

"GREEN BUSINESS" FOR SMALL AND MEDIUM-SIZE ENTERPRISES

Guide







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Preface

The purpose of this Guide is to foster the integration of environmental sustainability principles into successful SME business activities. In some cases, this means that an existing SME may adopt a "green strategy" incorporating new environmental sustainability goals and actions into its business actions. In other cases, it means that new enterprises may be started that specifically target the provision of a "green" product or service.

The Guide includes focus on some specific SME sectors where the integration of environmental sustainability principles into business operations can result in high levels of business benefits. However, guidance is also included on the "main-streaming" of environmental sustainability into the range of products and services in Ukraine. In addition, the need for capacity development for the integration of environmental sustainability into SME business practices is addressed, together with actions that can be taken by the public sector to stimulate "green" SME activity, and the instruments that can be used for this purpose.

The primary audience for the Guide is SME decision-makers. The Guide should also be used by public sector decision-makers and officials who wish to stimulate the development of green SMEs, and by agencies that are engaged in business development.

The Guide is structured as follows:

- Section 2 of the Guide provides background on the development of the green business sector in the EU, Canada and Ukraine.
- Section 3 presents ideas for green business development, with focus on some priority sectors together with "mainstreaming" green practices into all businesses.
- Section 4 provides guidance on turning green business ides to reality, with specific reference to the business development cycle.
- Section 5 provides an overview of environmental regulation for SMEs in Ukraine.
- Section 6 addresses capacity building in support of green business development and instruments that can be adopted by government to stimulate green business growth.

Legend



- definition



successful experience, cases

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INTRODUCTION



"GREEN BUSINESS"

"Green business" can be defined as a business that is committed to the principles of environmental sustainability in its operations, strives to use renewable resources, and tries to minimize the negative environmental impact of its activities. Several aspects of this definition require elaboration:

- A "green business" meets regulatory requirements for environmental performance, but takes specific steps to go beyond these requirements to minimize its impact on the environment.
- A "green business" may produce or deliver traditional or new product and services ways that minimize impacts on the environment.
- A "green business" strives to use resources and energy that have, in turn, been produced in ways that minimize impacts on the environment.

Few – if any – businesses in the world can be described as fully "green" – i.e., businesses that have no environmental impacts. However, many businesses – small, medium, and large – have taken important steps to minimize their impact on the environment. Some businesses have achieved "zero waste", in which all materials are either fully used by the business or are recycled. Other businesses have achieved "closed-loop water use", in which wastewater discharges have been eliminated. Other businesses use only secondary (i.e., recycled) materials in their production process. In all of these cases and many more, businesses have made investment and operational decisions that have substantially reduced their impact on the environment.

A business will adopt a "green strategy" to the extent that it is in its own interest to be "green". For many businesses, this simply means that a "green strategy" will increase profits – either by reducing costs or by increasing sales, or a combination of these factors.

Other businesses may have taken a decision that the long-term viability of their business depends not only on profit, but also on a close focus on social and environmental performance. These businesses may have adopted a "green strategy" as part of their focus on a "triple bottom line" that includes not only financial performance, but also social and environmental performance.

Increasingly, businesses see the opportunity to respond to customer demand for "green" products and services. In these cases, businesses orient their products and services, and the way they produce or deliver those products and services, specifically to meet the "green" requirements of their customers – who, in many cases, may be willing to pay more for a "green" product or service than for a traditional product or service.

1

SMALL AND MEDIUM-SIZE ENTERPRISES AND THE GREEN BUSINESS SECTOR

1.1. History of green business development

Green business has developed in response to the growth of awareness about the environment, and the impacts of industry and consumers on the environment:

- Governments have established environmental norms and standards, and SMEs have developed to provide green services and products to enable these norms and standards to be met.
- Individuals have become increasingly aware of how their lifestyle and consumer choices impact the environment, and are demanding green products and services that minimize environmental impacts. SMEs are among the suppliers of green goods and services that respond to consumer demand.

Today, green businesses provide solutions to some of society's greatest environmental challenges:

- Design and construction of energy efficient buildings;
- Recycling and safe management of wastes;
- Development of renewable energy;
- Treatment of wastewater.

In both the EU and Canada, the green business sector has been one of the fastest growing business sectors over the past decade.

1.2. EU and Canadian policies for green business

Governments at the EU level and in Canada have identified the development of SMEs and the transition to a green economy as core objectives of their economic development policy. In EU countries the "green" goods and services sector employs around 3.4 million persons, in Canada – around 700 thousand persons.²

1.2.1. EU policies for green business and SMEs

The EU has developed explicit policy measures to help SMEs exploit green business opportunities. The Europe 2020 Strategy outlines the EU's priorities for becoming a "sustainable economy". As part of the implementation of the Strategy, the EU has developed a Green Action Plan, which provides a direction and framework for how the EU, in partnership with Member States and regions, will work with SMEs to help them exploit the business opportunities that the transition to a green economy offers. The Action Plan:

- Targets improved resource efficiency of SMEs. Specific actions include: (i) the provision of information to SMEs on how to improve resource efficiency (materials and energy); (ii) facilitating green technology transfer between SMEs; and (iii) facilitating SME access to finance.
- Supports green entrepreneurship. Specific actions include: (i) promotion of eco-innovation by SMEs; (ii) facilitating business partnering, skills and knowledge for green entrepreneurship; and (iii) exploiting the role of business clusters in support of eco-innovative SMEs.

http://ec.europa.eu/environment/enveco/jobs/

² <u>http://www.eco.ca/pdf/Profile-Of-Canadian-Environmental-Employment-ECO-Canada-2010.pdf</u>

- Exploits opportunities of greener value chains. Specific actions include facilitating: (i) the creation of SME service business models and the re-use of materials, products and waste; and (ii) cross-sectoral collaboration to promote the circular economy.³
- Facilitates market access for green SMEs. Specific actions include: (i) promotion of a green European internal market by incorporating specific circular economy objectives into EU technical standards; (ii) facilitating access to international markets for green entrepreneurs; and (iii) facilitating the uptake of resource efficiency technology in partner countries through cooperation with European SMEs.

The EU is leading the "Greening Economies in the Eastern Neighbourhood" (EaP Green) project in six countries, including Ukraine, on behalf of a consortium of international organizations. The project is working at government and private sector levels (including SMEs) to: (i) mainstream sustainable consumption and production into national development plans, legislation and regulatory frameworks so that incentives are provided for development in line with policy commitments and good international practices, including those encouraged in the European Union; (ii) promote the use of strategic environmental assessment and environmental impact assessment as essential planning tools for environmentally sustainable economic development; and (iii) facilitate the greening of selected economic sectors (manufacturing, agriculture, food production and processing, construction).

1.2.2. Canadian policies for green business and SMEs

The Government of Canada has developed a "SME Sustainability Roadmap" to assist SMEs adopting green business practices. ⁴ The roadmap details:

- The business case for adopting green business practices;
- Tools to assist SMEs plan and budget green investments;
- Guidelines and tools to assist SMEs develop green products and services;
- Guidelines on green procurement by SMEs;
- Specific focus on greening resource use, and the waste/materials management, transport and building sectors.

The roadmap also provides guidelines for: (i) green marketing of products and services by SMEs; and (ii) involving staff in the identification and implementation of actions to improve the environmental sustainability of SMEs.

The Government of Canada has also supported the development and application of green products and services through investment programs that specifically target green infrastructure. The Green Municipal Fund finances green municipal infrastructure plans, studies, and investments. Specific focus is placed on brownfield development, waste, water, transportation, and energy sectors. The products and services that are financed may be provided by SMEs. The result is that municipalities benefit from green infrastructure while SMEs gain experience in the provision of green products and services. The Green Municipal Fund is managed by the Federation of Canadian Municipalities and has a total value of CAD 650 million.

1.3. Development of Green Business in Ukraine

Small and medium – size enterprises in Ukraine are a powerful socio-economic driver, which, along with others, provide jobs to the majority of salaried employees in the country's economy and provide for more than half of production.

In Ukraine, an enterprise is classified as a SME in accordance with the number of employees and enterprise's annual income received from its activities:

- Micro enterprises 1-10 employees with annual income not exceeding the equivalent of EUR 2 million at the annual average exchange rate of the National Bank of Ukraine;
- Small enterprises 11-50 employees with annual income not exceeding EUR 10 million;
- Medium-size enterprises 51-250 employees with annual income not exceeding EUR 50 million.

According to the State Statistics Service of Ukraine, in 2015, there were about 2 million enterprises in Ukraine, more than 99% of which were micro and small enterprises. SMEs employed over 79% of people and their volume of sales (products and services) was 63% of the national total.⁶

³ The EU characterizes the "circular economy" as an economy in which the value of products and materials is maintained for as long as possible; waste and resource use are minimized, and resources are kept within the economy when a product has reached the end of its life, to be used again and again to create further value (European Commission, Factsheet: Circular Economy Package-Questions and Answers, Brussels 2 December 2015: http://europa.eu/rapid/press-release_MEMO-15-6204_en.htm)

Department of Industry, Science and Economic Development Canada, SME Sustainability Roadmap, Ottawa, 2012: http://www.ic.gc.ca/eic/site/csr-rse.nsf/eng/h_rs00174.html

⁵ Commercial Code of Ukraine No 436-IV from 16 January 2003.

⁶ State Statistics Service of Ukraine – http://www.ukrstat.gov.ua/operativ/operativ2012/fin/osp/osp_u/osp_u.htm

Information on the number of green enterprises in Ukraine is scarce:

- It is very difficult to quantify green enterprises.
- There is an absence of the relevant classification of types of economic activities.

At the same time, it is clear that Ukraine has huge potential for green business development. The current state of the economy, with obsolete technologies and an urgent need to decrease resource and energy dependence of the country's key industrial sectors, has resulted in one organization estimating that the potential of the green services and technologies sector at more than EUR 120 billion.⁷ The largest share of this potential is taken by energy saving technologies / climate change, waste management, and water purification equipment.

The green products and services sector in Ukraine was assessed in 2006 to be at least UAH 112.6 billion (USD 22.6 billion) in size. This is a considerable increase compared to earlier years: in 2005 – UAH 18 billion (USD 3.6 billion), in 2004 – UAH 17.6 billion (USD 3.5 billion), in 2003 – UAH 12 billion (USD 2.6 billion).⁸ It should be mentioned that two thirds of the sector is the resource management sub-sector and one third the environmental protection sub-sector. At the time of the survey is was expected that the sector would continue to grow.

In 2015, the consulting company Research and Branding (R&B) Group carried out a survey of SMEs in Poltava oblast.⁹ The survey was aimed at detecting key possibilities for SMEs greening in Ukraine and the obstacles it faces, in particular related to the implementation of resource and energy efficient technologies and methods of doing business. 410 small and medium-size enterprises participated in the survey, including 300 micro-enterprises (73.2%), 72 small enterprises (17.6%) and 38 medium-size enterprises (9.3%). The enterprises represented the following industries in the agriculture and fisheries, mining, food industry and construction sectors. The results identified barriers to greener performance linked to:

- regulatory regime and environmental requirements compliance;
- other compliance aspects beyond the mandatory requirements;
- effective resource management efforts;
- state policy regarding environment and SMEs green activities improvement;
- limited availability of environmental ("green") products and services.

According to the survey results, over half of the surveyed enterprises (59.3%) do not produce environmental products and have no intentions to do so. Only 20% of enterprises mentioned that it produces such products. The enterprises, which mentioned that they produce eco-products mainly offer the following environmental products and services: organic and eco-labeled products; products with eco-design, which can be recycled (see Figure 1).¹⁰

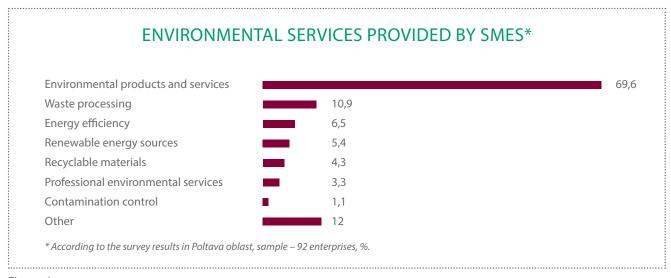


Figure 1.

⁷ Austrian Society for Environment and Technology (OGUT). – 2006.

Vilde A.V. The size of the environmental goods and services sector in Ukraine. Master's thesis at the Environmental Department, National University "Kyiv-Mohyla Academy". – 2007.

Main results of the survey "Facilitating the improvement of environmental performance of the small and medium-size enterprises". – Research & Branding Group, 2015. – p. 49.

Some enterprises offer more than 1 product/service; therefore, the total adds to more than 100%.

2 IDEAS FOR GREEN BUSINESS DEVELOPMENT

Green businesses are created to meet demand in the community for products and services that reduce environmental impacts and/or improve the quality of the environment. Ideas for green businesses are driven by increased environmental awareness in the community, which in turn creates a demand for green products and services. As levels of environmental awareness increase over time, demand for green goods and services also increases, together with opportunities for business development. This is illustrated in Figure 2.



Figure 2 has two important implications for green business development:

- 1. Demand will increase for entirely new green products and services to replace older, less green products and services. Current examples include the focus on renewable energy to replace energy generated with fossil fuels, and demand for recycling systems to replace waste disposal.
- 2. Businesses will increasingly understand that they must present a green image to their customers if they wish to retain and grow their customer base. It is now common for companies to market themselves as "green".

Together, these factors mean that opportunities and growth in the green business sector will be greater than for the economy as a whole. Indicators already demonstrate this trend: For example

- Demand for organic food in Ukraine has resulted in an increase in organic farmland from 164,000 hectares in 2003 to 400,000 hectares in 2014. At the same time, organic businesses have grown from 31 in 2003 to 182 in 2014. The consumer market for food in Ukraine has grown from less than EUR 1 million in 2007 to over EUR 14 million in 2014.
- In 2010-2014, the bio-energy sector grew at an annual average rate of 42%.
- Renewable energy is targeted to account for 11% of all energy consumption in 2020.

• Energy consumption by 2020 is targeted to be 9% lower than the average energy consumption in the 2005-2009 period as a result of improved energy efficiency and the application of new products and services.¹¹

Each of these examples – and many other initiatives that are not specifically monitored – represents opportunities for green business development today. In addition, they also represent opportunities for business growth in excess of national averages as the economy modernizes and transitions to European norms of high performance and low environmental impact.

