

GREEN DEVELOPMENT OF SMALL AND MEDIUM ENTERPRISES OF UKRAINE: THE EU EXPERIENCE

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Abstract

The paper deals with the analysis of the EU and Ukraine experiences to support the small and medium enterprises' green development. The authors analyzed the main preconditions to transform the Ukrainian small and medium enterprises from the traditional type of development to green. The ongoing trend of green activities among small and medium enterprises in Ukraine was analyzed and summarized by the authors. The results of the analysis showed, that in spite of the fact that the impact of the small and medium enterprises on economic development could be inconspicuous, pieced together they are the significant majority of Ukrainian enterprises, thus, their cumulative impacts on the environment are quite significant. Moreover, as shown by the international experience, the reduction of the negative influence of small and medium enterprises on the environment in the process of good and services produced is the main success factor in the field of the country's green development. In the article, the authors allocated the contemporary deterrents which restrict the country's green development. The authors analyzed and summarized the main economic instruments to support the small and medium enterprises green development. On the base of the EU experience the incentives instruments of green development for Ukrainian small and medium enterprises were proposed by the authors.

Keywords: *damage, index, ecology, environment, health, policy, pollution, social, sustainable development.*

JEL Classifications: L2, Q0, Q5.

INTRODUCTION

The current dynamic development of the economy is provided with scaling-up of the number negative ecologically consequences for environmental: increasing of CO₂ emission; global warming, exhausting of natural resources and etc. From the other side the snowballing effect of science and technic development provide the satisfaction to human's need through solving the economic, ecological and social problems. Thus, the authors in the paper (Pimonenko et al., 2018) investigated the relationship between Environmental performance index and economic welfare of the country. They made a conclusion, that country with a high position on Environmental performance index had the better level of economic development.

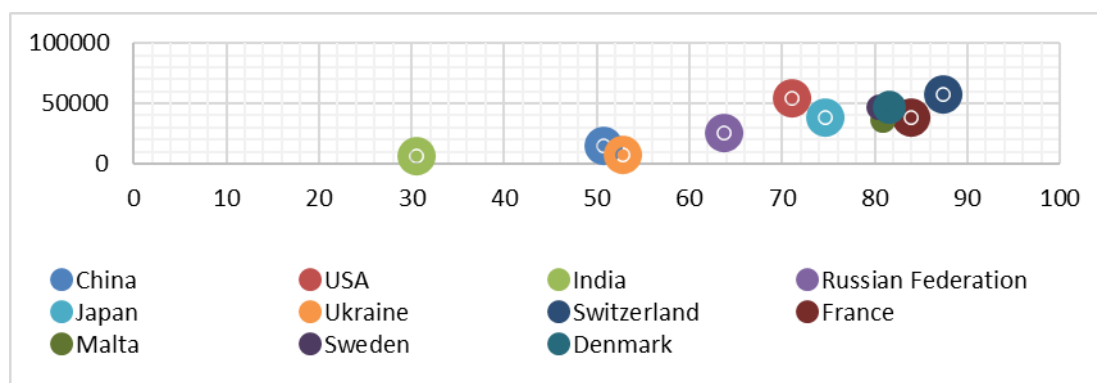


Figure 1 Comparison analysis of GDP per capita and EPI score by countries*
Recourses: Pimonenko et al., 2018

Environmental performance index was developed by the team of researchers and policy experts at the Yale Centre for Environmental Law and Policy (Yale University) and Columbia University’s Centre for International Earth Science Information Network (CIRESIN) in collaboration with the World Economic Forum (Esty et al., 2006). From 2006 the methodology of the index has been improving according to the new trends and Sustainable Development Goals. According to the official methodology of Environmental Performance Index (Environmental, 2018), it estimates two main parts: environmental health, which rises with economic growth and prosperity; ecosystem vitality, which comes under strain from industrialization and urbanization. It should be underlined that experts of this index supposed that good governance emerges as the critical factor required to balance these distinct dimensions of sustainability (Environmental, 2018; Pimonenko et al., 2018).

Thus, according to the databases the following countries such as China, the USA, India, Russian Federation and Japan occupied the first five places in CO₂ emissions in the world (table 1). In such direction, Ukraine occupied the 26th place of CO₂ emission in the world.

