



EU4Environment
Green Economy in Eastern Partner Countries



**SUSTAINABLE PUBLIC PROCUREMENT IN THE REPUBLIC OF MOLDOVA:
PRIORITIZATION OF PRODUCTS TO SUPPORT THE TRANSITION TO A GREENER
ECONOMY**

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Disclaimer

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Table of Abbreviation

BI	Business intelligence
CA	Contracting Authority
CO ₂	Carbon dioxide
CPV	Common Procurement Vocabulary
EO	Economical operator
EU	European Union
EU4Environment	“European Union for Environment Action”, funded by the European Union
FSC	Forest Stewardship Council
GDP	Gross Domestic Product
GPP	Green Public Procurement
LCC	Life Cycle Cost
OCDs	Open contracting data standard
OECD	Organisation for Economic Co-operation and Development;
PPA	Public Procurement Agency
SMEs	Small and medium sized enterprises
SPP	Sustainable Public Procurement
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization
USD	United States dollar

Table of Contents

1. Introduction	5
2. Overview of Sustainable Public Procurement	7
3. Objectives and expected results of the prioritisation exercise.	10
4. UNEP methodology of prioritisation of product for Sustainable Public Procurement	11
5. Preliminary prioritisation of products and services	12
5.1. STEP 1: Analysing the long list of product categories for Moldova SPP (following the EU list of product categories for which sustainability criteria are developed)	12
5.2. STEP 2: Analysis of short-listed products and goods based on public expenditure volume and number of contracts awarded.	15
5.3. STEP 3: Conduct a preliminary market study to check availability of shortlisted products or product groups on the market	17
6. Risks and benefits assessment	19
6.1. STEP 4: Measurement of negative environmental impacts	19
6.2. STEP 5: Measurement of positive socio-economic impacts	20
6.3. STEP 6: Assessment of the existence of certification and eco-labelling schemes	21
7. Final assessment of priority products -candidates for SPP in the Republic of Moldova	22

1. Introduction

In June 2016, the Republic of Moldova ratified the Public Procurement Agreement of the World Trade Organization, and this, together with the Moldova- European Union Association Agreement, previously signed in 2014. These agreements require Republic of Moldova to take all measures for the liberalization of trade and the development of the public procurement system in accordance with international best practices.

Since 2015, the national normative framework and practices in the area of public procurement have evolved considerably. Public procurement principles such as transparency, competition, non-discrimination were introduced to lead to the state budget and planning savings. The Republic of Moldova, aims at applying general principles for public procurement considering additional environmental and social factors. Introduction of the sustainability elements in the public procurement process can help to reduce the environmental impacts of the government consumption of goods and services. With sustainability issues moving progressively to the top of national and global priorities, the adoption of effective Sustainable Public Procurement (SPP) practices has become a necessity.

In the European Union (EU), public spending on works, goods and services represents around 14% of EU Gross Domestic Product (GDP), which is around €1.8 trillion per year. In the Republic of Moldova, this indicator reaches approximately 10% of GDP, or almost 20 billion lei MD (in 2022, approximately 1,12 billion USD).

By using the governmental purchasing power to procure sustainable goods and services, public authorities can make a significant contribution to achieving local, regional, national and international sustainability goals. Sustainable / Green public procurement can be an important driver of innovation, providing industry with real incentives to develop green products and services. This is particularly verifiable in sectors where public purchasers represent a large proportion of the market (e.g. construction, healthcare or transport).

Often, SPP can also mean lower costs for public authorities – especially when considering the costs of a contract over the whole life cycle of the products and services, and not just the purchase price. Purchasing energy-efficient or water-saving products, for example, can go a long way toward reducing utility bills. Reducing hazardous substances in products can reduce waste disposal costs and reduce risks for human health. SPP will help authorities to increase their environmental performances for example, by reducing greenhouse gas emissions, as well as to move closer to circular economy.

In order to fulfil the sustainable development and green economy objectives, the EU-funded EU4Environment Program supports Public Procurement Agency (PPA) of the Republic of Moldova to improve SPP related legislation, select priority products and services, develop sustainability criteria and guidelines, and launch SPP pilot tenders. One of the most important objectives of the project is the selection of priority products for SPP pilot public tenders - to achieve this objective, the prioritization exercise was initiated, with support from national and international experts, in close collaboration with the PPA.

This report analyses the stages and activities that were conducted in order to identify prioritized product and services categories, that could be selected in the future for the implementation of the SPP in Moldova. The prioritization process will expose other national processes that could contribute to SPP development in the country. The prioritization exercise was conducted according to the UNEP's methodology¹ (elaborated in 2012

¹ For further information regarding the UNEP's guidelines on SPP please see:

First edition (2012): <https://wedocs.unep.org/handle/20.500.11822/32157>

Second edition (2021): <https://www.unep.org/resources/publication/second-edition-uneps-sustainable-public-procurement-guidelines>

and updated in 2021) on SPP introduction and implementation, considering peculiarities of the Moldavian legal system and practices. The prioritisation exercise will focus at identifying a few new product categories, and later, once the SPP pilot tenders are successfully implemented and monitored, it may encourage contracting authorities (CAs) to elaborate sustainability criteria and procure other product categories that are produced in a more sustainable manner or have a smaller impact on the environment during the whole life cycle (production, use, utilization). This will not only expand the sustainable buying practices in the public sector but will also motivate private businesses to produce more environmentally friendly or innovative products. All above mentioned issues will also contribute to the country's policy on sustainable development in a long-term.