The success of a green business depends on its ability to attract customers to its "value proposition"; i.e., the qualities that it provides to the customer and which separate it from the competition. A "green" business will seek to provide the customer with a product or service that is valued not only for the product or service itself, but also because the provision of the product or service has incurred reduced environmental impact. Nevertheless, green businesses should consider their value proposition in greater detail from the customer perspective to understand how a customer may perceive the product or service, and the marketing that is necessary to attract customers to use it. The following are relevant:

- The specific environmental attributes of the green product or service. What specifically makes the green product or service a superior from an environmental perspective and how can this be communicated most effectively?
- The cost to the buyer of the green product or service. Is the green product or service more expensive than its "non-green" competitors? If it is, marketing initiatives may need to focus on communicating the environmental value that is associated with the product or service so that customers will recognize the higher value of the product or service and pay the higher cost.
- The overall image of the organization. Companies that engage in the green business sector may be perceived by prospective customers as leading change to a "greener future". The ability of the organization to effectively market green products or services may therefore be closely linked to the wider perspective of the public regarding the company as a whole. A company that is perceived to act in ways that are not "green" will have difficulty marketing green products and services.

Green products and services can be more readily provided in some sectors than others. All sectors, however, can choose to act in ways that are more environmentally responsible and can reduce their environmental footprint. Opportunities in specific sectors are presented below. Actions that may be taken by many – or all – sectors are identified towards the end of this chapter.

2.1. Organic products

Ukraine has significant potential for production of organic agricultural products. The majority of Ukrainian organic enterprises are located in Odessa, Kherson, Kyiv, Poltava, Vinnytsia, Zakarpattya, Lviv, Ternopil, Zhytomyr oblasts. The size of Ukrainian certified organic enterprises: from a few hectares (same as in the majority of European countries) – to several thousand hectares of arable lands. According to Federation of Organic Movement of Ukraine, the area of organically certified farmlands in Ukraine is over 400 thousand hectares, which places Ukraine 20th in the world and first in Eastern Europe in terms of certified organic agricultural area. Nevertheless, this area represents only about one percent of the agricultural area in Ukraine.

Organic agricultural production in Ukraine is mostly in grains, oilseed, legumes, and dairy. In 2002, there were 31 registered enterprises that received the status of "organic", in 2015 this had increased to 210 certified organic enterprises. Surveys of the Federation of Organic Movement of Ukraine demonstrate that contemporary domestic consumer market of organic products in Ukraine started developing from about 2000. In 2006, sales volume of organic agricultural products was the equivalent of about EUR 400,000, and in 2015 – nearly EUR 17 million.¹²

The main marketing channels for organic products in Ukraine are the networks of supermarkets (for example, Good Wine, Silpo, Ashan, MegaMarket, etc.) as well as small specialized healthy diet shops and online retailers. Currently, only a limited number of organic products are available. The most widespread range of commodities are in the categories "dairy products" and "groceries". As of the beginning of May 2015, consumers have access to the following certified organic products produced in Ukraine: different types of vegetables, seasonal fruits and berries, pumpkins, melons, watermelons, eggs, mushrooms, herbs, nuts, honey, cereals, flour, cornflakes, jams, syrups, juices, beverages, oil, spices, bakery products, dairy, and meat products.

The level of awareness about organic products among consumers, producers and state authorities in Ukraine is still low. As in other countries, prices for organic products are higher than for traditional (non-organic) products. The development

Report on Green Transformation in Ukraine, Ministry of Economic Development and Trade of Ukraine and Ministry of Science and Education, Kyiv, 2016 – p.10; http://green-economics.org.ua/wp-content/uploads/2016/11/Ukraine-Green-Transformation-2016-draft-ENG.pdf

¹² Federation of Organic Movement of Ukraine – http://organic.com.ua/uk/homepage/2010-01-26-13-42-29

of the domestic market for organic products depends on the level of population awareness, purchasing capacity, and present supply (of full assortment of the products).

A main barrier to the development of the sector is an inadequate legal framework. The Law of Ukraine "On Production and Circulation of Organic Agricultural Products and Raw Materials" #425-VII was adopted on September 3, 2013, however, it has still not been implemented. About twenty regulations are still under development or waiting for approval. Notwithstanding the weak situation at the national level, some oblast and rayon administrations already support the promotion of organic production at the regional level (for example, Lviv and Poltava Oblast State Administrations), and some of them have already approved or are developing regional programs for development of organic agricultural production.

One consequence of the absence of legal authority at the national level is that the majority of the organic operators in Ukraine (producers, processing enterprises, traders) are certified in accordance with the requirements of the EU organic legislation in the absence of the implementation of the Ukrainian legal framework. In fact, EU organic standards are used both for export, and for the domestic market in Ukraine.

The majority of Ukrainian organic companies are focused on export. The main export-oriented organic agricultural products are agricultural crops (grain, oil crops, legumes), wild plants (berries, mushrooms, nuts, herbs) and honey; many of these items are sold for further processing and/or re-export. Significant value can be added to the organic agriculture sector if value-added processing is done in Ukraine rather than exporting lower value commodity goods that others add value to.

There is a high potential for increasing the export of organic products, as the demand for Ukrainian organic products on the side of international buyers from EU countries, Switzerland, USA, and other countries is high and constantly growing. However, effective marketing of organic products to the EU and other export destinations requires traceability along the full supply chain, and this is not reliably in place as instances of fraud have occurred in claiming that agricultural products are organic.¹³

There is, however, a considerable number of the organic sector participants. Associations of organic producers at the national level include the Federation of Organic Movement of Ukraine, the Union of Certified Organic Producers "Organic Ukraine", and the Association of Bio-production Members "BIOLan Ukraine". At the regional level, relevant entities include the Lviv City non-governmental organization Ecoterra as well as the research and training centers Polissya-Organic, Poltava-Organic, and others. Also key participants of the Ukrainian organic market include the certification authority Organic Standard which is working with requirements, technical expertise related to organic sphere, and organic idea promotion. Important input in the development of the organic market and business is made by organic producers, processing enterprises, traders and retailers – a number which is constantly growing. There are also specialized centers for organic product trading and qualified consultations for consumers including Naturbutique, Glossary, Eco-Shyk, Organic Era, and others.

Currently, organic agriculture is dominated by small and medium-size enterprises and the sector is not prioritized by the state agricultural entities, which prefer to focus on larger scale production. Official government statistics regarding organic agricultural production are not available. Bodies certifying organic products are also not able to provide a broad picture of the organic sector.

Key actions to create increased opportunities for the organic agriculture sector include:

- Implementation of a legal framework for the sector, together with regulations, that is consistent with the EU framework for organic agriculture and products.
- Development and application of a traceability system that meets EU standards and which is vigorously applied in both the domestic and international marketplace so that consumers can have confidence that products labeled "organic" meet international standards.
- A continuing campaign of awareness that equates consumption of organic products with superior taste, lifestyle, and health.
- A commitment by the state agricultural production, processing, and marketing entities to fully support the growth of the organic sector.

Organic Agriculture in Ukraine: An Opportunity for Greening the Economy, EaP Green Program, European Union – http://www.green-economies-eap.org/ru/resources/Organic-agriculture-Ukraine-UNEP-summary.pdf

2.2. Renewable energy sources

Ukraine has significant potential for energy production from renewable sources. The volumes of technically achievable energy potential of the main types of renewable energy sources are represented in Figure 3.14

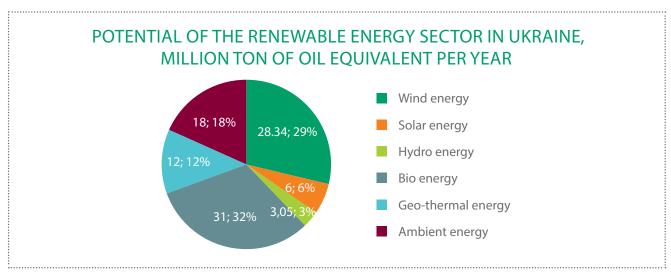


Figure 3.

Approval of the Law of Ukraine "On amending some laws of Ukraine regarding setting "green" tariff" (September 25, 2008) gave impetus to the development of the new directions of green business in Ukraine, namely:

- bio-fuel production;
- solar arrays production;
- fuel pellets production from waste;
- power generation at small hydro power stations (with installed capacity of up to 10 MWt);
- wind energy.

The green tariff targets the stimulation of green energy generation by providing a high price for qualifying energy generation than is paid for energy from other forms of energy generation.

The main opportunities for renewable energy in Ukraine include bio-energy, wind energy, solar energy and geothermal energy, as shown in Figure 3. Opportunities in ambient energy may be limited for SMEs because the sector is primarily in a research phase. Hydro-energy opportunities have been largely optimized, and opportunities for further development are limited. The following discussion therefore focuses on bio-energy, wind energy, solar energy, and geothermal energy.

Bio-energy

Bio-energy involves the conversion of biomass to energy, usually through a combustion process.

In European countries the share of renewable thermal energy has grown over the past 20 years, mainly from the use of bio-fuel (wood chips, straw bales, pellets, brick fuel, etc.). Currently, on average, in the EU it is over 23%. In some countries this indicator is much higher: in Sweden – 65%, in Lithuania – 61%, in Denmark – 47%, in Austria – 41%, in Finland – 37%, in Latvia – 28%.

The Ukrainian Bio-Energy Association analyzed the energy balance of Ukraine for 2015 and found that bio-fuel comprised 81.3% of renewable energy production in Ukraine in that year (Figure 4.). Biofuel production has steadily increased since 2010. In 2016, there were 430 enterprises producing pellets, bricks, and firewood chips. Table 1 summarizes biofuel production. As indicated in the table, there is a demand for bio-fuel from EU countries, and this has created an export market for bio-fuel manufactured in Ukraine.

 $^{^{14}}$ Road map for development of the solid biofuel market in Ukraine. – Kyiv, UNDP, 2016. – p. 17.

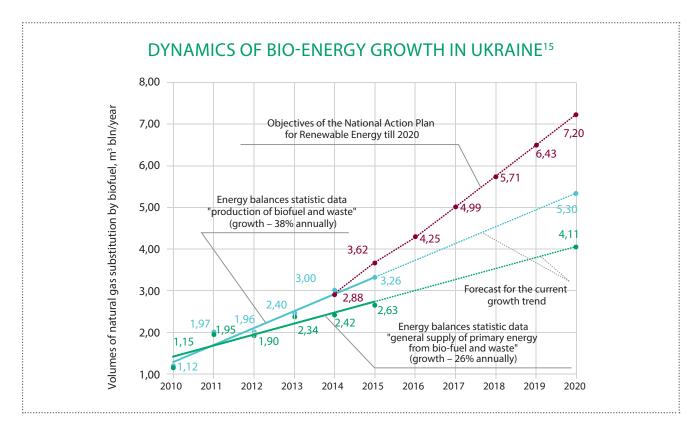


Figure 4.

Utilization of bio-energy resources is an opportunity to create new enterprises, introduce new technologies and new types of business, replace natural gas in the amount of 5 billion m3, achieve savings of UAH 30 billion by providing heating and hot water supply services, receive UAH 17 billion of profit for agricultural producers, and provide 100 thousand jobs. In particular, the stock of grain in Ukraine is over 50 million tons. Per each ton of grain it is possible to get 1.5-2 tons of straw or crop residues for use as bio-energy.¹⁶

SMEs already play a major role in the bio-energy sector. There are continuing opportunities for SMEs in organizing collection systems for gathering biomass as well as for the processing of biomass to facilitate both the transport and utilization of biomass. At the same time, a "green" approach to this opportunity needs to balance the creation of biomass fuel with the requirement to ensure that sufficient nutrients are returned to the agricultural and other land that produced the biomass in the first place.

 $^{^{15} \}quad \text{Bio-Energy Association Digest, November - December 2016.} - \underline{\text{http://uabio.org/activity/info-digest}}$

¹⁶ Use of bio-mass in municipal sector: practical manual. – Kyiv, UNDP, 2016. – p. 12-13.

	Name of the product	Quantity, thousand t/year
	Wood pellets	650
	Wood briquettes	170
8.	Firewood chip	1 110
ŀ.	Firewood	1 800
	Straw pellets	220
).	Sunflower pellets	850
7.	Pellets from agricultural crops	95
3.	Straw bales	300
	Total	5 185
	or 17% of the technically achievable potential, which is	30 million ton per year
	Production capacities of the existing enterprises produce around	8-9 million tons per year
Export of bio-fuel is about	2.2 million tons per year	
	Domestic market consumption is about	3 million tons per year
	Deficit of the solid bio-fuel demand in EU is	3.5 - 4.8 million tons per ye
	Average price for solid bio-fuel in EU is	155 EUR/ton (5000 UAH/to
	Average price in Ukraine is	1,400 UAH/ton (45 EUR/tor

Table 1.

Wind

Wind power production capacity has grown by over 225% in 2012-2016.¹⁸ Wind power potential is related to the average velocity of wind. The greatest wind power opportunities are in southern Zaporizhia, Kherson, Mykolaiv, and Odessa oblasts (where average wind velocity is over 5 m/second at 10 m above ground level) and in the Carpathian Mountains (where average wind velocities exceed 5.5 m/second at 10 m above ground level).¹⁹ Wind velocity increases with height, however, and the generation of wind power may also be feasible in other regions of the country.

SMEs have the opportunity to participate in the development of wind power through: (i) the provision of planning and design services; (ii) the manufacture of both the towers and the turbines that are required to harness wind power. Wind power is intermittent, and opportunities may also lie in the creation of power storage systems and the manufacture of power storage systems developed elsewhere.

Geothermal energy

Opportunities for geothermal energy are highest in Zakarpattia, Kherson, Chernigiv, Poltava, Kharkov, and Lviv oblasts.²⁰ However, opportunities to act on the potential for geothermal energy will require that a range of policy issues are addressed and that upgrading of transmission networks is undertaken. Opportunities for SMEs to implement geothermal energy projects are currently limited. The immediate opportunity for SMEs to participate in the geothermal sector will therefore be related to the provision of services to support the design of a geothermal energy strategy; the implementation of investments will generally occur later.

 $^{^{17}}$ Road map for development of the solid bio fuel market in Ukraine. – Kyiv, UNDP, 2016. – p. 19.

¹⁸ Includes production capacity in The Wind Power: Wind Power Market Intelligence – http://www.thewindpower.net/country_en_35_ukraine.php

¹⁹ <u>http://ars.els-cdn.com/content/image/1-s2.0-S1364032115007406-gr2.jpg</u>

²⁰ Geothermal Policy Options and Instruments for Ukraine, Icelandic national Energy Authority for Govt. of Ukraine, 2016 – http://os.is/gogn/Skyrslur/OS-2016/OS-2016-01.pdf

Solar energy

Technologies and transmission systems are well understood in the solar sector and opportunities are immediately available for SME investment and participation in the sector. Costs of solar technology have fallen dramatically in recent years, resulting in investment opportunities today that did not exist as recently as 5 years ago.