Table 1. CO₂ emissions and share of the world GDP by the country*

Countries	GDP, bln \$	% GDP in the world	CO ₂ , kton (Gg) per year	% CO ₂ in the world	CO ₂ per 1\$ of GDP
China	11007.72	14.84%	10641788.99	29.51%	1034.39
USA	18036.65	24.32%	5172337.73	14.34%	3487.14
India	2095.40	2.83%	2454968.12	6.81%	853.53
Russian Federation	1331.21	1.80%	1760895.31	4.88%	755.98
Japan	4383.08	5.91%	1252889.87	3.47%	3498.37
Germany	3363.45	4.54%	777905.50	2.16%	4323.72
Iran	-	-	633749.58	1.76%	-
Republic of Korea	1377.87	1.86%	617284.88	1.71%	2232.15
Canada	1550.54	2.09%	555400.90	1.54%	2791.74
United Kingdom	2858.00	3.85%	398524.37	1.11%	7171.46
Turkey	717.88	0.97%	357157.41	0.99%	2009.98
Italy	1821.50	2.46%	352885.93	0.98%	5161.72
France	2418.84	3.26%	327787.26	0.91%	7379.28
Poland	477.07	0.64%	294879.37	0.82%	1617.84
Ukraine	90.62	0.12%	228688.17	0.63%	396.24
Lithuania	41.17	0.06%	12478.11	0.03%	3299.44
World	74152.48		36061709.91		2056.27

*Created by the authors on the basis (World Development, 2017; CO₂ time, 2017; Pimonenko et al., 2018)

Thus, China generates only 14.84% of the world GDP, but it produces 29.51% of CO2 emission in the world. The same situation in India and the Russian Federation. Their CO2 emission in percentage is twice higher than their share of GDP in the world. Unfortunately, the same situation we can see in Ukraine. Although, the situation in Lithuania is vice versa. Their CO2 emissions are twice less than share in the world GDP. It is necessary to underline that in the USA and in the most EU countries the share of world GDP is higher than the share of the world CO2 emission.

According to the official data of EPI (2018) Switzerland, France, Denmark, Malta and Sweden round out the top five countries (Environmental, 2018). The leader in the world was Switzerland with a score of EPI (2018) 87.42 in overall environmental performance. From the other side, Switzerland has the weak side on Sustainable nitrogen management, Terrestrial biome protection – national and global weights. Accordingly, France – 83.95, Denmark – 81.60, Malta – 80.9 and Sweden – 80.51 (Environmental, 2018). Noticed, that first places were occupied by the EU countries. Ukraine occupied the 109th place with score of 52.87. The dynamic of EPI for China, USA, India, Russian Federation, Japan and Ukraine is presented in table 2.

Table 2. The dynamic of EPI*

Countries	EPI 2018		EPI 2016		EPI 2014	
	Rank	Score	Rank	Score	Rank	Score
China	120	50,74	109	65,1	118	43
USA	27	71,19	26	84,72	33	67,52
India	177	30,57	141	53,58	155	31,23
Russian Federation	52	63,79	32	83,52	73	53,45
Japan	20	74,69	39	80,59	26	72,35
Ukraine	109	52,87	44	79,69	95	49,01

*Created by the authors on the basis (Environmental, 2018; Global, 2016; EPI, 2014; Pimonenko et al., 2015)

In the previous research (Pimonenko et al., 2018) authors showed that EPI results close to the SDG Index calculation. Moreover, Ukraine has a better position on EPI than the countries–world CO2 polluters (table 3).

Table 3. Comparison analysis of EPI, SDG index and GDP per capita*

	Countries	EPI score	GDP per capita, \$/person	SDG Index score
Top CO2 emissions	China	50,74	14399,0	67,1
	USA	71,19	53341,8	72,4
	India	30,57	6092,65	58,1
	Russia	63,79	24811,1	69,9
	Japan	74,69	38252,3	80,2
	Ukraine	52,87	7270,69	72,7
Top five leader on EPI	Switzerland	87,42	57430,0	81,2
	France	83,95	38058,90	80,3
	Malta	80,90	35743,4	77,0
	Sweden	80,51	46662,1	85,6
	Denmark	81,60	45966,2	84,2

*Created by the authors on the basis (Environmental, 2018; SDG, 2018; Pimonenko et al., 2018)

Besides, a huge number of scientist research the issue of indicating the balance between economic development and negative ecological consequences. One of the ways to solve abovementioned problems is to develop and implement the concept of green development at all levels (from national to local) and in all economic sectors.