2. Overview of Sustainable Public Procurement

UNEP defines “Sustainable Procurement” as a process whereby organisations Procurement / meet their needs for goods, services, works and utilities in a way Green that achieves value for money on a whole life basis in terms of Procurement generating benefits not only to the organisation, but also to society and the economy, whilst minimising damage to the environment. “Sustainable Procurement” seeks to achieve the appropriate balance between the three pillars of sustainable development i.e. economic, social and environmental^{2 3}.

In the EU, the European Commission defines Green Public Procurement (GPP) as “a process whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life-cycle when compared to goods, services and works with the same primary function that would otherwise be procured”.⁴

SPP aims to strike the right balance between the three pillars of sustainable development - the economic, social, and environmental aspects.⁵ Sustainable development requires the CAs to consider social, economic, and environmental aspects and criteria while exercising their rights and obligations. None of the mentioned aspects shall have priority over others; rather, the right balance should be achieved. CAs have the opportunity to apply SPP criteria at any stage of procurement, from market research to contract enforcement and monitoring.

In order to start practicing SPP goods, works and services that are more environmentally friendly should be prioritise and their greener alternatives should be available on the market. It contributes to the sustainable and balanced development of the country, considering climate, environmental and social-economic challenges in a holistic way, as we as motivate businesses and markets to produce and offer more sustainable items.

In addition to the environmental dimension, SPP also considers social and economic aspects:

- The economic aspect is related to the use of the methodology for calculating the total “Life Cycle Cost”. Procurement must be efficient, which means accepting the most economically advantageous bid;
- The social aspect relates to the protection of social equity, various social groups, human rights and the principles of labour law;
- Environmental factors include emissions to air, land and water, climate change, biodiversity, natural resource use and water scarcity over the whole product life cycle.

Life-cycle costing (LCC) means considering all the costs that will be incurred during the lifetime of the product, work or service⁶:

- Purchase price and all associated costs (delivery, installation, insurance, etc.);
- Operating costs, including energy, fuel and water use, spares, and maintenance;
- End-of-life costs (such as decommissioning or disposal) or residual value (i.e. revenue from sale of product);

²https://www.oneplanetnetwork.org/sites/default/files/from-crm/sustainable_public_procurement_implementation_guidelines.pdf

³ Source: Procuring the Future – the report of the UK Sustainable Procurement Task Force, June 2006. The definition adopted by the Marrakech Task Force on Sustainable Public Procurement.

⁴ https://ec.europa.eu/environment/gpp/what_en.htm

⁵ https://ec.europa.eu/environment/gpp/versus_en.htm

⁶<https://ec.europa.eu/environment/gpp/lcc.htm>

- LCC may also include the cost of externalities (such as greenhouse gas emissions) under specific conditions laid out in the directives.

Some examples of best practices in the European countries show that at the initial stage of implementation of GPP/SPP, each country decides which procurement object should be purchased in a sustainable way according to its needs, based on their environmental and social politics and on the financial resources. The challenge usually is to achieve the goals of SPP and, at the same time, to ensure non-discrimination and proportionality towards economic operators as well as to make economically sound decisions. At the same time, it should also be noted that CAs are responsible for setting the requirements for each stage of the procurement, starting from the planning of the procurement, ending with the fulfilment of the contract in order to be achieved the goal which was set in the beginning. At the same time, provisions of EU Public Procurement Directives must be adhered to.

GPP is a policy tool that directs conventional procurement processes towards purchasing products, services and works that have a low environmental impact throughout their entire life cycle. This involves developing scientific and verifiable criteria **based on a life cycle approach** that can be included in procurement guidelines.

There are five key stages in the life cycle of a product categories or service:

- **Raw materials** – the supply of the necessary materials for the product or service;
- **Production** – transformation of raw materials and assembly of products;
- **Distribution** – bringing the product to the end user;
- **Use** – where the end user derives direct value from the product or service;
- **End of life** – what happens when the end user is done with the product or service.