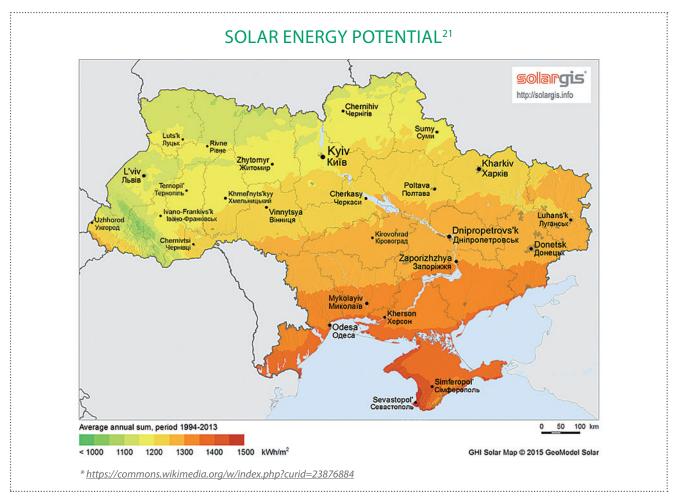


Figure 5.

Figure 5 identifies solar energy potential in Ukraine. Potential is greatest in southern areas where solar radiation levels are highest. However, technologies are available that can make solar power feasible at large or small scales cross the country. The opportunity for the participation of the SME sector in solar energy is illustrated by its activity in 2016: more than 700 small (less than 100 kW capacity) solar power projects were implemented that year by the private sector.

Opportunities for SME participation in the sector include both the installation and operation of solar power collectors, and the manufacture of the photo-voltaic cells and other equipment necessary to collect and distribute solar power. The development of the sector will be stimulated by the action of the Government of Ukraine to create a 1 GW solar farm in the Chernobyl Zone, a program that can be used to drive the development of the sector in Ukraine if appropriate procurement and other policies are put in place to support SME participation in the initiative.

SMEs may also drive the development of other applications of solar energy, particularly applications that remove the need to associated infrastructure. For example, solar energy may be used to power city street lights without the need for the lights to be connected to the power grid. Solar power is also being effectively used to power lightweight vehicles without the need for either the hydrocarbon or power grid infrastructure that is needed to support vehicles that are powered by conventional gasoline and electric engines.

 $^{{\}color{blue} {}^{21}} \quad {\color{blue} {\underline{}^{1}} {\underline{}^$

2.3. Green construction



ENVIRONMENTAL, OR "GREEN", CONSTRUCTION

is based on the principles of energy saving and environmental friendliness. To save resources, it is recommended to increase the energy efficiency of buildings, minimize the energy use, and to use renewable energy (e.g., wind and solar energy). It is also recommended to use environmentally friendly construction materials and technologies.

The objective of environmental construction is to provide for comfortable and safe buildings. Such construction allows decreasing environmental impacts in the process of construction and operational costs for maintenance of the building, as well as ensuring comfortable living conditions. Over the last 10-15 years "green" construction has been rapidly growing and is becoming more and more popular in the world.

The first buildings constructed using environmentally clean materials and technologies appeared in the 1970s in North America. However, this trend did not become widespread immediately. The objective of constructing the first ecobuildings was to demonstrate their effectiveness and advantages.

The momentum for active construction of "green" buildings was created by support of the principles of "green" construction at the governmental level. The first "green" construction standards were developed in 1990 (British BREEAM and American LEED), which established the framework for new directions in construction.

In 2002, the World Green Building Council was created, the objective of which was to influence the international real estate market and to introduce environmental systems of building evaluation in construction, as well as to develop special educational programs and facilitate the development of the environmental construction ideas all over the world.

The main principles of green construction include:

- effective use of energy, water, and other resources;
- power generation by wind generators or solar batteries;
- decreasing the volume of waste and other environmental impacts;
- use of local construction materials and products;
- use of green materials in the construction and for interior finishing;
- use of bio-technologies for waste recycling.

Increased focus on the use of environmentally clean substances and materials in the process of construction is not new, but is nevertheless an important direction in the market of low-height housing construction. This trend, in the first place, was picked up by private developers; thus environmentally clean buildings from safe-health materials are becoming more and more popular every year.

Environmentally-preferred materials in construction include:

- Clay, straw or contemporary straw substitute chips. Use of straw, turf, chips is not just a fashion trend in construction.
 These are time proven materials given a new life when eco-buildings appeared;
- Geocar is a unique construction material which appeared in the market relatively recently. It is based on processed turf, wood chips, and straw. Turf is an antiseptic agent. Geocar has acceptable price, high thermal capacity, long durability, and absorbs noise and smells. In buildings constructed from Geocar the air is always clean and fresh, it is cool in summer and warm in winter, even in severe frosts;
- Lightweight expanded clay aggregate can be used to make a light concrete. Expanded clay is created by heating clay
 to approximately 1200°C. The production of this material excludes the use of any chemicals;
- Wood, as an environmentally clean material, is an environmentally-friendly building material (provided it has been harvested in accordance with sustainable principles). However, wood finishes are frequently not environmentally-friendly. It is better to use paints which are produced using a natural method water– emulsion or acrylics. Where possible, fire retardant should not be used; an alternative is to cover the wood with clay;
- Mixture of clay and wood chips (straw) for heat insulation of the buildings;
- Use of reeds (harvested in accordance with environmental principles) for exterior finishing of the eco-buildings (coating over reed slabs siding) and as roofing.



DWELLINGS FROM CLAY AND STRAW

Enterprise: ECS-3.COM, Mykolayiv, http://ecs-3.com/en/

Objective: Create a viable alternative to traditional building for developing, designing, and constructing affordable eco-efficient structures.

Business solution: Developing green technology for the construction of modular bio-efficient buildings from compressed straw slabs. Based on international experiences in building with straw and related materials (clay and wood), the engineers designed modular and mobile buildings. Construction from the metal modules allows the creation of a variety of combinations. The buildings can be assembled and dismantled module by module in accordance with client needs. Each module is a separate part. In can be assembled at the factory or directly at the construction site. Due to simplicity, mobility, and low energy intensity, the system of construction is attractive for investments. Due to the cheap components (expenses for materials are 20-30%) the company is able to spend 70-80% for labour costs (production and assembling). The speed of construction is about two months, depending of the space of the building. The construction of a house with an area of 100 m² requires about a month and a half for production of the panels and a week and a half for assembling.

The company has a certificate for production for the straw construction panels. Standard panel size is 1x3 meters, however the equipment can produce panels of different sizes.

In addition to housing construction, the company is committed to energy saving principles. The equipment and instruments used for producing the panels consumes only a small amount of energy. Also the company's production process complies with ISO 14001.

The company forms a business cluster around its production, ensuring income not only for their staff but also for the citizens of the neighboring villages supplying the materials. Since local materials (wood, clay, straw) are used for the production, the enterprise strengthens the local economy.

Prospects: The speed of setting up and establishing of production allows the opening of similar production in any region. Thus, the company plans to develop a network. The company considers its main task to be revival of green construction in Ukraine and in the world. The objective of the entrepreneurs is that the houses from the straw panels will combine the traditional experience, innovative technologies, and modern comfort. The team is working not only on the improvement of the panels, but also on the development of the different types of ecohousing. The company considers that one of its development directions is cooperation – sale of technologies and technological supervision. With the start of the war a new category of the clients appeared – people that lost their houses and needed quick restoration of their housing.



ECO-HOUSES FROM HEMP HURDS

Enterprise: Hempire, Kyiv, http://hempire.com.ua

Objective: To provide alternative materials and technologies which homeowners can use to insulate their structures quickly and on their own while also preserving the health of the family, and saving money on heating and cooling.

Business solution: Affordable eco-housing from natural materials. The company has developed materials with high heat insulation, sound proof characteristics, and humidity control capacities. The materials do not burn, protect against rodents, and are fungus-proof. With the help of these materials it is possible to construct new walls, and to insulate the roof, attic floor, ceiling, basement, and existing walls.

Only four natural components are used: hemp hurds (the coarse parts of hemp that adhere to the fiber after it is separated), slaked lime, mineral additives, and water. There is a sufficient quantity of raw materials in Ukraine. Houses, insulated with these materials, will last for many years decreasing the need in production of new construction materials and decreasing their carbon footprint. The greatest advantage in construction or insulation with the eco-materials from hemp waste is the high-quality regulation of humidity in a building. Construction or insulation with the material developed by the company achieves a savings of 50% for heating and cooling of the house throughout the year, and also allows the use of lightweight materials for basement construction.

The hemp used in the process is industrial hemp that is legally grown in many countries. The company has developed a ready system for eco-insulation from the technical hemp, including: additives and formula, special mixer, construction form, and a technological map. A two to three-day training is required to learn the production process.

Prospects: Potentially it is possible to develop business and organize branch offices in many oblasts of Ukraine. One of the promising projects of Hempire is the development of eco-dwelling for internally displaced persons from the East.

2.4. SUSTAINABLE TRANSPORT



SUSTAINABLE TRANSPORT

is any method or organizational form of transportation which reduces environmental impact. The following can be classified as "green" transport initiatives: pedestrian and cycle traffic, environmentally friendly cars, transit focused design, rent of vehicles, and systems of public transportation.

Increased conventional transport generally increases negative environmental effects. Hydrocarbon-fuelled transport consumes about 20-25% of the world energy and emits about the same quantity of greenhouse gases. The amount of greenhouse gases from transport is growing most rapidly among all other types of energy consumption. Road transport is also responsible for a range of additional air pollutants, and its emissions create smog in cities.

Traditional transport planning is primarily focused on improving traffic flow. But the real objective of transport use is accessibility of work, study, goods and services, and friends and family. This can be achieved through the design and application of sustainable transportation that simultaneously decreases negative environmental impacts and improves quality of life in cities.



SERVICES FOR CYCLISTS

Enterprise: Veliki.ua, Kyiv, http://veliki.ua/

Objective: Promoting bicycles as an environmentally friendly means of transportation, developing cycling infrastructure in Ukrainian cities, developing green, eco-, and ethno-tourism.

Business solution: This is the first and the biggest Ukrainian network of bicycle rentals, sales, and maintenance. The company has introduced European standards of service quality and bicycle maintenance. The fleet is of the highest quality bicycles, which are maintained regularly and regularly replaced as needed. The business features online service, booking accessories, and a flexible customer approach (system of bonuses and discounts, cycling school for beginners). A franchising program for the business has been created. The business reduces demand for convention transportation and aims at encouraging healthy lifestyles.

A main advantage of the company is the full range of quality services related to the bicycles. The clients of Veliki.ua can rent the equipment, buy it, receive consultations, refer to the maintenance service for repairs, join a cycling tour, or even complete cycling courses or a course on bicycle mechanics.

In 2011, the company registered its own trademark and started working Ukraine-wide – from 6 bicycles in 2009, to 665 bicycles in 2015. Now the company is working in 10 cities of Ukraine, has about 30 rental points, 10 repair shops, 3 big stores, and 2 shops. The company is developing services, including equipping parking lots, advertising on bicycles, re-tooling bicycles for delivery services, bicycle cooperatives, and other related entertainment. It also helps blind people learn to ride tandem.

Prospects: The founders got the idea to promote bicycle movement throughout Ukraine with the help of franchising, as it is the quickest way of business expansion.

2.5. Green tourism



GREEN TOURISM

is a style of tourism that places a primary emphasis on the protection of the environment and the culture of an area. While green tourism is often associated with rural and natural areas, it also includes the actions of the tourism industry as a whole to reduce its environmental footprint. SME opportunities in both aspects of green tourism are addressed in this section.

Green tourism in rural and natural areas

Green tourism in rural and natural areas may take different forms among which the most popular include:

- Agro-tourism, in which tourists visit farms and learn and/or participate in farming activities.
- Ethnographic and cultural tourism, in which tourists engage with specific societal aspects of an area.
- Natural area tourism, in which tourists value the natural attributes of an area.

In each case, the "green" aspect of the tourist experience should leave the visited location unchanged. The essence of green tourism in rural and natural areas is therefore that the environmental footprint (including the natural and the cultural environment) of the tourist should be minimized as much as possible.

These types of tourism have become widespread and are growing actively in many European countries. In developed countries, green tourism is popular not only with the middle-income population, but among the wealthy as well. This type of tourism is particularly well-suited to the development of small business in rural regions because small businesses can easily integrate into the local context and can allow urban populations to have the green tourism experiences that they expect.

The most favourable preconditions for the development of the rural tourism exist in national and landscape parks, where there is an opportunity to combine the experience of the natural, historic, ethnographic and cultural potential of the region. Development of rural tourism can achieve social and economic benefits across the country. Rural tourism can be an important factor in a stable dynamic increase of the budget revenues, activation of the development of many sectors of economy (transport, trade, communication, construction, agriculture, etc.), and the stabilization of rural population numbers with the creation of new forms of income in the rural economy.



RURAL GREEN TOURISM IN UKRAINE

Rural green tourism is one of the most promising types of recreation in Carpathian, Polissya, Podillya, and Naddnipryanskyi regions. For the rural population in Ukraine, this type of tourism is the best incentive for starting and developing businesses which bring additional profits and increases the level of employment among family members. The efforts of rural communities in organizing agro-recreational services encourage upgrading housing, improving rural areas, and creating additional revenue streams for local budgets.

The attraction and advantages²² of rural green tourism include:

- The Ukrainian countryside has significant recreation potential;
- Preserving the ethno-cultural authenticity of the historic regions of Ukraine (Bukovyna, Pokuttya, Zakarpattya, Volyn, Podillya, Slobozhanschyna, etc.) can be an upmarket, national and international subsector with a strong competitive advantage;
- Encouraging small business development that restores traditional economic order and rehabilitates the economy of agricultural regions;
- A vibrant agro-recreational service sector provides the means to solve a number of pressing regional social problems, in particular, mass unemployment, working abroad, complicated social climate, etc.;
- Organizing tourist recreation in the rural areas facilitates changes in the environmental consciousness of the population, and plays an important role in preserving nature;
- Revitalizing through mass recreation an increase in patriotic feelings.

A good example is the museum and recreation offerings at the historic Khortytsya Island where tourists experience the world of Zaporizhia Cossacks including their culinary arts, crafts, games, and other historic activities.

Rural agro-tourism ventures should focus on:

- The material and technical quality of the facilities (for example, the size and furniture in a room, lodging appliances, and sanitary conveniences);
- The emotional quality (level of service for the tourists).

Polish experience indicates that the minimum number of occupancy days in rural tourism activities is 60-80 days throughout the year. This is generally consistent with the summer Ukrainian context, where summer holidays (and tourist season) last up to 55 days; in mountain regions, the winter tourism season lasts an additional 45 days. Facilities and households located close to a forest or a river can also offer autumn recreation (picking mushrooms, berries, fishing, etc.) and spring recreation, when the main attraction is the nature.²³

²² Rutynskyi M. Io., Zinko Yu.V. Rural tourism: manual. – K.: Znannya, 2006. – p. 271.

²³ Kudla N. E. Rural tourism: basic principles of business and hospitality: manual – K.: Center for study materials, 2015. – p. 38.



GREEN TOURISM: GAIDAMAKY

Enterprise: Gaidamaky, Melnyky village, Cherkassy oblast (Chyhyryn rayon, location named Kholodnyi Yar)

Objective: Proving that new income generation opportunities can be created in rural areas.

