eco-friendly products, such a process will take time and transition towards sustainable production and consumption could hardly take place at the expected speed without the right institutional frame. Authorities in charge of the promotion of green products should be clearly identified, see for instance the role explicitly devoted

to the Environmental Protection Agency in Denmark for actions linked to the greening of the clothing and textile sectors. Similarly, the Circular Economy Action Plan in the EU is the result of common work done by various departments of the European Commission in charge of Environment, Industry, Energy, Agriculture as well as the Joint Research Center.

In Belarus, MNREP would certainly have to play a pivotal role in the coordination of all initiatives related to the promotion of eco-friendly products, but cooperation should take place with other authorities, be it other Ministries (Economy, Energy, Industry, Transport ...) or local authorities. Coordination with scientific authorities is also of major importance, with the objective to promote eco-innovation through cooperation institutions and mechanisms between academics and industrialists.

5. Developing the right governance

Even if eco-friendly products are available, consumers have a final say in deciding whether they will buy them or not. The example of products panels, first in Denmark and then in other countries, evidenced serious advantages in involving stakeholders at an early stage of the process leading to the creation of eco-friendly products.

Inviting representatives of producers and consumers to confront their views before placing new eco-friendly products on the market reduces the risks of investing in eco-innovations which would not be welcome by the final consumers.

Developing the consumers' sense of ownership for eco-innovative processes and products goes also in the direction of awareness raising of public at large.

Most probably, involvement of stakeholders should also be envisaged upstream, in the definition and the development of what has been called in the EU the Integrated Product Policy. In Belarus, involvement of consumers and civil society representatives in the shaping of the component of the Green Economy related to eco-friendly products could certainly be beneficial. Public Private Partnership (PPP) should also be considered.

6. Legislation is needed to protect consumers

Policy makers are often tempted to consider that binding legislation is the most efficient way to reach agreed objectives. There is however a distinction to be made in a case such as the promotion of eco-friendly products: legislation can ensure that identification of green products is transparent and objective; legislation cannot dictate consumers' final choice.

Consumers' protection definitely requires that they are not abused by self-claimed labels, or misleading information about the environmental performance of goods and services on the market. In this respect, methodologies must be based on sound scientific criteria and legal protection is necessary. LCA, PEF, OEF and any other method for the identification of green goods and services must follow transparent rules; this is even more obvious when these criteria are used for Government's policies on eco-labelling or Public Procurement (these issues are dealt with in other components of the current Contract).

At the same time, consumers cannot be forced to give their preference to eco-friendly products, and the right policy may be to develop progressively the market share of these products. The

responsibility of the Belarussian authorities could be both to provide legal certainty about the criteria to be used for the identification of eco-friendly products, and to pick up some industries where the environmental impact of eco-friendly products would make a visible difference.

7. Starting with low hanging fruits?

It could hardly be envisaged to promote immediately eco-friendly products in all sectors. Even in countries well advanced in this field, some sectors or some industries have been frontrunners, and identification of frontrunners may be a cornerstone for the promotion of sustainable production and consumption.

It could be proposed to Belarus to start with a number of Pilot projects in some priority sectors, possibly linked to public health (given that this issue may be considered by consumers as of greater importance than purely environmental challenges), where technologies are available for a switch towards greener products, or where public procurement could be a decisive instrument to promote changes in consumption patterns. As illustrated in the EU by ecolabelling schemes, promotion of eco-friendly products in Belarus could be initiated with less complex products (paper, paints or textile before machine tools, medical equipment or car/truck industry) in cooperation with interested stakeholders. Particular attention should be paid to export oriented sectors, such as those targeting the EU market where consumers are ready to buy products because of their reduced environmental footprint.

8. Developing International Cooperation

Considerable work on methodologies to identify Green Products has been carried internationally. The most significant examples are probably the work done by ISO (in particular standards 14040 and 14044) and, for the 28 EU Member States, by the Joint Research Center of the European Commission (European Platform on Life Cycle Assessment, International Reference Life Cycle Data System, European Reference Life Cycle Database, Product Environmental Footprint, the Organisation Environmental Footprint, ...).

A purely national approach in Belarus would prevent the country from benefitting of experience and expertise developed internationally. Belarus could therefore explore how to build on this work already done, keeping in mind that what is at stake is not only promotion of eco-friendly goods and services on the domestic market, but access to the EU market where priority will be given to resource efficient products contributing to Circular Economy.

MNREP could be mandated to analyse possibilities of international cooperations which could speed up the move towards Green economy through setting identification criteria for eco-friendly products.

9. Checking internal obstacles to promotion of eco-friendly products

Even though this aspect goes beyond the Terms of Reference of this Report, it could be important for Belarus to carry out an analysis of current obstacles (if any) to sustainable production and consumption in the country.

In addition to the various aspects dealt with above, some specific measures could be necessary. For instance, in case there would be a need to convince the consumers of the benefits of eco-friendly products, an awareness raising strategy could be relevant. The same approach could be applied in case other stakeholders would also hesitate, either amongst business circles or local authorities. This work

should be fine-tuned taking into account the instruments that Belarus intends to use to promote Green Economy, be it Ecolabelling, Public Procurement, Voluntary agreement, Indirect taxation or others.