Products consume resources in different ways throughout their life cycle. This should be considered when determining the purchase criteria. Products can be broadly classified into five categories based on environmental impact⁷:

1. **Raw material intensive product:** Most of the impact is created by the materials contained in the product. This includes energy consumption and waste generation in the production of raw materials, as well as social impacts such as disrupting local communities' access to minerals. Typical high-impact materials would include virgin metals, natural extracts such as perfume ingredients, and energy-intensive materials such as bricks and concrete. Electronic and electrical equipment are typical of products in this category.
2. **Manufacturing intensive product:** The processing of raw materials during production has the greatest impact through energy consumption, waste production and health and safety issues. Typical intensive manufacturing products use materials that undergo extensive processing during the manufacturing process or that produce large amounts of waste. Examples include many durable goods and chemicals.
3. **Distribution intensive product:** These products have maximum impact when they are distributed to different retailers in multiple regions. Such products also involve transportation, which adds to their environmental impact. Examples of these products include air transport and chilled fresh fruit and vegetables.
4. **Use intensive product:** Such products have the greatest impact on the environment during their use/operation. These products are also usually durable and go through several cycles of use. Examples include automobiles, dishwashers, and laser printers.

⁷ "A Review of LCA Methods and Tools and their Suitability for SMEs (Small and medium-sized enterprises)"; Hannele Lehtinen et al., University of Manchester.

5. **End-of-life intensive product:** These products generate the maximum impact at the end of their life, are usually non-biodegradable, contain hazardous substances and are difficult to recycle or dispose of safely. Examples of such products are different types of batteries.

Procurement criteria in this framework can be defined based on key environmental impacts across a product's life cycle stages.

3. Objectives and expected results of the prioritisation exercise.

This document provides an overview of the steps undertaken to prioritize products for the SPP.

To identify these goods, the UNEP methodology on SPP was used, and considered the availability of sustainable and green products on the market and the ability of the suppliers to offer such products were also analysed, and their environmental impact was also measured.

For the purposes of the prioritisation exercise, the relevant statistical data provided by the PPA are analysed. At the same time the statistical data obtained from the Application "Open contracting data standard (OCDs) based on Business intelligence (BI) tool for Moldova"⁸ were analysed. It is the analytical module based on the open data of the electronic public procurement system MTender (the electronic procurement system used in the Republic of Moldova to carry out procurement procedures).

⁸ <https://bi.open-contracting.org/moldova/>

4. UNEP methodology of prioritisation of product for Sustainable Public Procurement

In 2012 UNEP has developed guidelines for all stages of SPP promotion and implementation, including the prioritization exercise to identify and prioritize the objects to be procured by CAs in the initial phase of SPP implementation⁹.

The abovementioned instructions recommend conducting a legal review, including reviewing sustainable development policy documents and conducting market readiness analysis to identify whether prioritizes products for SPP are available in the market.

According to the guidelines, the prioritization exercise includes several steps:

- Preliminary prioritization of products;
- Evaluation of risks and benefits;
- Selection of the final categories of products that will be used for the implementation of the SPP.

All the steps performed in the Republic of Moldova and the results obtained are described below.

When analysing the best international practices, it was observed that each country, considering its particularities, including the geographical area, local production, as well as the level of understanding and introduction of the concept of SPP, establishes its own list of priority procurement objects. In some cases, when selecting a particular item of priority procurement, attention can be paid to encouraging of local production.

One of the objectives of SPP prioritization in the Republic of Moldova is that product and services categories are relevant based on energy and resource efficiency criteria.

Analysing the list of 20 product and services categories¹⁰ for which the relevant EU GPP criteria and technical specifications are already developed, those goods that have energy and resource efficiency criteria were taken as examples by the expert team in Moldova. The same list was analysed, because those 20 product and services categories with EU GPP criteria are also procured in the Republic of Moldova and they are planned to be tested.

Market readiness is a crucial factor for the introduction of SPP and its implementation in practice. Therefore, the performance of the prioritization exercise was also based on the results of the market analysis. The market research was carried out by researching the MTender Electronic Public Procurement System¹¹- a platform, where all public tenders are announced. Web pages of potential economic operators were also examined. In addition, in order to prepare this analysis, the economic operators were contacted by e-mail as well as by telephone (in 2022).

⁹ <https://wedocs.unep.org/bitstream/handle/20.500.11822/35412/IPE.pdf>

¹⁰ https://ec.europa.eu/environment/gpp/eu_gpp_criteria_en.htm

¹¹ <https://mtender.gov.md/tenders>

5. Preliminary prioritisation of products and services

5.1. STEP 1: Analysing the long list of product categories for Moldova SPP (following the EU list of product categories for which sustainability criteria are developed)

According to the recommendations of the UNEP prioritization methodology, at the first stage a list of products and services categories, that are the most procured in the Republic of Moldova, will be created. As mentioned above, while creating a long list for SPP in Moldova, a list of product and services categories in the European Union (EU) for which technical specifications and GPP criteria have already been developed was consulted¹² which includes:

1. Cleaning products and services;
2. Computers, monitors, tablets and smartphones;
3. Data centres, server rooms and cloud services;
4. Electricity;
5. Food Catering services and vending machines;
6. Furniture;
7. Imaging Equipment, consumables, and print services;
8. Office Building Design, Construction and Management (including interior lighting and air conditioning installation);
9. Paints, varnishes and road markings;
10. Public Space Maintenance;
11. Road Design, Construction and Maintenance;
12. Road lighting and traffic signals;
13. Textiles;
14. Road Transport (including cars);
15. Sanitary Tapware;
16. Toilets and Urinals;
17. Electrical and Electronic Equipment used in the Health Care Sector;
18. Copying and graphic paper;
19. Water-based Heaters;
20. Waste Water Infrastructure.