Business solution: A cluster of green tourism is being created to provide the whole spectrum of services – accommodation, food, and entertainment. Activities include beekeeping, growing natural strawberries, and souvenir production. The recreation complex Gaidamaky was created based on ancient traditions (arbalest shooting club, coin attraction, etc.) The success is achieved due to high quality of the products and services, a positive reputation, environmental friendliness (honey, strawberries, and candles).

Kholodnyi Yar is synonymous with one of the most environmentally clean areas in Ukraine. The location is rich with historic and natural monuments – a thousand-year-old oak, Motrona's Monastery, and Scythian grave mounds. Annually around 200 thousand tourists visit Kholodnyi Yar. Excursions and traveling round Kholodnyi Yar create a lot of positive emotions. Clean air and spring water also have positive impact on the visitors' health.

Ukrainian honey is very popular in Europe, where it is one and half times more expensive. But the certification is required for its export as an "eco-product" in European countries. The company's sales of bee products is increasing as demand is higher than the supply. This business generates around UAH 35-50 thousand per year.

Prospects: "Gaidamaky" is a family business, but as it develops it is planned to employ around 20 villagers.

While green, rural, and natural tourism may be most closely associated with domestic tourism, Ukrainian rural tourism can become a visiting card for the international tourism market. Advertising is necessary in both this and the domestic tourism market context. The Union for Promotion of Rural (Green) Tourism Development, ²⁴ created in 1996, is an example of the type of entity that can play this kind of role. The Union unites 14 regional units, which keep a record of the rural households ready to receive tourists, handles educational and legal work, and promotes rural household activities and products. Such units are the most active in Zakarpattya, Ivano-Frankivsk, Kyiv, Lviv, and Poltava oblasts.

SME opportunities in this type of tourism occur at the micro (individual or household) level as well as at the level of larger SME organizations, and include:

- Accommodation.
- Supply of services (marketing, guiding, etc.).
- Supply of provisions.
- Construction/operation of facilities.

A databank of green tourism households has been created at http://ruraltourism.com.ua providing free access to full and comprehensive information about the accommodation, services, and prices.

Greening the tourism sector

There has been increased recognition over the past several years that tourism facilities may themselves have serious negative environmental effects:

- Wastewater generated by a hotel may overwhelm local wastewater treatment capacity.
- Solid waste generation may place a heavy demand on waste disposal facilities.
- The energy demanded by a tourism facility may result in shortages elsewhere in the network.

A wide variety of programs have been developed in recent years that establish criteria for the environmental performance of tourism facilities – particularly hotels – and which award certification to facilities that meet these criteria. Typically, certifications of this kind become important elements of the marketing of the facility – which is itself a demonstration of the importance of environmental performance to the tourists it wishes to attract.

SME opportunities in the greening of the tourism sector include:

- Design of systems that minimize the consumption of natural resources (e.g., water, energy) by a tourism facility and/or requirements for the management of its discharges (e.g., wastewater, solid waste)
- Provision of equipment that minimizes the consumption of natural resources by a tourism facility and/or requirements for the management of its discharges.

²⁴ Union for Promotion of Rural (Green) Tourism Development in Ukraine – http://greentour.com.ua/

2.6. Waste processing and recycling

Cities across Ukraine are challenged by difficulties in solid waste management. The sector is not adequately funded and suffers from legal and institutional weakness. Several international agencies have prioritized action to address solid waste management problems in the country, and are working with national, regional and local entities to develop policies, plans and investment programs.

Opportunities for SMEs in the waste sector include:

- Waste collection;
- Waste processing and recycling
- Waste disposal.

In all cases, SMEs should expect that they should offer and deliver services that are oriented to EU standards because these are the standards that will increasingly be required as Ukraine implements the EU Association Agreement.

The greatest opportunities for SMEs may lie in waste processing and recycling:

- There are domestic and global markets for recyclable materials.
- Technologies for waste processing and recycling are generally simple and well understood.
- There are large quantities of recyclable material available.

Distinction is often not made between the solid wastes that are generated by industrial, commercial and institutional entities and those that are generated by households. However, wastes generated by industrial, institutional and commercial entities are often much easier to process than wastes generated by households. This is because the wastes that are generated by industrial, commercial and institutional entities are linked to their economic activity: the number of different wastes and waste materials is usually small, and the amount that is generated is large on a unit basis as compared to households. This means that it is possible to collect large quantities of materials for recycling from a relatively small number of industrial, commercial and institutional entities. After they have been collected, the work to separate materials for recycling is less than for household waste.

Materials generated by the industrial, commercial and institutional sector that provide the greatest financial opportunity for recovery and recycling include:

- Office paper and cardboard. Very large quantities of office paper may be generated by government offices, financial
 institutions and other office-based organizations. Regular collection of office paper can be organized with a truck
 equipped with a shredder. This way, confidential documents can be destroyed and the paper can be collected for
 recycling. Contamination levels from other materials may be very low, so that sorting requirements are minimized.
- Very large quantities of cardboard may be generated by organizations that receive goods from manufacturers
 and distributors including, in particular, grocery stores and retail stores. Collection can be organized with a truck
 equipped with a compaction or baling device so that a maximum quantity of cardboard can be transported. As with
 office paper, contamination levels from other materials may be very low, so that sorting requirements are minimized.
- Plastics. There are many different plastics in the waste stream, but the most common are polyethylene terephthalate (PET) – widely used for bottling water and beverages, high density polyethylene (HDPE) – widely used as a rigid plastic container for food items, and low-density polyethylene (LDPE) – a film that is widely used for plastic bags and to wrap products.
- Other packaging materials including glass, metals, and other grades of both paper and plastics.
- Specific waste products, such as electronic wastes and tires. Electronic wastes contain small quantities of numerous materials (e.g., gold and other metals) that command a high price. The plastics that are used in the manufacture of electronic products, e.g., hi-impact polystyrene (HIPS), are different than those found in other types of waste, and can command a high market price.
- Used tires can be processed in a variety of ways, but grinding in a "crumb" format is the most common. Rubber crumb has numerous applications.
- Organic materials. The processing of these materials (typically for compost) takes time and requires large areas unless
 higher cost technologies are used. However, in this case care must be taken to ensure that the sales value of finished
 compost is sufficient to justify more expensive equipment.
- The processing of household waste is also possible, but may not be feasible in the absence of a contract with a municipality. This opportunity will become more clearly defined in future when legal and institutional frameworks are adopted that facilitate SME participation in the management of household waste and reduce the risks that SMEs face under the current frameworks.



PLASTIC WASTE PROCESSING BUSINESS

The plastic waste processing business is profitable as the products (polyethylene in granules, polypropylene, etc.) are in great demand in the construction materials industry and other sectors. The collection/processing of plastic bottles may provide a particular opportunity as they are easy to sort and command a high market price in the secondary materials market, and can be easily processed into new products.

Environmental and other licenses must be obtained, as well as an appropriate site. Equipment is needed (which is produced in both Ukraine and abroad) that can:

- Fragment chop materials;
- Agglomerate bake chopped materials into small lumps (which can be sold or granulated);
- Granulate creating clean and quality raw materials sold for high returns.

As an example, a fragmentation and agglomeration facility requires a foreman and two workers; and additional costs include licenses, fire services, taxes, utility payments, materials costs, and other expenses. Such a facility may cost in the order of UAH 40,000 per month to run in addition to the approximately UAH 150,000 needed for opening the business. If selling granulated plastic, the business may generate sales of UAH 200,000 per month. After the initial investment is recovered and assuming reliable buyers and functional execution, the facility can provide an on– going profit.²⁵



ECO-RUBBER

Enterprise: Eco rubber, Lubartsi, Boryspil rayon, Kyiv oblast, http://www.ecoguma.com.ua/

Objective: Create rubber products from waste tires to improve sports and recreation facilities, especially to prevent injury and increase safety.

Business solution: By developing a full cycle dealing with waste tires (collection, processing, and producing new products), waste tires are turned into rubber crumbs for producing products such as: rubber coating for play areas, sporting grounds, and training gyms; different road traffic safety devices ("speed control bumps"); parking equipment; bullet traps for shooting clubs; safety pier operating equipment; products for stock breeding complexes; etc. This economic opportunity also protects the environment. Waste tires are classified as a domestic grade IV hazard, and cannot be burned (as polluting agents are released in the process of burning), nor buried in a landfilled (as tire decay requires over 120 years in the soil).

The company cooperates with 540 local and international partners, and supplies internationally competitive products at prices attractive for Ukrainian consumers. The rate of import substitution for the products in Ukraine is about 80%. The factory's capacity is 300 tons of tires per month, but the lack of raw materials in some months reduces production to only 200 tons.

The production facilities in the rural area employ 34 villagers.

Prospects: Construction of one more workshop for production. Also, moving the tire processing closer to the source of raw materials (the City of Kyiv) would be helpful, while focusing the manufacturing of final products in Lubartsy.

2.7. Landscape design and implementation



LANDSCAPE DESIGN

is the art of improving, greening, and organizing gardens and parks, hills, lawns, and small architectural forms. There are a lot of solutions for arrangement of the land plot such as alpine gardens, arranging lawns and flowerbeds, organizing the lighting and watering, and crafting small architectural forms (sculptures, pavilions, pathways, swings, etc.) as well as creating artificial ponds and other things.

Home based business: 1000+1 ideas for own business in Ukraine. – http://homebiznes.in.ua/biznes-na-pererobtsi-plastykovyh-vidhodiv-nadprybutkova-ideya/

There are different styles of landscape design: regular, rural, landscape, natural, Japanese, Chinese, mixed, etc. Implementation of any of the designer's solutions depends not only on the purchasing power of the client, but also on the characteristics of the land plot.

The demand for landscape design services appeared in Ukraine only recently. First of all, this is associated with the development of the cottage construction in suburban areas, improved income level of the population (appearance of the middle class, who are the main clients), and greater demand in aesthetics and design.

The landscaping business is organized either by a designer, who hires the staff, purchases equipment, manages the process, and generates ideas; or by a developer which tends to hire specialists – e.g. dendrologists and designers. Both ways can be successful. Entrepreneurs experienced in this area create companies offering a full spectrum of services – lawns, planting, paving of the paths, drainage, water drains, electricity, pavilions, small architectural forms, small fountains, runlets, flowerbeds, sprinkler systems, etc. Clients tend to work with companies solving a number of problems at once.

Landscape design studios are a new trend. Stable demand for the services of professional landscape designers, a high level of profitability, and small initial investments make this type of business attractive for start-ups. Though competition in this area is relatively high, mainly, this relates to the companies working in the high price segment. In the meantime, landscape services are in great demand also among middle income people.

What services are proposed by a landscape design studio? First of all, the design of gardens including planting, construction of artificial ponds and erecting decorative and functional fencing (fences, gates), planning and paving paths (asphalt, paving stone, natural stone), creation of the grounds, construction of the sprinkler and lighting systems, and earthworks (flower beds, lawns, alpine hills). A number of related activities are subcontracted to other companies.

Landscape designs in Europe and North America often use large quantities of herbicides and insecticides. These have been effective in controlling unwanted plant growth and insects. However, serious issues have been raised concerning the impact of these chemicals on public health and the wider environment (i.e., beyond simply the plants and insects that are specifically targeted). Numerous jurisdictions in Europe and North America have banned the use of herbicides and pesticides at the household level. Accordingly, landscape design and services should be organized and implemented according to organic gardening principles.

2.8. Mainstreaming environment into business activities

"Environmental mainstreaming" may be defined as the integration of environmental considerations into decision making. For a SME, this means considering the impact of the activities of the company on the environment.

Businesses have often considered the environment as an external issue that constrains business activity. As a consequence, their response to environmental issues has been reactive: actions were taken to respond to legal requirements, for example, and often only if a regulatory inspection forces an SME to address its environmental performance. This approach results in "end-of-pipe" measures to address environmental issues: money is spent to control environmental problems (e.g., the control of pollutants) after the problem has already been created. From this perspective, investments to address environmental priorities may be considered "non-productive" and detract from the financial viability of a company.

The mainstreaming of environmental concerns sets out to prevent and minimize environmental impacts to minimize the costs of environmental controls, and to improve both the environmental and financial performance of the company. In many cases, environmental mainstreaming requires considering alternative product or production designs, or alternative material inputs that will result in improved environmental performance in production stages or when the product is used. For example, a paper manufacturer may select a low-water use technology not only to reduce the cost of water to manufacture paper, but also to reduce the cost of treating wastewater. In other cases, inputs may be selected based on their environmental profile, in addition to other relevant factors. For example, recyclable packaging may be selected to minimize waste management costs.

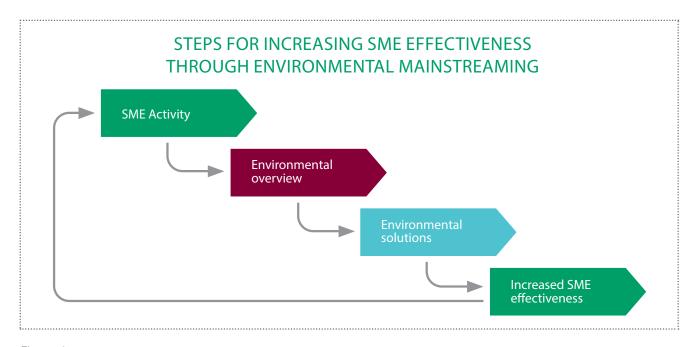


Figure 6.

All SMEs may adopt an environmental mainstreaming strategy. However, the opportunities associated with environmental mainstreaming will vary, depending on the activities of the SME. Figure 6 identifies the steps that may be taken by a SME to benefit from environmental mainstreaming:

SME Activity. This represents the existing activity of the SME.

Environmental Overview. This step involves determining the environmental performance of the SME. The following actions should be taken:

- Set up a working group that includes a participant from each major department to identify environmental issues throughout the company. Consider hiring external expertise to work with the working group.
- Perform an environmental audit and cost assessment that addresses all aspects of the environmental performance of the organization and including "normal" activities that relate to environment, such as energy use.

Environmental Solutions. Options for improving each aspect of the environmental performance of the organization should be identified, and attractive opportunities for change should be acted on.

- Consider the redesign of processes and the sourcing of new inputs, as well as operational changes to improve environmental performance.
- Implement financially attractive options, and particularly those that reduce the cost of addressing environmental problems after they have been created.

Increased SME effectiveness. The results of environmental mainstreaming will be increased SME effectiveness – reduced costs and higher net revenue. Increased SME effectiveness will become the "new normal" for the SME. In the future, environmental mainstreaming will be part of the "new normal" for the SME – i.e., it will simply be part of the way the SME does business. The environmental mainstreaming cycle will therefore continue:

- The environmental overview will be periodically updated.
- New opportunities will be identified for improvement based on new technology availability and updated cost/ revenue structures.
- New actions will be recommended and implemented.