Likewise, these categories of products and services are also procured in the Republic of Moldova. At the same time, the product categories on the EU portal are quite broad, so in some cases some subcategories of products and services have been selected.

Given the geopolitical context, and global and regional energy crisis, for the SPP prioritization in Moldova should consider energy and resource efficiency aspects in its prioritization exercise. Thus, the categories of products and services are analysed especially under the aspect of energy saving.

The reasons behind the creation of the short list are presented in the following table:

¹² [EU criteria - GPP - Environment - European Commission \(europa.eu\)](https://ec.europa.eu/euro-portal/)

Table 1. Reasons for the creation of the short list of potential product and services groups to be further analysed.

Categories of products and services	Selected / Not selected and reason for not selecting
Cleaning products and services	Selected
Computers, monitors, tablets and smartphones	Selected
Data centres, server rooms and cloud services	Selected
Electricity	Not selected Electricity supply was excluded from the list due to the energy crisis facing the country, under which sustainability criteria for electricity procurement cannot currently be applied.
Food Catering services and vending machines	Not selected In the previous prioritization exercise (2017-2018) fresh vegetables and fruits were selected
Furniture	Selected
Imaging Equipment, consumables, and print services	Selected
Office Building Design, Construction and Management (including interior lighting and air conditioning installation)	Selected Interior lighting and air conditioners were selected because they are a large source of electricity consumption. In the previous prioritization exercise (2017-2018) energy-efficient windows and doors were selected. Other items related to construction were excluded for the reason that, in the case of public procurement of different types of works and services, they constitute only a part of the procurement and it is difficult to determine their volume and cost. At the same time, it should be mentioned that works procurements are complex procurements, and the application of sustainability criteria would be too complicated and misunderstood by public procurement specialists who would take the first steps in introducing sustainability criteria in tender documents.
Paints, varnishes and road markings	Not selected It does not meet the criteria of energy saving.
Public Space Maintenance	Not selected It does not meet the criteria of energy saving.
Road Design, Construction and Maintenance	Not selected This group were excluded for the reason that, in the case of public procurement of different types of works and services, they constitute only a part of the procurement and it is difficult to determine their volume and cost. At the same time, it should be mentioned that works procurements are complex procurements, and the application of sustainability criteria would be too complicated and misunderstood by public procurement specialists who would take the first steps in introducing sustainability criteria in tender documents.
Road lighting and traffic signals	Not selected This group were excluded for the reason that, in the case of public procurement of different types of works and services, they constitute only a part of the procurement and it is difficult to determine their volume and cost. At the same time, it should be mentioned that works procurements are complex procurements, and the application of sustainability criteria would be too complicated and misunderstood by public procurement specialists who would take the first steps in introducing sustainability criteria in tender documents.
Textiles	Not selected It does not meet the criteria of energy saving.
Road Transport (including cars)	Selected Cars
Sanitary Tapware	Not selected

Categories of products and services	Selected / Not selected and reason for not selecting
	This group were excluded for the reason that, in the case of public procurement of different types of works and services, they constitute only a part of the procurement and it is difficult to determine their volume and cost. At the same time, it should be mentioned that works procurements are complex procurements, and the application of sustainability criteria would be too complicated and misunderstood by public procurement specialists who would take the first steps in introducing sustainability criteria in tender documents.
Toilets and Urinals	Not selected This group were excluded for the reason that, in the case of public procurement of different types of works and services, they constitute only a part of the procurement and it is difficult to determine their volume and cost. At the same time, it should be mentioned that works procurements are complex procurements, and the application of sustainability criteria would be too complicated and misunderstood by public procurement specialists who would take the first steps in introducing sustainability criteria in tender documents.
Electrical and Electronic Equipment used in the Health Care Sector	Not selected Electrical and Electronic Equipment used in the Health Care Sector – were excluded for the reason that the spectrum of these procured equipment is very varied and the volume of public procurement for each type of equipment cannot be determined. This electrical equipment can certainly be included in the next prioritization stage.
Copying and graphic paper	Selected
Water-based Heaters	Selected
Waste Water Infrastructure	Not selected This group were excluded for the reason that, in the case of public procurement of different types of works and services, they constitute only a part of the procurement and it is difficult to determine their volume and cost. At the same time, it should be mentioned that works procurements are complex procurements, and the application of sustainability criteria would be too complicated and misunderstood by public procurement specialists who would take the first steps in introducing sustainability criteria in tender documents.

The list of potential product and services groups based especially on energy saving was created:

1. Cleaning products and services;
2. Computers, monitors, tablets and smartphones;
3. Data centres, servers (from the category Data centres, server rooms and cloud services);
4. Furniture;
5. Imaging Equipment, consumables;
6. Road Transport;
7. Copying and graphic paper;
8. Water-based Heaters;
9. Interior lighting, LED bulbs (from the category Office Building Design, Construction and Management);
10. Air conditioners (from the category Office Building Design, Construction and Management).

As mentioned above, one of the selection criteria for the shortlist was the energy and resource efficiency of the product and service categories. At the same time, the fact that the products and services are not too complex was taken into account, because it is very important that CAs do not get the impression from the start that using the SPP criteria is something very difficult. On the contrary, it is appropriate that at the beginning of the application of SPP criteria in the public tenders, the benefits of using SPP criteria for procuring products and services are clear and can be applied by CAs without any difficulties.

5.2. STEP 2: Analysis of short-listed products and goods based on public expenditure volume and number of contracts awarded.

For each of the 10 product categories identified in STEP 1, different product groups were identified, for which the purchase value and the number of contracts registered for each product group in the last three years (2020 - 2022) were analyzed.

Based on the analyzed information regarding the value of the purchase and the number of registered contracts, the most procured product group was identified in each product category out of the 10 identified in STEP 1. The results of the analysis are presented in the table below.

Table 2: Most purchased product groups in the Republic of Moldova in 2020-2022.

Objective: Identify product groups that are the most purchased by CAs falling within the categories listed in STEP 1 (10 product categories).						
Categories of products	Types of products	Total Amount of purchase (Lei MD)	Share in total volume of public procurement (%)	Total number of awarded contracts (frequency of purchase)	Share in total public procurement (%)	Most purchased product groups
Cleaning products and services	Hand sanitizer	982,271.29	0.0035%	27	0.0226%	Detergents
	Surface disinfectants	993,368.41	0.0035%	27	0.0226%	
	Detergents	9,150,072.59	0.0322%	273	0.2286%	
	Soap	8,822,235.76	0.0310%	264	0.2211%	
	Dishwashing solutions	262,474.65	0.0009%	24	0.0201%	
	Toilet solution/disinfectant	1,097,271.64	0.0039%	66	0.0553%	
Computers, monitors, tablets and smartphones	Computers	84,243,405.82	0.2965%	254	0.2127%	Computers
	Tablets	4614748.98	0.0162%	21	0.0176%	
	Monitors	3,266,985.73	0.0115%	66	0.0553%	
	Smartphones	932,638.20	0.0033%	17	0.0142%	
Data centres, servers	Data centres	0	0.0000%	0	0.0000%	Servers
	Servers	31,606,808.20	0.1112%	43	0.0360%	
Furniture	Chairs	4,510,062.62	0.0159%	108	0.0904%	Cabinets
	Tables	1,071,495.67	0.0038%	17	0.0142%	
	Office cabinets	6,230,040.57	0.0219%	194	0.1625%	
Imaging Equipment	Multifunction Devices	14,454,987.39	0.0509%	148	0.1239%	Multifunction Devices
	Scanners	1,236,181.44	0.0044%	15	0.0126%	
	Projectors	2,286,612.35	0.0080%	36	0.0301%	
Road Transport	Cars	121,331,419.01	0.4270%	195	0.1633%	Cars
	Autospecials	117,597,405.00	0.4139%	43	0.0360%	
	Minibuses	29,818,405.17	0.1049%	25	0.0209%	
Copying and graphic paper	Printer paper, A4 format	48,153,897.55	0.1695%	193	0.1616%	Printer paper, A4 format
	Other types of paper	22,037,822.91	0.0776%	495	0.4145%	
Water-based Heaters	Boilers	872,260.61	0.0031%	54	0.0452%	Boilers
	Central heating	165,176.00	0.0006%	2	0.0017%	
Interior lighting, LED bulbs	Indoor lighting	19,706,540.48	0.0694%	90	0.0754%	Indoor lighting
	LED bulbs	740,477.00	0.0026%	57	0.0477%	
Air conditioners		9,742,746.95	0.0343%	122	0.1022%	Air conditioners

Based on the public expenditure analysis, the list of selected the most procured product group identified in each product category out of the 10 identified in STEP 1. and their ranking looks as follows:

Table 3: The ranking of selected products groups short-listed for SPP in the Republic of Moldova.*

	Types of products	Total Amount of purchase, lei MD	Total number of awarded contracts
1.	Cars	121,331,419.01	195
2.	Computers	84,243,405.82	254
3.	Printer paper, A4 format	48,153,897.55	193
4.	Servers	31,606,808.20	43
5.	Indoor lighting	19,706,540.48	90
6.	Multifunction Devices	14,454,987.39	148
7.	Air conditioners	9,742,746.95	122
8.	Detergents	9,150,072.59	273
9.	Office cabinets	6,230,040.57	194
10.	Boilers	872,260.61	54

* The order in which the product categories are listed is determined by the total volume of public purchases made in 2020-2022.

The review showed that from the list of the 10 selected product categories, for **cars**, **computers** and **printing paper** (that are sub-categories within the analyzed 10 product categories) in 2020-2023, both the largest volume of purchases and the largest number of concluded contracts were achieved.

Other product groups (and sub-groups) such as detergents or office cabinets have a large number of contracts awarded, but their amount is not as high.