Environmental mainstreaming is a normal part of SME operations in a large and growing range of SMEs because of the operational and financial benefits that it brings. SMEs that market their products directly to the public may receive the additional benefit that their activities and products are perceived as environmentally preferred. This also translates to increased revenues in markets that place an emphasis on the environmental performance of the products they sell. Mountain Equipment Coop is a Canadian SME that designs and retails its own brand of outdoor recreational products; the company provides a good example of environmental mainstreaming.



MOUNTAIN EQUIPMENT COOP, CANADA

Mountain Equipment Coop is a national designer and brand-name retailer of outdoor recreational products. One of its corporate values states it will operate in environmentally sustainable ways which minimize ecological impact. The organization looks for ways to minimize waste, water use, and energy use while at the same time using materials that are independently verified to be environmentally preferred (e.g., by the Bluesign program). The company performs audits of its environmental performance annually, and reports the audit results on its website. Audits help identify opportunities for environmental improvement.

The mainstreaming of environment into all aspects of company operations has reduced costs (e.g., reduced energy, water, and waste management costs), increased its market share (because consumers respond positively to its environmental sustainability profile), and continues to meet its sales targets (CDN 366 million in 2015).

(For more information: https://www.mec.ca/en/explore/sustainability-innovation

3

FROM IDEAS TO REALITIES: GREEN BUSINESS DEVELOPMENT SERVICES

The integration of environmental issues into a business is not a fashion anymore; increasingly, it is part of normal business. Environmentally friendly business saves funds, create conditions for positive marketing and to attract new clients. The integration of environment can be achieved in the activity of any enterprise, including small and medium-size. This chapter reviews the opportunity for business development services to assist the greening of SMEs at each stage of the business development cycle.

3.1. Business concept stage

Entrepreneurs may consider the opportunity to develop a business that is oriented to the growing trend towards healthy lifestyles, sustainable consumption, organic products, renewable energy, and other "green" sectors. At this stage of the business cycle discussion, brain-storming, and other activities that generate business ideas are key, together with the main directions for turning ideas to a business reality.

Identification of the market opportunities envisages detecting opportunities for development of the business aimed at satisfying the needs in goods and services in ways that are consistent with environmental sustainability. This can be achieved through market research for detecting the needs and desires and through conducting hands-on trainings, meetings, conferences to discuss the opportunities. Also, it is possible to conduct the competitions to demonstrate and promote "green" business ideas.

Such services can be provided by business coaches, meeting/event facilitators/ organizers, researchers, consultants, and local non-profit organizations.





UKRAINE

In 2015, the non-profit organization Communication for Changes together with Ekonomika Communication Hub, and with the support of UNDP and the Global Environmental Fund (GEF) organized and conducted competition on business solutions for sustainable development for small and medium-size enterprises. ²⁶ The objective of this competition was to find and promote business solutions which are environmentally friendly, have positive social impacts, and are also economically viable. Companies in Ukraine with a turnover of up to UAH 150 million per year and the staff of up to 250 employees could take part in the competition. In total, 105 applications were submitted from all regions throughout the country, and out of 50 companies that reached the final round, the panel selected 10 winners.

Business solutions in the following areas were presented at the competition:

- Farming and nutrition (production of natural, healthy, organic, and safe products, creation of the shops for organic farming products and public catering).
- Energy (production of the fuel from straw, pellets from sunflower cake, use of secondary energy resources, charging stations for battery powered cars),
- Transport (services for cyclists, battery powered cars, quick delivery from e-shops).
- Construction (houses from straw and clay, and also technical hemp),
- Tourism (tourist routes and eco-hotels).

²⁶ The competition of business solutions for sustainable development was called STALO for SMEs. – http://stalo.delo.ua/

- IT (creation of the optimal delivery routes, information about tourism and recreation, provision of medical alarm systems services for the elderly and disabled).
- Recycling of materials (collection and sale of the used goods; processing of waste tires, removal of office waste paper and sale of the paper products from recycled paper).
- Development of innovative technology for waste treatment facilities.





The Canadian Center for Rural Creativity supports the exchange of information and ideas aimed at developing new local business initiatives, in particular initiatives reflecting environmental sustainability principles. In 2016, the center organized a three-day conference bringing together entrepreneurs and potential entrepreneurs. Environmental sustainability was among the issues included in the agenda. Presentations and discussions of success stories covered a variety of angles:

- Rural stories: The participants shared their stories and listened to others providing an opportunity to establish cooperative networks and build relationships between the delegates with the aim of cooperation and gathering the ideas.
- Round table discussions: Great ideas often appear in the course of "discussions at the kitchen table". An informal atmosphere was created for discussion of the developmental challenges of the new businesses. Success stories were presented along with the stories of failure. This allowed the participants to understand specific challenges.
- *Discussion sessions*: With the help of moderator, the real examples of business solutions for social problems were discussed to demonstrate that both big and small enterprises can work together.
- After Hours: Allowed the delegates to get in contact and discuss the ideas in the evening, after thinking over the ideas and information which they received earlier that day.

The conference was organized with the support of different state institutions, academic, and business organizations.

3.2. Start up

At this stage of development each enterprise should think of the potential environmental impact it will have, among other business-related opportunities and risks. Companies need information and analytical support to determine whether their activities comply with the environmental norms and to choose the measures for decreasing the impact of their activities on the environment. The main services demanded by SMEs are:

- 1. Assessment of potential impact on the environment and related legal /regulatory requirements. New businesses should consider the potential impact of their activities on the environment as one of the business issues it must address, and should develop its activities so as to minimize negative impacts, and to ensure that residual effects are acceptable.
- 2. Definition of marketing opportunities for using environmental performance. New businesses should use positive environmental characteristics to develop markets. Responsible consumption is becoming more and more popular, and entrepreneurs can position good environmental performance to support marketing and communications.
- 3. Specialized consultations regarding organization of activities, production in certain spheres.

Services to support "green" activities can be provided in centers for business development, business incubators with the support of local authorities, consultants, researchers, and environmental NGOs.



UKRAINE

Organic products production. In Ukraine, primarily small and medium-size enterprises are involved in organic agriculture. At the national level there are associations of organic products producers such as the Federation of Organic Movement of Ukraine, the Union of Certified Producers of Organic Products (Organic Ukraine), and the Association of Bio Producers (BIOLan Ukraine).²⁷ These associations provide the following services to SMEs:

- provision of necessary information about organic production;
- consultations regarding the systems, main requirements, rules of organic business;
- support in receiving information regarding the training centers for organic agricultural production;
- consultations regarding the search for market outlets for the agricultural organic products;
- consultations regarding cooperation of farmers-producers of organic food with processing companies;
- consultations regarding the sale of organic products;
- participation in national forums, seminars, conferences, round tables conducted by the association of producers of organic products;
- facilitation of participation in international specialized exhibitions on organic agricultural production, international seminars, and conferences.





In Canada, the government assists start-ups to address environmental (and other) requirements. Start-ups themselves may identify benefits associated with the environmental performance of their products.

Government Sector. BizPal is an on-line resource (http://www.bizpal.ca) helping start-ups with business planning and identifying the legal environmental (and other) documents that may be required for starting up a business. Information is provided to assist a start-up to:

- Understand the industry in which it will participate.
- Plan the business.
- Register the name and initial business filings of the start-up.
- Understand the environmental (and other) registrations, permits, and licenses that may be needed, including requirements for environmental planning or impact assessment that may be needed.

BizPal is tailored to specific business opportunities and requirements in different parts of Canada so that entrepreneurs can understand the advantages and disadvantages of starting their business in different locations.

3.3. Growth

As a company begins to grow, it will have to monitor compliance of its activities with environmental requirements.

The main service that can be provided by specialized organizations is an environmental assessment. This service monitors the impact on the air, water, soil, and other components of the environment for ensuring implementation of the regulatory requirements.

Services of environmental assessment and monitoring of activities regarding compliance with the environmental requirements can be provided by specialized private organizations, environmental experts, and relevant laboratories.

Federation of Organic Movement of Ukraine (http://www.organic.com.ua/), Union of Certified Producers of Organic Products "Organic Ukraine" (http://www.organicukraine.org.ua/), Association of Bio Producers "BIOLan Ukraine" (http://www.biolan.org.ua/)



GREAT BRITAIN

The UK environmental protection regulatory agencies, in 2002, created the website NetRegs for providing free of charge environmental recommendations to small and medium-size enterprises. The site contains:

- recommendations (divided by the types of activities) for 112 sectors of agriculture, construction, institutions, etc.;
- search library covering 41 environmental topic;
- guides regarding current national and European legislation and free of charge e-bulletin, in which information on amendments in environmental legislation is provided on a regular basis;
- self-assessment questionnaire allowing business representatives to get better understanding of what they can do to comply with environmental legislation;
- interactive training modules (regarding more complicated legislative requirements);
- video examples of the best practices;
- Waste Management Reference Book containing the contact details of the organizations dealing with waste recycling and removal.

Bi-annually NetRegs carries out wide scale telephone surveys, in order to understand how SMEs asses their environmental performance and the help they receive. In 2009, seven thousand enterprises were surveyed. According to the survey results, small enterprises used NetRegs for the following reasons: to learn about compliance with the legislation (56.4%), to find all relevant information in one place (23.4%), to form environmental reputation of the enterprise (10.2%), to learn how to decrease the amount of waste (7%). According to the assessment, using the services of NetRegs, UK SMEs saved annually GBP 58 million (on average GBP 2,600 per company). Launch of this project cost GBP 3.5 million. Its operational costs for the whole country were about GBP 1 million per year (currently they are GBP 250,000 per year).²⁸



UKRAINE

SME compliance with environmental requirements. SMEs often voice dissatisfaction with the fact that it is complicated for them to follow environmental requirements, and especially to understand which requirements relate to them. As environmental regulatory agencies, at the oblast level, have wide discretion in defining the regulatory regime, in one oblast a huge number of requirements regarding permits for the enterprises in a certain sector may exist, when in another oblast such requirements may be absent. It is difficult for the representatives of SMEs to find methodological recommendations or receive consultations which would clarify what can be done.

In 2015, the survey of small and middle-size enterprises in Poltava oblast was conducted regarding the improvement of their environmental performance. In the majority of cases (67.5%), SMEs get to know about applicable environmental requirements only after a visit of environmental inspectors. The enterprises also receive information about environmental requirements from Internet (37.6%), in the process of environmental impact assessment (20.5%), from practical trainings and seminars organized by business associations (20.5%), from e-mailing with the business associations or business partners (19.7%).

²⁸ NetRegs – <u>http://www.netregs.org.uk</u>

3.4. Maturity

At the stage of maturity, SMEs continue to monitor their activities regarding compliance with existing environmental requirements. SMEs assess the opportunities for improvement of their environmental performance. The result of this can be not only improvement of environmental performance, but also decrease of expenses and increase of profits.

Environmental audit services can become important to ensure that SMEs are both meeting their legal environmental obligations, and that they are optimizing their environmental performance. Environmental audit services can be provided by specialized private organizations and environmental experts.

Financial support may as well be important, in particular environmental credits, and advisory support regarding funding of the "green" investments. These services can be provided by the specialized programs and financial institutions.





UKRAINE

Environmental credits. The credit lines of the international financial institutions, which provide the opportunity for SMEs to receive credits through Ukrainian banks, are a main source of the long-term funding of "green" investments, especially in the sphere of energy and resource efficiency. For example, in 2007, European Bank for Reconstruction and Development (EBRD) launched the credit line (Ukraine Energy Efficiency Program – UKEEP)²⁹ with the aim of providing targeted funding to Ukrainian enterprises for energy saving and renewable energy projects. The UKEEP program provided independent technical advisory support, carried out by the international and local experts. In particular, SMEs from different sectors were invited to participate. The key criteria for participation in the program were: reduction of energy consumption or use of renewable energy sources. From 2007 until 2016, the credits were provided through partner financial institutions, and, in particular, through partner banks of UKEEP Program: Ukreximbank,³⁰ CreditProm Bank, Bank Forum, OTP Bank, Megabank and Raiffeisen Bank Aval. During that period, 133 energy efficiency and renewable energy projects were implemented. Total energy saving was 2,072 GWt*hour per year (out of them 60% – saving of the natural gas), or more than USD 75 million per year (in the equivalent of the current prices for energy resources).

Credits for clean production. Financial support for the technological modernization of SMEs in Ukraine is provided by the Northern Environmental Financial Corporation (NEFCO),^{31,32} in particular, through partner bank Mega Bank.³³ The program "Clean Production" is targeted at innovative technical production methods, allowing a decrease in energy consumption, minimizing raw material use and waste generation, and also enabling financial and natural resource savings.

For example, NEFCO provided a loan for the production of bio diesel from rapeseed at the farm named after Shevchenko (Rivne oblast, Zdolbuniv rayon, village Kopytkove). 130 people work at this farm. The production of bio fuel from rapeseed provided for 75% of the fuel required for their tractors, combines, and other vehicles. About 200 ha of the farm lands are annually planted with rapeseed, yielding up to 450 tons in harvest. 350 kg of oil can be produced from one ton of rapeseed, which provides for 150 tons of the annual volume of bio-diesel production. To fill the tank with usual diesel at the gas station costs 0.70-0.80 EUR per liter, and bio fuel costs only 0.27-0.30 EUR per liter. Filling the vehicles with bio fuel the enterprise annually saves up to EUR 30,000. A side product of the rapeseed oil production is a cake and other biomass; this is granulated and used as fuel for heating supply. Part of the cake is used as fodder for cattle. Investing in local sources of renewable energy, the company also decreased its greenhouse gases emissions (around 3.6 thousand tons/year). 34,35

²⁹ Ukraine Energy Efficiency Program (UKEEP) – <u>http://www.ukeep.org/uk/pro-ukeep.html</u>

³⁰ Ukreximbank – <u>https://www.eximb.com/ukr/sme/loans/energo/</u>

³¹ Northern Environmental Financial Corporation (NEFCO) – https://www.nefco.org/?language=ru

³² Credits to support SMEs' clean production are also provided by other donor and international financial institutions

³³ Mega Bank – http://www.megabank.net/ru/nefco_project/

³⁴ Northern Environmental Financial Corporation (NEFCO) – https://www.nefco.org/?language=ru

³⁵ Mega Bank – http://www.megabank.net/ru/nefco_project/



Provision Coalition is the food and processing industry initiative in Canada. The Coalition identified that the value of food that is thrown away in Canada is about CDN 30 billion per year. Unused food has significant impact on the environment which can be avoided. For example, energy is used for growing, transporting, and processing food which is not consumed. Also, a huge amount of pesticide is wasted. Provision Coalition developed a special instrument to help the members of the coalition find opportunities for decreasing the amount of food waste, decreasing their environmental impact, and, as a result, improve their financial performance. This instrument can be used by a company for quantitative evaluation of food waste and detecting the main reasons for food waste generation, selection and assessment of solutions, implementation of the solutions, and monitoring of their implementation.³⁶

3.5. Stagnation. Exit

At this stage, very often, the company has to look for new ways of development. Applying more environmental approaches in the process of production can create new prospects for sales, may result in re– positioning the company in the marketplace or may identify new opportunities for product development. In any of these cases the company may adopt a new strategy that leads to renewed growth.

Alternatively, a company may decide that its best course of action is to exit the marketplace, either through closure or sale of the business. In these cases, the company must demonstrate that there are no environmental liabilities associated with its property or operations; any liabilities will need to be corrected before the sale or closure of the property or operations. Environmental assessments and inspections are required to demonstrate compliance with environmental regulations.

The performance of environmental assessments and inspections is a specialized service for which SMEs may not have the capacity. The required services can be provided by specialized experts and private organizations.





Environmental audits are conducted with the aim of ensuring compliance with environmental legislation. Central and local executive authorities, local self-governance bodies, other legal and natural persons can be the clients for the environmental audit. The implementer of the environmental audit can be legal or natural person (environmental auditor) qualified for carrying out environmental audit in accordance with the requirements of the law of Ukraine "On Environmental Audit". A register of environmental auditors is maintained by the Ministry of Ecology and Natural Resources of Ukraine. 37

Independent expertise is required for the performance of an environmental audit to support a merger or acquisition to ensure the results of the audit are not influenced by the self-interest of either the vendor or the purchaser of the business. The objective of this service is to provide to the customer full and correct information regarding environmental and social impacts of business, in particular on:

- current environmental status of material assets;
- compliance of a business with the requirements of the national legislation, international standards and the best international practices;
- efficiency of the existing system of environmental management;
- extent of the potential environmental risks and significance of their potential effects;
- level of responsibility in the environmental and social dimensions.

 $^{^{36} \}quad \text{Provision Coalition of Canada} - \underline{\text{http://www.provisioncoalition.com}}$

Ministry of Ecology and Natural Resources of Ukraine – http://www.menr.gov.ua/control/control2/268-reiestr-ekolohichnykh-audytoriv



Environmental issues play an important role in transfer of assets and obligations when the company is at the "exit" stage of the business development cycle. Thus, an environmental audit is a key component of the transfer of assets. Environmental audits are checked by the new owner in the process of the purchase. If environmental problems are not corrected, the purchase price of the assets is adjusted taking into account the expenses for rectifying any problems including, for example:

- contamination of the assets with waste or polluting substances,
- contamination of ground waters or surface waters,
- documentation regarding all environmental permits and licenses,
- documents for hazardous materials that are kept on-site,
- presence of asbestos in any structure,
- documenting of the environmental practice and reporting,
- documentation regarding any court proceedings related to the environment.

In some cases, the cost of solving environmental problems can be higher than the asset value of the company.

ENVIRONMENTAL LEGISLATION FOR SMES IN UKRAINE

4.1. Environmental legislation for SMEs in Ukraine

Ukrainian environmental legislation is rather exhaustive, complicated, and sometimes contradictory. It consists of international conventions, agreements, protocols, and treaties that were ratified by the parliament, and also laws, regulations, and decrees of the Cabinet of Ministers of Ukraine and orders of the ministries. Different norms, procedures, standards, and instructions, which together compile the regulatory framework, are approved by the decrees of the Cabinet of Ministers of Ukraine and orders of the ministries. In order to come into force each regulation shall be registered with the Ministry of Justice of Ukraine.

Bylaws of numerous governmental institutions (ministries, state agencies, state inspections, state services and other central executive bodies), defining the powers of the relevant state authority and its branches and departments at the regional (oblast and rayon) level, are also very important. This part of legislation was substantially amended after the administrative reform of 2010, when the overall system of the state authorities was changed.

Environmental protection aspects are also regulated by relevant legislative provisions, contained in other parts of country's legislation (civil law, Water Code, Land Code, administrative legislation, criminal law, etc.) More specifically, these provisions define the essence and limits of the fines and disciplinary norms, as well as administrative, material and criminal responsibility that are applied to the violator of the environmental norms and relate to harm caused by the violator, environmental risk, and severity of the caused negative effects.

Legislation in the sphere of the water resources protection

The legal framework for water resources management in Ukraine is defined by the Water Code (1995) and other legislative acts, which were developed to ensure maintenance, balanced and scientifically grounded use and restoration of the water resources, protection of water resources from pollution, contamination and depletion, prevention and mitigation of the negative impact, improvement of the environmental condition of the water objects, and protection of the rights of water consumers.

The most important issues for water supply and waste water disposal are the permission for water extraction from the water supply sources (permission for special water use) and permission for the disposal of treated and not treated waste water into the environment. Since May 18, 2013, the permissions for the special water use are provided by the Ministry of Ecology and Natural Resources of Ukraine, Council of Ministers of the Autonomous Republic of Crimea and oblast administrations (for the centrally administered water resources) and by environmental protection executive authorities of the Autonomous Republic of Crimea and oblast councils (for the locally administered water resources). At the same time, the procedures of issuing permissions remained unchanged.

The main acting legislation and norms in the area of water use include:

- Decree of the Cabinet of Ministers of Ukraine "On Approval of the Procedure of Issuing Permissions for the Special Water Use";
- Decree of the Cabinet of Ministers of Ukraine "On the procedure of development and approval of maximum permissible discharge of the contaminants and the list of the polluting substances, subject to regulation";
- State Sanitary Norms and Rules "Drinking water. Hygienic requirements to the drinking water, meant for human consumption".
- Order of the Ministry of Ecology and Natural Resources of Ukraine "Instruction on the procedure of development and approval of the maximum permissible discharge (MPD) of the substances into the water objects together with recycled waters";
- Decree of the Cabinet of Ministers of Ukraine "On the legal framework for the areas of sanitary protection of the water bodies".

Legislation in the area of ambient air protection

Legal and institutional framework and key environmental requirements in the sphere of the ambient air protection are defined in the Law of Ukraine "On Ambient Air Protection" (1992). This law is aimed at protection and restoration of the natural conditions of the ambient air, creation of the favourable conditions for the livelihoods, ensuring environmental safety, and prevention of the hazardous impact of the ambient air on human health and environment.

The main legislation regarding ambient air protection include:

- Decree of the Cabinet of Ministers of Ukraine "On the procedure of development and approval of the maximum permissible limits of the impact of physical and biological factors of the stationary pollution sources on the condition of the ambient air";
- Decree of the Cabinet of Ministers of Ukraine "On approval of the Regulation on the procedure of issuing permissions for the discharge of contaminating agents in the ambient air by the stationary sources";
- Decree of the Cabinet of Ministers of Ukraine "On approval of the Regulation on the procedure of the state record keeping in the sphere of the ambient air protection";
- Guide on Inventory of Sources of Emission into Ambient Air;
- Maximum allowed concentrations and "allowed levels of safe effect" of the contaminants in the ambient air for the inhabited areas.

Waste management legislation

Laws regarding waste management include the Law of Ukraine "On Waste" (1998) and other legislative acts that were developed for regulation of activity in order to avoid or minimize generation of waste, regulate storage and management of waste, prevention and decrease of the negative impacts from generation, storage and management of waste on the environment and human health. This law also defines the authorities of the Ministry of Ecology and Natural Resources of Ukraine, Ministry of Regional Development and Construction and Housing and Communal Services of Ukraine and other ministries and local bodies.

The main legislation regarding waste management include:

- Law of Ukraine "On Environmental Protection" (1999);
- Law of Ukraine "On Ensuring Sanitary and Epidemiological Well-being of the Population" (1994);
- Law of Ukraine "On Radio Active Waste Treatment" (1995);
- Law of Ukraine "On Scrap Metal" (1999);
- Decree of the Cabinet of Ministers of Ukraine "On approval of the Procedure of introducing state record keeping and passportization of waste" (1999);
- Decree of the Cabinet of Ministers of Ukraine "On approval of the Procedure of maintaining the register of the objects of waste generation, processing and recycling" (1998);
- Decree of the Cabinet of Ministers of Ukraine "On approval of the Procedure of submitting the declaration on waste and its forms" (2016);
- Order of the State Committee of Ukraine on Standardization, Metrology and Certification, that approves "Waste Classifier" (1996).

Environmental regulation regime

The frequency of inspections in Ukraine is differentiated by the extent of risk. According to the Decree of the Cabinet of Ministers of Ukraine "On approval of the criteria for classification of the economic objects by the extent of risk inflicted by their economic activities on the environment and frequency of state oversight measures (control)" (No. 212 from March 19, 2008), all enterprises are divided into the enterprises with high, average, and insignificant level of environmental risk on the basis of the criteria of the hazardous waste management and general amounts of emissions into the ambient air and discharge of the waste waters.

The frequency of inspections of an object with high environmental risk cannot exceed one visit per year, average risk objects are one inspection every two years, and other objects require one inspection every three years. SMEs have the advantage of curtailed inspections to ease the administrative burden of compliance with the requirements. In accordance with the Order of the Ministry of Ecology and Natural Resources of Ukraine (2008), the duration of the scheduled inspection can be no more than five working days (for other enterprises – 15 days), and of unscheduled inspection – no more than two working days (for other subjects – 10 days).

Sanitary norms

Sanitary norms are defined by the Law of Ukraine "On ensuring sanitary and epidemiological well-being of the population" (1994). In accordance with the Decree of the Cabinet of Ministers of Ukraine "On Certain Issues of the State Sanitary and Epidemiological Service" of March 29, 2017 No. 348 the State Sanitary and Epidemiological Service was liquidated. Functions for the implementation of state policy regarding sanitary and epidemiological well-being of the population and implementation of control (supervision) for compliance with the requirements of sanitary legislation (except functions for the implementation of state policy in the field of epidemiological surveillance (observation) and in the field of occupational health and functions for the implementation of dosimetry control of workers places and doses of irradiation of workers) is assigned to the State Service of Ukraine for Food Safety and Consumer Protection.

Access to information and public participation

In Ukraine, access to environmental information was ensured by the ratification, in 1999, by Verkhovna Rada of Ukraine of the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention). The Ministry of Ecology and Natural Resources of Ukraine developed a number of the regulatory acts for implementing the provisions of this convention.

Environmental impact assessment

The Law of Ukraine "On Environmental Impact Assessment" dated May 23, 2017, No. 2059-VIII, sets out the legal and organizational basis for environmental impact assessment aimed at preventing environmental damage, ensuring environmental safety and protection, effective environmental management and recovery, in decision making processes on business activities that may have significant environmental impact regarding government, public, and private interests.

According to the law, enterprises will receive a "conclusion" on environmental impact assessment instead of a state environmental expert review.

The law stipulates that environmental impact assessment is a mandatory procedure for specific types of planned activities and facilities such as: oil refineries and gas processing plants (except for entities that produce only lubricants from crude oil), thermal power plants, atomic power plants, and other nuclear facilities, facilities for nuclear fuel production or enrichment; iron and steel industry, non-ferrous industry; chemical industry, and other types of activities.

The environmental impact assessment procedure envisages: preparing of environmental impact assessment report by economic agent; conducting of public hearings; analysis, by authorized authority, of information provided in the environmental impact assessment report, any additional information provided by economic agent, and information obtained from public in the process of public hearings and in the process of cross-border impact assessment; and provision of justified conclusion on environmental impact assessment by authorized agency.

Engineering research, design and development activities are regulated by the Ministry of Regional Development and Construction and Housing and Communal Services of Ukraine. There are a number of acting architectural and construction norms and standards, including State Construction Norms, regarding the preparation of the Environmental Impact Assessment Report (DBN A.2.2-1-2-3 "Structure and content of the materials of the Environmental Impact Assessment (EIA) Report").

The main regulation, regulating all types of construction is the Law of Ukraine "On Regulation of City Development Activity" from 12.03.2011. This law and state construction norms "List of project documentation for the construction works" (DBN À.2-3-2014) provide information regarding documentation that must be prepared for different types of construction projects and regarding the review procedure for such documentation.

Full EIA (as defined in DBN À.2.2-1-2003, with the materials of public hearings) is required only for implementation of the projects with the high environmental risk (part 31 of the Law of Ukraine "On Regulation of City Development Activity"). In order to determine whether a project requires a full EIA, the developer, together with the design company, must apply the criteria defined in the Law of Ukraine "On High Risk Objects" (2001) and the Decree of the Cabinet of Ministers of Ukraine from 11.07.2002 "On identification and declaring the high risk objects". Identification is the responsibility of the owner of the object and is based on the volumes of the hazardous substances (for example, chlorine). Additionally, there is a list of types of activities and objects that pose increased environmental hazard, approved by the Decree of the Cabinet of Ministers of Ukraine from 28.08.2013.

Part 2, Article 31 of the Law of Ukraine "On regulating city development activities" establishes that expert evaluation of project documentation is carried out by licensed expert organization in accordance with the procedure set out in the Decree of the Cabinet of Ministers of Ukraine from 11.05.2011 No 560. This Decree stipulates that mandatory expert evaluation, which shall include environmental and sanitary and epidemiological aspects, must be conducted for the projects of the 4th and 5th category of difficulty. The procedure of classification (which projects shall be referred to the 4th and 5th categories of difficulty) is defined by the Decree of the Cabinet of Ministers of Ukraine from 27.04.2011 No 557. This classification does

not relate to the objects of the "increased hazard", which were mentioned above, and is based on the number of permanent residents (over 300), or temporary residents (over 10 thousand people), which can suffer in case of emergency. It is the responsibility of the owner of the project to define whether the project refers to these categories.

State support to the small and medium-size enterprises

The main law defining the regulatory and economic framework of the state policy regarding the development of the small and medium-size enterprises is the Law of Ukraine from 22.03.2012 No 4618-VI "On development and state support of the small and medium-size enterprises in Ukraine". The law emphasizes reducing the administrative burden on SMEs and increasing their competitiveness.

Part 1 of Article 15 of the law sets out that state support to small and medium-size enterprises include financial, information, advisory support, including support in the area of innovations, science, industrial production, support of small and medium-size enterprises involved in export activities, support in training, retraining and in-service training of the managerial and business staff.

Financial support to the small enterprises at the national level is provided as part of the budget program "Micro Crediting of Small Enterprises", the volume of funding of which is approved on the annual basis by the Law of Ukraine on State Budget of Ukraine for the relevant year.

Provision of the micro credits under the mentioned program is carried out in accordance with the procedure approved by the Decree of the Cabinet of Ministers of Ukraine from 27.07.2011 No 794 "On approval of the Procedure of use of funds envisaged in the state budget for micro crediting of the small enterprises" through Ukrainian Entrepreneurship Support Fund (UESP) in a way of the conducting competition of the business plans of the small enterprises. More detailed information on the conditions of and participation in the competition can be obtained at the UESP official website.³⁸



FUNDS FOR SME SUPPORT IN UKRAINE

There are three potential sources of state funding for small enterprises in Ukraine:

- Ukrainian Fund for Entrepreneurship Support;
- State Farmers' Support Fund of Ukraine;
- Ukrainian State Innovations Fund.