5.3. STEP 3: Conduct a preliminary market study to check availability of shortlisted products or product groups on the market

For the products identified in STEP 2 (10 shortlisted product categories, and more specifically, selected products within 10 product categories), a preliminary market survey was conducted to assess the availability of alternative ('greener'/more sustainable) items in the national market and the average price difference between conventional and alternative items. The preliminary market study was carried out by consulting public procurement procedures from the MTender electronic procurement system; consulting the web pages of potential economic operators; questionnaires distributed by emails; and individual telephone interviews. Where possible, eco-labelled products were considered as alternatives. The results of the preliminary market study are shown in Table below.

The scoring for the availability of sustainable alternatives for the selected products on the market was carried out as follows:

Points	Description
0	Sustainable alternatives have not been identified (interviewed economic operators have not proposed anything)
1	Sustainable alternatives exist, but they are not widespread
2	Sustainable alternatives exist and are popular

To compare the average purchase price between sustainable and conventional products, the following scoring method was applied:

Points	Description
1	Sustainable products are significantly more expensive than conventional products
2	Durable products are more expensive, but this can be neglected
3	No price difference

Table 4: Preliminary market study in Moldova

Objective: Identify the availability for sustainable products listed in Table 3 in market, compare prices of alternative vs conventional products, and present total cost of ownership of alternative products vs conventional products					
Type of product	Availability of sustainable alternative on the market for this type of product	Score for Availability of sustainable alternative	Comparing the average purchase price premium in % (sustainable vs conventional products)	Score for average purchase prices between conventional and alternative products	Total Score
Cars	Electric cars Hybrid cars Euro 6 standard	2	15-30%	2	4
Computers	Energy efficient computers, all brand name production is	2	30%	2	4

	Energy Star certified				
Printer paper, A4 format	FSC certified paper	2	2-10%	3	5
Servers	Energy efficient servers	2	100-150%	1	3
Indoor lighting	LED technology, Power Efficiency Label	2	100-200%	1	3
Multifunction Devices	Energy-efficient devices, Energy Star certified	2	30%	2	4
Air conditioners	Energy-efficient devices	2	30-300%	1	3
Detergents	Local producers of detergents, which do not have certified production, usually participate in procurement procedures	0	Could not be determined	0	0
Office cabinets	Furniture made from FSC certified materials	1	30-50%	1	2
Boilers	Could not be determined	0	Could not be determined	0	0

In the given study, it was determined that mostly all procured products that consume electricity during their use, have alternatives with low electricity consumption and are certified with Energy Star or European Power Efficiency Label.

Regarding cars, it should be mentioned that practically all new cars imported into the Republic of Moldova have the Euro6 CO₂ emission standard.

Detergents are usually locally produced, but eco-certification is still not implemented in the country, so national producers cannot provide an ecolabel.

The office cabinets procured within public procurement procedures are mostly produced according to the dimensions requested by CAs. That's why Economical Operators (OEs), the national furniture manufacturers, can present type 2 eco-certificates for some materials from which the office cabinets are made, not for the all office cabinet as a final product.

Regarding boilers, a negative response was received from several economic operators. That is, EOs could not propose sustainable alternatives on the market for this type of product.

Thus, the types of products for which the market cannot provide sustainable alternatives have been excluded from the list: **boilers and detergents**.

6. Risks and benefits assessment

6.1. STEP 4: Measurement of negative environmental impacts

For the products prioritised in STEP 3 (products „boilers” and „detergents” were excluded from the initial 10 short-listed products), the environment related issues generated during products’ life cycle were identified. As there were no up-to-date sources of the environmental impact of the products listed, an estimation method was applied and information from secondary sources was used to identify the environmental impact of the product^{13 14}.

The scoring grid is from 1 to 3:

Points	Description
1	The least negative impact
2	The medium negative impact
3	The highest negative impact

It should also be noted that the life cycle of the product was taken into account when assessing the impact of each product. Therefore, the impact from the raw materials of the product to its disposal was considered. The higher the score, the more serious impact the product may have on the environment. We can say that the major environmental effects of the listed products are the emissions during use, the generation of potential hazards from the improper disposal of the product, harmful and dangerous substances in the products, inefficient consumption of water and electricity. Respectively, these factors will be analyzed below.

The results of the assessment are presented in the table below.

Table 5: Negative environmental impacts that could be addressed by purchasing sustainable products.

Objective: Out of the listed types of products groups, identify those with a highest negative environmental impact, which could be addressed by the purchase of sustainable products							
Type of product	Air pollution	Water pollution	Solid waste	Toxic waste	Energy consumption	Water Consumption	Total Score
Cars	3	2	3	2	3	2	15
Computers	3	2	3	3	3	0	14
Printer paper, A4 format	3	2	2	1	2	3	13
Servers	3	2	3	3	3	0	14
Indoor lighting	1	0	2	3	3	0	9
Multifunction Devices	3	2	3	3	3	0	14
Air conditioners	3	2	3	3	3	1	15
Office cabinets	1	2	2	2	1	2	10

¹³ https://ec.europa.eu/environment/ipp/pdf/eipro_report.pdf

¹⁴ <https://www.hpe.com/us/en/insights/articles/top-6-environmental-threats-caused-by-digital-electronics-1901.html>

Environmental impact analysis shows that products such as **cars** and **air conditioners** have the highest negative environmental impact, thus purchasing sustainable cars/e-cars would contribute to reduce negative impact on the environment the most. The indoor lighting has the lowest negative impact on environment.