The main tasks of the Ukrainian Fund for Entrepreneurship Support are:

- 1. Supporting state policy for entrepreneurship development by raising and using financial resources, on a refundable and non-refundable basis, funding of the targeted programs and projects and the partial payment of the interest rate for the credits provided by the banking credit institutions to the entrepreneurs.
- 2. Cooperating with international and Ukrainian financial institutions on issues of business development.
- 3. Participating in the implementation of international treaties regarding financial support to business development in Ukraine.

The funds envisaged in the state budget of Ukraine for the financial support of entrepreneurship are used for implementing the Fund's tasks. Taking into account insignificant amount of funds that were at Fund's disposal, it did not become a viable mechanism.

The State Farmers' Support Fund of Ukraine was created to support rural entrepreneurial activities – in particular, enterprises collecting, processing, storing, and selling agricultural products, or those producing materials related to agricultural activities. The main objective of the Fund is to ensure state policies are implemented for rural and farmer support which create stable financial conditions for a competitive private rural sector economy. The budget of the Fund is replenished annually through the state budget and is used to develop land, compensate expenses linked to interest rates for bank loans and for other needs envisaged by the Fund's charter.

Another source of small business state financial support is the **Ukrainian State Innovations Fund**. The fund is capitalized from the state budget, fees, and donations. The fund provides soft loans for 12 to 18 months for projects related to refurbishment, equipping, and production of research intensive products as well as substitute for imported products.

³⁸ Ukrainian Entrepreneurship Support Fund – <u>www.ufpp.gov.ua</u>

4.2. Challenges of environmental regulation of SMEs

In OECD member countries, the environmental regulation regime is formed, as a rule, around environmental risk, and is not based on the size of the enterprises. There are no environmental regulations targeted directly at SMEs. Instead, environmental risks associated with production are considered. In general, this approach is effective, though in some sectors (such as asbestos production) the threshold indicators are not applied, and thus any object formally becomes a regulated polluter. The majority of SMEs are low risk producers.

In Ukraine, environmental protection bodies do not have full information about the number of SMEs subject to environmental regulation and do not collect such information. At the same time, SMEs are a separately regulated community.

The main difficulties regulating SMEs regarding environmental sustainability are:

- variety and complexity of SME activities (influence the nature and extent of the environmental problems);
- multitude of operators and thus absence, in the regulating bodies, of information on the level of compliance with the requirements;
- implicitly limited potential (lack of resources, time and professional knowledge) for adopting regulatory requirements and complying with them;
- low level of awareness of the owners of small business about the need to eliminate environmental impact and thus comply with the relevant norms.

In Ukraine, the majority of SMEs are either not subject to environmental regulation or do not know that they are subject to it. According to the results of the survey in Poltava oblast, 39.5% of SMEs state that they are not subject to any environmental requirements, and 32.4% of SMEs mention that they comply only with general obligations (sometime called "the obligation to be cautious"). Less than 30% of SMEs report that they have environmental permit or license, though, in the sectors that have significant environmental impact (mining and food processing industry) this is higher. The largest share of SMEs having environmental permits consists of the medium-size enterprises (79%), the smallest are micro-enterprises (18%). SMEs, which do not have environmental permits, are not subject to the requirements of submitting environmental reports. Ukrainian environmental protection bodies, as a rule, do not know about the existence of such SMEs.

The regulatory regime, acting in Ukraine, does not envisage issuing integrated permissions covering all environmental components: separate permissions for atmospheric emissions, discharge of waste waters and placement of solid waste are issued to the enterprises. There is no relevant differentiation between big polluters and small risk enterprises. Environmental regulatory bodies at the oblast level have wide discretion in defining the regulated community. Thus, SMEs in a certain sector in one oblast can be subject to numerous requirements regarding obtaining permits, and in other oblasts such requirements may be absent. Small enterprises often voice dissatisfaction with the fact that it is complicated for them to follow environmental requirements, especially understanding which requirements relate to them. It is difficult to find methodological recommendation or receive consultations which would clarify what can be done to comply.

Information about environmental regulation is not disseminated actively enough among SMEs by the Ukrainian government. The website of the Ministry of Ecology and Natural Resources of Ukraine is the main official source of information about environmental norms, but it is poorly organized and not all SMEs use it. Sometimes, the Ministry organizes press conferences and publish press releases regarding specific environmental problems, but not with the aim of facilitating compliance with the environmental requirements and implementation of best policies.

As OECD member countries' experiences demonstrate, state support for compliance with the requirements decreases the expenses of the enterprises for such compliance, allowing them to efficiently fulfill the requirements and continue to comply with them. This can decrease the expenses of the regulatory bodies. Facilitation of compliance is especially effective when it is aimed at SMEs, which do not comply with the requirements, first of all, because of lack of awareness and potential and which are apt to oppose enforcement.

In Ukraine, the State Environmental Inspection does not have official functions for facilitating the compliance. A number of sector associations try to facilitate enterprises' compliance with the environmental requirements with the help of publications, meetings of the working groups, seminars and awards. However, as a rule, they implement short term initiatives, which do not produce long term results. Besides, there no close cooperation is established on these issues between business associations and environmental protection bodies.

Over 96% of the respondents of the SME survey in Poltava oblast (see Section 2.3), who are subject to environmental regulation, state they comply with the requirements. This figure may be overstated. Only 3.9% of the surveyed SMEs recognized that they have difficulties related to the national environmental legislation. At the same time, during the previous 3 years, violations of the environmental requirements were detected for more than 35% of respondents. The Ministry of Ecology and Natural Resources of Ukraine does not have statistics on the level of compliance with the requirements of the small risk objects; as well, it does not have information on sectoral strategies for assessment and increasing the level of SME compliance with environmental requirements.

5

CAPACITY BUILDING



GREEN CAPACITY BUILDING

is the process of developing and strengthening individual skills and organizational capability to respond to the challenges and opportunities that come from regulatory and consumer focus on environmental sustainability. "Green" capacity building is important for SMEs because their cost structures may not allow dedicated staff to address environmental sustainability challenges and opportunities.

Green capacity building is relevant for SMEs as follows:

- SMEs often do not have the in-house expertise to address environmental regulatory requirements.
- Increased levels of environmental awareness among consumers may create market opportunities that SMEs may not have the in-house expertise to capture.
- Changing environmental regulatory requirements and demand for environmentally-sustainable goods and services create opportunities for the development and expansion of environment-sector SMEs.

5.1. The demand, supply, and benefits of green capacity building

Figure 7 identifies demand pressures for SME green capacity building, the supply of green capacity development services and products in response to demand, and the benefits to both SMEs and society of green capacity building.

5.1.1. Demand for green capacity building

Demand for green capacity building in SMEs is created through both a "push" factor and a "pull" factor. The "push" factor is the environmental regulatory requirements that are imposed by legislation to ensure that the activities of SMEs and others do not result in unacceptable levels of environmental damage.

Environmental regulatory requirements for SME performance are detailed in the legal framework and are implemented by State entities. Implementation of the Ukraine-EU Association Agreement, however, will result in the orientation of the environmental legal framework towards the norms and standards of the EU. As this process develops a wide variety of issues will need to be addressed by SMEs at the level of both individual skills and corporate organization:

- SMEs may require new skills within their workforce to address new environmental sustainability requirements. These
 may relate to new procedures to be followed, new reporting requirements to be undertaken or new environmental
 sampling/analysis protocols to be fulfilled. At this level, green capacity building will focus on the creation of skills to
 meet new requirements.
- SMEs may continue to address regulatory requirements related to environmental sustainability through their existing organizational structures. However, a changing business environment, new technologies and changing cost structures may mean that it is advantageous for SMEs to make organizational changes to minimize the costs of environmental compliance and to integrate environmental compliance requirements with other compliance requirements (e.g., occupational health and safety). At this level, capacity development will focus on the corporate organization of a SME.

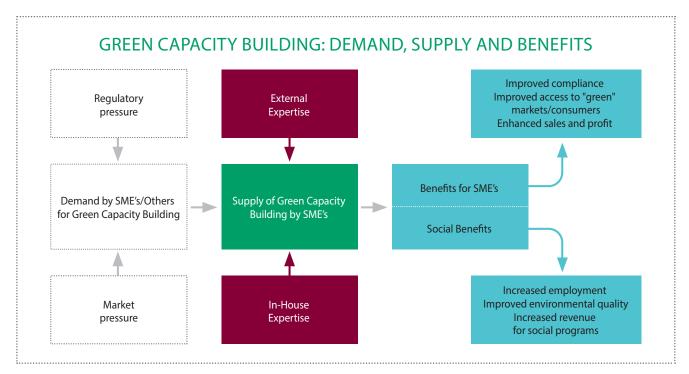


Figure 7.

The "pull" factor is market demand for environmentally-preferred services and products. Market orientations have been changing rapidly in this regard in recent years as consumers develop greater levels of environmental awareness. Responses to market pressures for green performance are often aligned with various programs that certify services and goods as being "environmentally-preferred" according to criteria that are established by the program. There are over 200 programs of this kind in Europe that certify environmental sustainability, some for specific categories of services or products and others that are more generally applicable across service and product categories. The EU Ecolabel program alone covers over 38,000 services and products, and the symbols used by this program and others to signify an environmentally-preferred service or product are also seen on a daily basis by consumers across Ukraine. Even services and products that are not formally part of an environmental sustainability certification program will frequently benefit from marketing that positions the service or product as "environmentally-preferred." ³⁹

SMEs may not be well positioned to understand the environmental sustainability priorities that consumers attach to services and products, and may not understand how to compete effectively at this level. On the other hand, they may feel pressure to compete on the basis of environmental sustainability if their services or products fail to meet sales targets and expectations. SMEs that export to the EU may, in particular, feel pressure to demonstrate that their services and products meet the environmental sustainability criteria that the marketplace has come to expect for the sector they operate in.

5.1.2. Supply of services and products to meet green capacity building demand

"Green" capacity building begins with the supply of services to develop new technical skills and/or the creation of new organizational structures to respond to the environmental sustainability pressures (either regulatory or market) that are faced by a SME. The implementation of new skill sets and organizational structures is often accompanied by investment in products that may include new equipment, technology, and information management systems. Two approaches are possible for the supply of green capacity building services and goods:

- New companies may be created or existing entities may expand to take advantage of the new demand.
- An organization that requires enhanced environmental services may decide to develop the required expertise in-house if the long-term requirement is sufficiently important, or may develop in-house expertise as a new line of business to offer to others.

³⁹ The EU Ecolabel program – http://ec.europa.eu/environment/ecolabel/facts-and-figures.html

Opportunities for new companies and expansion of existing companies

Capacity building in the environment sector is a niche market that nevertheless holds many opportunities for growth. The "push" and "pull" factors mentioned above create demand for green business strategies. This creates a business environment that supports the growth of companies that can supply the required services and products.

New companies that enter the green capacity building sector and companies that wish to expand in the sector must offer the following in order to be successful:

- For green capacity building services, staff with relevant, high level education and client results that demonstrate the effectiveness of the services that have been provided.
- For supply of products to implement green capacity building strategies, products that are reliable and cost-effective in the market that is targeted.
- For the supply of both services and products: a compelling reason to hire the company to provide the service, or to buy the product. Without a compelling reason, a potential client is likely to select another company to provide the required services or products.

Many companies that may want to enter the green capacity building sector may lack the knowledge, expertise or products to successfully enter the marketplace. Partnerships with foreign companies may provide opportunities in this regard. Foreign companies may bring compelling knowledge, expertise and/or products to Ukraine, but they may not understand the business norms and practices in the local context and they may lack contacts with a potential client base. A natural fit may therefore present itself in which a local SME that wants to enter the green capacity building market partners with a foreign company in a relationship in which each supplies what the other lacks to be successful in the green capacity building sector.



ENTERPRISE DEVELOPMENT AND TRAINING PROGRAMME - BAKU, AZERBAIJAN

BP maintains large oil production operations in Azerbaijan. Since 2007, the company has implemented its Enterprise Development and Training Programme to support the creation of high quality environmental and other service companies to participate in its supply chain, and to develop the wider Azerbaijani economy. Companies that have participated in the program have won environment and other sector contracts valued at over USD 400 million and have hired over a thousand employees.

Source: http://www.bp.com/content/dam/bp/pdf/sustainability/country-reports/BP_SR2012azerbaijan.pdf - p. 44.

Development of in-house expertise

SMEs may decide to supply the expertise or products to meet their green capacity building demand internally. Typically, this can be done by creating a responsible entity with the SME (i.e., unit/section/ department) that coordinates the development and implementation of green capacity building and implementation throughout the SME. This may be an effective strategy for green capacity building as long as green capacity building requirements are well-defined and within the scope of expertise of the organization (e.g., improved strategies for addressing environmental compliance issues). In other cases (e.g., developing a green marketing strategy and eco-label qualification) it is likely that external expertise may be required initially – but that further development and implementation of a green capacity building strategy may be undertaken in-house.

Large corporations – and particularly international corporations – frequently have an environmental sustainability policy that commits the corporation to maintaining specified environmental sustainability standards. These policies often also require companies in their supply chain to maintain similar standards as an obligation of their supply contract. Green capacity building may be provided by the international corporation to local SMEs who are its suppliers. This approach allows the SME to benefit from high levels of directly relevant green capacity building that may be implemented in support of its relationship with the international corporation. In addition, this may also become a basis for development of a wider client base that requires green capacity building.

SMEs may become recognized for their environmental sustainability programs and may then choose to develop their environmental sustainability expertise as a new line of business. In this case, the SME may deliver green capacity building to other companies. This results in the diversification of the business and client base of the SME, and generates new revenues.



PROFITING FROM GREEN CAPACITY BUILDING: PATAGONIA CLOTHING COMPANY

Patagonia Clothing Company decided to link the environmental sustainability of its products with the marketing of its products. This required green capacity-building to understand the opportunities that this approach would bring, and the methods necessary to put it into effect. Today, the environmental sustainability profile of the company is widely recognized. The company has annual sales of over USD 600 million and receives requests from private, NGO, and government organizations to lead green capacity building.

Source: http://www.patagonia.ca

5.2. Creating conditions for green business

Governments benefit from the growth of green business:

- Jobs are created:
- Knowledge-based, export-oriented services, and industries are developed;
- Tax revenues are increased.

Policy measures that should be taken by state agencies to support the growth of the green economy are presented in this section.

5.2.1. Education and training

The creation of a workforce that is skilled in the application of green services and technologies is key to the growth of a green economy. State training and education programs at all levels should therefore integrate environmental sustainability within the scope of the programs.

The majority of SMEs would like to receive clear, systematized information about minimum legal requirements. The provision to SMEs of a single list of relevant norms that must be complied with will ensure a base level of knowledge. On the other hand, lengthy methodological recommendations by regulatory authorities can be complicated for SME, and should be avoided. Instead, short descriptions of problems, their solutions (step by step guidance) and indication of the sources of additional information can result in faster and more effective corrective action by SMEs.

There is a widely spread misconception that greening corporate activities are associated with technical difficulties, workload, and expenses. In fact, there are often no cost/low cost actions that can be taken that are financially attractive to a SME, but which have not been identified by the SME. However, SMEs are often not informed about these opportunities and do not have the capacity to act on the opportunities when they are aware of them.



ON-SITE PROGRAM: GOVERNMENT ASSISTANCE TO PROMOTE GREEN SME OPERATIONS

From 1983 to 2006, the Government of Canada placed unemployed engineers in SMEs for up to 6 months to develop and implement plans to achieve greener operations. The engineers were often recent university graduates and were paid with the unemployment benefits they would anyway have received from government. The successful implementation of greening programs resulted in the SMEs hiring over 80% of the engineers at the end of the placement period.

In many cases, industry associations may be positioned to provide information that can help an SME green its operations. However, industry associations have generally not prioritized environment as a sector in which they work, and therefore have not developed credible technical resources of this kind that could assist members with environmental compliance. Also, many SMEs may not belong to an industry association. Local authorities may be a source of knowledge SMEs in these cases.

Goal-oriented, concise, and easy-to-use guides are very useful for promoting the idea that environmentally safe methods of work is a reasonable way of doing business. Seminars, training courses and industrial fairs (especially organized by the industry organizations and other business groups) also help to successfully communicate information or general recommendations regarding implementation of the "green" methods of doing business. However, the majority of SMEs will unlikely be able or willing to spend time for participation in such events, as, usually, they do not have the staff to deal with environmental issues.

In parallel with education activities, it is very important to maintain an effective environmental compliance program. A failure to enforce environmental (or other) legal instruments threatens the credibility of the legal system and creates an uneven playing field for companies. Companies that maintain proper environmental performance are companies that invest capital and human resources in environmental sustainability. A failure to enforce environmental requirements effectively penalizes companies that have made the investments necessary to ensure compliance. In addition, it discourages investments in environmental sustainability services and goods by others.

5.2.2. Enabling conditions for change

The Government of Ukraine has established a framework for enabling a greener economy:

- The law "On development and state support of the small and medium-size enterprises in Ukraine" (No 4618-VI from 22.03.2012) emphasizes the decrease of the administrative burden on SMEs and increase of their competitiveness. Article 16 provides financial support to energy saving and environmentally clean technologies.
- On May 24, 2017, the Cabinet of Ministers of Ukraine approved the Strategy for Small and Medium Size Entrepreneurship Development till 2020. Strategy implementation will support strengthening of comprehensive approach to state policy formation and implementation in this sector, and will also facilitate creation of favorable conditions for development of competitive small and medium-size enterprises.

The strategy incorporates principles of European Charter for Small Enterprises and Recommendations of SME Policy Index.It envisages formation of favorable environment for SME development, easing SME access to funding, simplification of tax administration for SMEs, promoting SME activities and development of training in entrepreneurship skills, SME export promotion, and strengthening of SME innovation capacity.

The strategy envisages improved environmental performance by SMEs. The implementation of tools for supporting small and medium-sized businesses will be strengthened to promote compliance with environmental legislation, including the implementation of sustainable consumption and production models, green practices of business, and the introduction of environmental management systems, environmental certification and environmental labeling in accordance with the requirements of international standards ISO.

Companies respond to financial and market stimuli. However, the normal policy and financing tools cannot be relied on to achieve a greener SME sector:

- The poor public sector fiscal environment constrains the ability of government to pursue these objectives. Programs that are potentially available are insufficiently funded or not specifically targeted at green SME performance.⁴⁰
- Financing from private sector financial institutions carries an interest rate of over 15% and high levels of loan default make many institutions reluctant to lend to SMEs. Thus, the ability of SMEs to borrow money to finance the implementation of greener technologies is limited.

It is therefore necessary to create conditions that enable a transition by SMEs to a greener performance. Table 2 identifies key issues that are faced by SMEs in Ukraine, and the measures that are available to enable change. The measures that are identified may be grouped as follows:

- Tax incentives
- Preferential loans
- Grants and consultancy services
- Supply chain management and green public procurement.

Relevant programs include: Ukrainian Fund for Entrepreneurship Support; State Farmers' Support Fund of Ukrainian State Innovations

CHALLENGES AND TOOLS OF ECONOMIC POLICY⁴¹

CHALLENGES

MEASURES TO ENABLE CHANGE

The complexity of the regulatory requirements for SMEs and the imperfection of regulatory incentives for going beyond simple compliance and full adoption of the environmentally targeted principles of operation

entities: Regulatory incentives for certification of the natural resources management

General mandatory rules (instead of individual permits) for low risk economic

Absence of the recommendations and instructions regarding opportunities for greener SME operations

system (including according to the simplified procedure): decreasing the frequency of inspections, decreasing the monetary penalties, etc.; Sectoral approach to ensuring compliance (development of the sectoral strategies, inspection campaigns, partnership relations with the trade associations).

Lack of recognition of the value activities on the part of SMEs and absence of the demand for Dissemination of recommendations regarding compliance with the requirements and best practice through Internet;

Direct strengthening of the identification of opportunities for greener operations (e.g., audits etc.).

of the environmentally oriented "green" products and services

Simplified natural resources management systems;

Sectoral environmental certification;

Eco-labeling of the products;

Environmental rewards;

"Green" public procurement.

Lack of funds for SME "green" investments

Tax incentives (accelerated depreciation, reduced tax rate of property or corporate tax);

Credits on favourable terms;

Subsidies (grants) for advisory services.

Table 2.

Tax incentives

In many OECD countries, SMEs that invest in reducing environmental impacts receive partial tax exemptions. Depending on the country and the type of investment, this may include some or all of accelerated depreciation of capital cost and/ or reductions in property and corporate tax. Reduced tax rates and tax incentives also can be differentiated depending on the real environmental effect of these capital investments.

Tax incentives may be supplemented with taxation of negative environmental impacts; waste and wastewater may be taxed, for example. These types of tax provide both a disincentive for less desirable behaviour (e.g., generating waste) and an incentive for environmentally-preferred behaviour (e.g., establishing programs to recycle waste). Taxes of this kind are effective only when real emissions/discharges are measured at source of emission/discharge.

Preferential loans

State financial institutions can offer loans at preferential terms for SMEs that undertake environmental investments. These loans, as a rule, are subject to implementation of the planned measures and may require the application of the best accessible technical methods and/or the best practice of environmental management. Application for such loans should be approved by the environmental body.

In Ukraine, there are no state financial institutions providing targeted preferential loans for SME environmental investments. Instead, the main source of the long-term funding of the environmental investments are the credit lines provided by the international financial institutions and distributed through local commercial banks. Local banks provide sub-loans to the clients in the private sector, including SMEs. These credit lines ease access to more long-term funding and ease the process of obtaining loans. This does not mean that these loans are cheaper than standard loans, but

SME economic policy index: Eastern Partner Countries 2016 - Assessing the Implementation of the Small Business Act for Europe. Paris: OECD, 2016 - p. 212.

typically a loan also provides advisory services and training at no additional cost which: (i) reduces risks to local banks; and (ii) results in more effective investments.

Important factors of the successful implementation of preferential loans program for the environmental investments are:

- early definition of the environmental objectives of each project;
- including environmental requirements to the loan agreement, clearly defining environmental measures, that must be fulfilled, and relevant monitoring procedures;
- Accurate monitoring and evaluation of using the funds and the progress in achieving environmental objectives by the credit institution.



ENVIRONMENTAL LOAN PROGRAMS IN UKRAINE

- EC program "Eastern Partnership Countries GREEN" (EaP GREEN) is implemented by the OECD, EEC UN, UNEP, and UNIDO for the greening of SMEs and the Strategic Environmental Assessment.
- Eastern Europe Energy Efficiency and Environment Partnership Fund (EUR 150 million) is managed by the EBRD for facilitating investments in energy efficiency.
- Ukraine Energy Efficiency Program (UKEEP) is an EBRD credit line worth of EUR 150 million. It supports
 the projects on energy efficiency and creation of the renewable energy sources through Ukrainian banks
 (Ukreximbank, Forum, OTP Bank).
- "Ukraine Sustainable Energy Lending Facility" (USELF) is an investment program (up to EUR 50 million) implemented by EBRD for supporting projects using renewable energy sources in Ukraine.

Grants and free of charge consultancy services

Various mechanisms are implemented in different countries to provide technical assistance to SMEs in support of environmental actions. In some cases, these take the form of grants to SMEs for hiring the required technical assistance. In other cases, a pool of money is created that can be used by professional organizations or industry associations to supply technical assistance. SMEs may be suspicious of technical assistance that has no cost to them because they may consider that this implies a low quality of assistance.

Supply chains management

SMEs that are part of a supply chain may be pressured by their customers to meet general or specific environmental performance criteria. Frequently, this is because the customer must, in turn, be able to demonstrate a high level of environmental performance to its customers. For example, to be successful, a supplier of goods to the public may need to demonstrate that all parts of its supply chain meet a high level of environmental performance. In some cases, environmental regulatory or liability issues may drive a high level of environmental performance within the supply chain. For example, the supply of electronics equipment may need to meet specific environmental criteria regarding the chemicals that are used to manufacture the equipment. These pressures may force a change on an SME that it would not otherwise undertake.

Green procurement

"Green" procurement by public or private sector entities can play an important role in creating demand for "green" products and services, and in support of markets with insufficient demand for green products or services. "Green" procurement can also one of the main driving forces of innovations, stimulating industry to produce "green" products and services, especially in such sectors where procurement takes big share of the market (for example, in construction, health care, public transport).

"Green" procurement requires bidders to demonstrate compliance with defined environmental standards throughout the supply chain. Exclusion criteria can be applied so that only enterprises that are certified in accordance with the environmental standards are allowed to participate in a tender. Alternatively, the environmental performance of a product or a service can be included in the evaluation of products and services that are submitted in a bidding process.

"Green" procurement rules may also specify that certain goods must contain a minimum level of the recycled materials or that the production of these products must reach a defined level of energy efficiency, or that goods or services must bear an eco-label that certifies a minimum level of environmental performance. "Green" procurement is often applied to the procurement of energy efficient computers and equipment, environmental construction, recycled paper, and power generation from the renewable energy sources. In South Korea, public procurement of environmental products and services has facilitated a guick growth of green products.

The effectiveness of green procurement depends on the ability of procurement agencies and officers to manage the process effectively. Training is therefore required to ensure that an effective green procurement strategy can be properly implemented.



USE OF GOVERNMENT PROCUREMENT TO CREATE NEW ENVIRONMENTALLY-SUPERIOR PRODUCTS

In 1993, the Government of Sweden issued a tender that specified windows that were 60% more energy efficient than commercially available windows. Companies responded by creating new windows to meet this requirement. Since that time, governments in Europe and North America have used their procurement needs to drive the development of environmentally-superior products that are cost-effective in the local economy.

Source: Bradbrook, A.J. et al, L., The Law of Energy for Sustainable Development, IUCN Academy of Environmental Law Research Studies, Cambridge University Press, New York, 2005

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Glossary

Brownfield (or free industrial area) – industrial land plot that is not used as intended, but has industrial infrastructure facilities (buildings, constructions, utility lines etc.) and can be reused for industrial purposes. These plots are often located at sites, which were industrial centers but lost their position for a number of reasons.

Business incubator – company that provides specially equipped premises and other assets for small and medium-sized start-ups on specific terms and for a certain period of time, in order for them to gain financial sustainability. The most important business incubator services are: 1) rent of office space/workshops, often (in some cities/centers) at below market price and flexible conditions for additional space upon request; 2) administrative and technical services (phone line, copying services, conference rooms, secretary services, etc.); 3) consulting/business planning for start-ups and potential entrepreneurs. It is also possible to receive a wide range of other (consultancy) services, transfer of technologies, seminars, training, etc.

Circular economy – economy where the value of products and materials is preserved as long as possible; use of resources and waste generation are minimized; resources are preserved in the end of the product life cycle in order to be re-used for the creation of further value. This is a common name of the activity aimed at energy saving, regenerative green production, and consumption.

Cluster – sectoral, territorial and free association of the business structures closely co-operating with research and educational institutions, civil society organizations and local authorities with the aim of increasing competitiveness of their own products and facilitation of economic development of the region.

Environmental components – aspects of the environment important because of their environmental, scientific, resource, social and economic, cultural, aesthetic and spiritual value.

Environmental impact – any environmental consequences (positive or negative), including for public health, flora, fauna, biodiversity, soil, climate, atmosphere, water, landscape, natural objects, physical assets, cultural heritage (and interaction of these factors).

Environmental products – products of environmental activities and other specific products used in intermediate consumption or formation of fixed capital stock for environmental activity.

Environmental services – specialized types of services aimed at prevention of negative environmental impact and support of natural resources conservation. These services include, among others: fulfilment of orders for green products production; development of green technologies and equipment; manufacture, installation and maintenance of environmental facilities; services on environmental modernization of production; waste recycling, transportation and disposal, removal of toxic waste; water reclamation and treatment of discharged waters; soil reclamation; maintenance of environmental protection equipment; environmental audit and assessment; environmental insurance and credits; licensing of environmental activities; environmental education and promotion, and information, research, consultancy, finance and credit, advertising, educational and other services.

Good governance – managerial activities in the system of public and government relations which comply with the requirements of open, democratic, and fair society and regulate relations between the state authorities and business and public without favour.

Governance – development and implementation of public policy based on partnership of government and local authorities which create favorable political, legal, and financial preconditions, with private sector, which generates jobs and incomes, and civil society, and mobilizes internal resources for achieving priority social development objectives.

Green business – business complying with the principles of environmental sustainability in its activities, using renewable resources, and/or trying to minimize the negative impact of its activities on the environment.

Mitigation – liquidation, reduction, and/or control of environmental impacts of the strategy, plan, program, or project, including compensation for any damage inflicted on the environment in the result of implementation of such initiatives.

Public administration – activity of state (public authorities) to manage public affairs.

Stakeholders – groups of persons interested in, involved in, or influenced by policy or plan of the government, community, or an enterprise. This term covers the groups, organizations (formal and informal, state and public), and persons having important roles in the process of regional development and management.

Sustainability - characteristic of a process or condition that can be sustained at a certain level endlessly. Environmental sustainability is related to potential longevity of systems that support human life and activities, such as planetary climate system, agricultural systems, industry, forestry and fishery, human communities in general, and different other systems on which they depend.

Sustainable development – development which meets the needs of current generations without compromising the ability of future generations to meet their own needs (Brundtland Commission definition);

Value chain – set of measures which a company implements to supply its product or service to the market. Value chain covers all types of activities of an enterprise. In the traditional business model, these are the following types of activities: development, marketing, sale and follow up, by the company, of its products.



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