6.2. STEP 5: Measurement of positive socio-economic impacts

For the products prioritised in STEP 3, the positive socio-economic impacts that could be obtained by purchasing alternative products (compared to conventional products) for the selected product types were assessed.

Various aspects were taken into account here, such as the issue of local production, the particularities of the labor market including the promotion of gender equality, work opportunities for the disabled and the elderly people and the promotion of Small and medium-sized enterprises (SMEs).

The ranking is based on a scale of 1 to 3:

Points	Description
0	No positive impact
1	The least relevant positive impact
2	The medium positive impact
3	The most relevant positive impact

Table 6: Positive socio-economic impact of purchasing sustainable products.

Objective: Out of the listed types of products groups, identify those for which the purchase of sustainable products can have stronger socio-economic impact compared to conventional products							
Type of product	Impacts on health	Promoting gender equality	Work opportunities for people with disabilities	Job opportunities for seniors	Local production	Promoting SMEs	Total Score
Cars	2	0	0	1	0	1	4
Computers	1	1	2	1	0	2	7
Printer paper, A4 format	2	1	2	2	1	3	11
Servers	1	1	2	1	0	2	7
Indoor lighting	1	1	1	1	2	2	8
Multifunction Devices	1	1	2	1	0	2	7
Air conditioners	2	1	0	0	0	2	5
Cabinets	2	0	1	2	3	3	11

From the analysis of the positive socio-economic impact, we see that the most positive impact on the social and economic sides compared to conventional products have **printer paper** and **office cabinets**, because they offer greater opportunities for national producers and sellers, promote SMEs, offer job opportunities for seniors. Cars and air conditioners have the least positive socio-economic impact, because they are imported products, they have a negative impact on health, they do not offer opportunities for seniors and persons with disabilities.

6.3. STEP 6: Assessment of the existence of certification and eco-labelling schemes

At the given stage, it was identified which of the selected product types have appropriate certification schemes, standards or labels that allow verification of sustainability performances of the product and show that this product meets sustainability criteria.

The score was defined based on the existence of sustainability criteria related to each of the products and which can be verified in a credible and rigorous way:

Points	Description
1	There is no verification system
2	Yes, there is an eco-label or any other environmental certification system

Table 7: Ecolabels and certification schemes internationally recognised (products with these ecological marks could be found in the market of the Republic of Moldova).

Types of products	Objective: for these listed types of products groups, identify those for which sustainable products have ecolabels, standards or verification schemes that can guarantee their quality and "greenness"/sustainability.	Total score
Cars	Euro 6 Standard	2
Computers	ENERGY STAR	2
Printer paper, A4 format	FSC	2
Servers	ENERGY STAR	2
Indoor lighting	ENERGY STAR Power Efficiency Label	2
Multifunction Devices	ENERGY STAR Power Efficiency Label	2
Air conditioners	ENERGY STAR Power Efficiency Label	2
Cabinets	FSC	2

As far as we can see, for all objects there is solid evidence of sustainability proven by certification or standards and all these product categories with eco-labels are available in Moldova market.

7. Final assessment of priority products -candidates for SPP in the Republic of Moldova

After reviewing the most purchased products in Moldova, alternative products on the market, as well as following studies of various impacts (for example, negative impacts on the environment; positive impacts on social and economic areas), the next step is to calculate the final score and establish a final ranking of the pre-final list of products.

Following allocated a score to the products based on the various criteria, the relative score was calculated by dividing the absolute score by the maximum score and multiplying by 10 (or another maximum score, see Table F below).

The formula to calculate the relative score is as follows:

$$R - \text{Score} = \text{score} / \text{maximum score} \times 10$$

In which:

- **R-score** is the relative score of a product in an evaluation table for one aspect (i.e. environment or socio-economic), which consequently put into the master table for final ranking;
- **score** is the actual score of a product in an evaluation table (i.e. r-score Cars for positive Socio-economic impact is $2+0+0+0+1+0+1=4$)
- **maximum score** is the highest score that a product can have according to the scoring scale (i.e. maximum score of positive Socio-economic impacts is $3+3+3+3+3+3=18$)

For example, the relative score for positive socio-economic impact caused by cars was calculated as: **R-score = $4/18 \times 10 = 2,22$** .

Then, all the relative scores were put into the final ranking table (Table 8). The higher score the product had, the higher it stood in the list of prioritisations. If two or more products had the same score, they would have the same ranking.

Table 8: Master Prioritization Table of the products that are suggested for SPP in the Republic of Moldova.

Objective: Summarize outcomes from previous tables/assessments to take all aspects into account for the final prioritization. Determine a weighing factor for each criteria (from tables 2, 4, 5, 6, 7) depending on the priorities of the procuring entities, by adjusting their maximum score										
Types of products	Expenditures			(Table 4)	(Table 4)	(Table 5)	(Table 6)	(Table 7)	Total Score (2+4+5+6+7)	Final ranking
	Total amount of awarded contracts value (Lei Md, in 2020-2022)	Share of the total amount of public procurement (%)	(Table2) Score based on the total amounts (max score 10)	Average price premium of sustainable product (max score 8)	Market availability of sustainable product (max score 10)	Environmental impact (max score 7)	Socio-economic impact (max score 2)	Eco-labels or certification systems in place (max score 5)		
Cars	121,331,419.01	0.43%	10,00	5,33	10	5,83	0,44	5	36,61	1
Computers	84,243,405.82	0.30%	6,94	5,33	10	5,44	0,78	5	33,50	2
Printer paper, A4 format	48,153,897.55	0.17%	3,97	8,00	10	5,06	1,22	5	32,25	3
Servers	31,606,808.20	0.11%	2,60	2,67	10	5,44	0,78	5	26,49	5
Indoor lighting	19,706,540.48	0.07%	1,63	2,67	10	3,50	0,89	5	23,68	7
Multifunction Devices	14,454,987.39	0.05%	1,19	5,33	10	5,44	0,78	5	27,75	4
Air conditioners	9,742,746.95	0.03%	0,80	2,67	10	5,83	0,56	5	24,86	6
Office cabinets	9,150,072.59	0.02%	0,51	2,67	5	3,89	1,22	5	18,29	8

According to the prioritisation results, the 3 products which have the highest points are:

- 1) Cars,
- 2) office paper,
- 3) Computers.

In general, the situation regarding the purchase of **these three new groups of products** in the Republic of Moldova in the last three years (2020-2022) is presented as follows:

Types of products	Total amount of contracts value in the last three years (2020-2022)	Total number of contracts	The number of EOs participating in public procurement procedures	Average number of bidders per procedure
Cars	121,331,419.01	195	54	1,1
Printer paper, A4 format	48,153,897.55	193	79	2,3
Computers	84,243,405.82	254	86	2,1

For all new 3 prioritized product groups there are sustainable alternatives available on the market, which are supported by certification and standard. Most EOs participating in public procurement procedures for prioritized products can also propose sustainable alternatives for them. In this sense there is economic and environmental potential related to these prioritized products.

Additionally, in 2017-2018 with support of UNEP under EU-funded project EaP Green in the Republic of Moldova, 2 category products were prioritised and the sustainability criteria were elaborated¹⁵¹⁶. Within current activities the sustainability criteria will be reviewed and updated. These two product categories are:

1. **organic fruits and vegetables**¹⁷
2. **energy-efficient windows and doors**¹⁸.

In course of implementation of the EU4Environment component on SPP, for the benefits of contracting authorities, methodological support will be provided related to 5 groups of prioritized products (2 previously and 3 newly prioritised products), with the elaboration/update of the sustainability criteria, including these 4 key supportive blocks of information:

1. Technical specifications
2. Qualification requirements for economic operators
3. Award criteria and evaluation factors
4. Contractual clauses.

Thus, CAs from the Republic of Moldova will have at their disposal the entire set of materials to carry out public procurement procedures with SPP criteria for 5 priority products:

- Cars;
- Printer paper, A4 format;
- Computers;
- Organic fruits and vegetables;
- Energy-efficient windows and doors.

¹⁵ https://www.oneplanetnetwork.org/sites/default/files/national_spp_action_plan_of_the_republic_of_moldova.pdf

¹⁶ https://tender.gov.md/sites/default/files/document/attachments/md_guide_to_spp_en_final_28feb2018_1.pdf

¹⁷ https://www.oneplanetnetwork.org/sites/default/files/market_readiness_analysis_of_the_public_procurement_system_in_the_republic_of_moldova.pdf

¹⁸ https://www.oneplanetnetwork.org/sites/default/files/sustainability_criteria_doors-windows_moldova_eng.pdf

Apart from that, a guide in the SPP and a set of communication materials will be made available to CAs and a series of training seminars will be held, which will be followed by public procurement procedures for the 5 prioritized products with the application of the SPP criteria^{19 20 21 22 23 24}.

¹⁹ https://tender.gov.md/sites/default/files/spp-ppt2-moldova_ro.pdf

²⁰ <https://tender.gov.md/sites/default/files/factsheet-1-general-final-ro.pdf>

²¹ <https://tender.gov.md/sites/default/files/factsheet-3-moldova-final-ro.pdf>

²² <https://tender.gov.md/sites/default/files/eco-labelling-factsheets-romanian.pdf>

²³ https://tender.gov.md/sites/default/files/ecolabelling-ppt_moldova_ro.pdf

²⁴ <https://www.youtube.com/watch?v=l7TbDf2dnGI>