Results

It should be underlined, that EU countries have already started to support the transformation from traditional to green development. Thus, green and sustainable development has already accepted at the national level as the basic goals for future development. Besides, green development is the most important part of international cooperation. However, transformation to the green development contributes to solving gaps between economic growth, degradation of environmental, exhausting of natural resources and without the increase of the social issues. Noticed, that green development contributes the additional financial resources which allow decreasing the negative impact on environment through improving green technology, green goods and services and as a consequence lead to the economic growth, increasing the social welfare and creation benefits to all stakeholders (Eap, 2017).

The results of the analysis showed that the main indicator of Ukrainian economic development showed that small and medium enterprises (SME) made the significant impact on economic growth. Thus, the share on SMEs in the GPD has been increased from year to year. Moreover, the SMEs has already become the powerful forces of the national economy as in the EU countries (figure 2). It should be noticed, that in Ukraine the same classification of enterprises as in EU. The comparison of the main economics classification parameters of SMEs in Ukraine and EU are presented at table 4.

Table 4. The main factors of SMEs

Company category	Staff headcount	Turnover
Medium-sized	< 250	≤ € 50 m
Small	< 50	≤ € 10 m
Micro	< 10	≤ € 2 m

Source: Compiled by the authors on the basis of the literature sources (Commission, 2013)

The sales volume of products and services also has been increasing since the 2012 year. Thus, in 2015 it increases by 45% compared to the 2014 year. If we compare 2013 and 2014 we notice that increasing is only by 1.7%. It can be explained, that Ukrainian business sector has started to adopt for new conditions after EU integration process has been implemented.

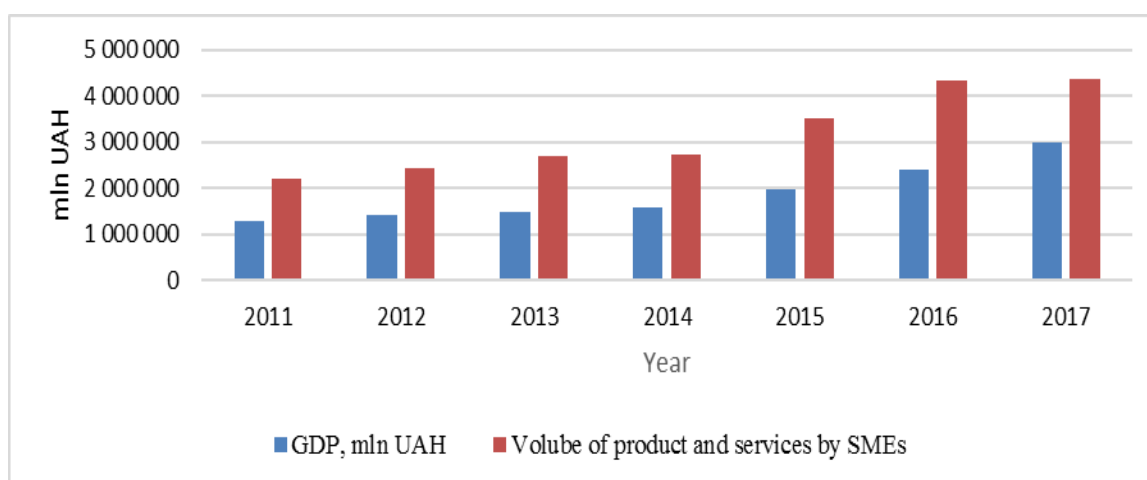


Figure 2. The share of SME in GDP in Ukraine (2011-2017)

In the Ukraine business sector employed approximately 2,3 million persons or 27.9% (State, 2016).. Unfortunately, it is less in two times compare with EU. Besides, the sales volume of products and services is 397.5 million UAH. The main indicators of SME are presented in table 5.

Table 5. The main indicators of SME in Ukraine

Parameters	Total	Medium	Small	Micro
Quantity of enterprises	1630878	307	3982	1626589
Persons employed, thousands	2290,3	28,0	75,1	2187,2
Sales volume of products and services, million, UAH	397473,3	15612,0	23585,5	358275,8

Source: Compiled by the authors on the basis of the literature sources (State, 2016)

It should be stressed, that as in EU in Ukraine micro enterprises is the basis of SME. Thus, micro enterprises employ more the 2 million persons and sale more than 90% in total volume of products and services of SME. Moreover, if we analyse the dynamics of SME development we can see that all main indicators the main indicators are increasing from year to year. For an example, in 2015 the quantity of enterprises is increasing by 2% compared with the 2014 year (figure 3).

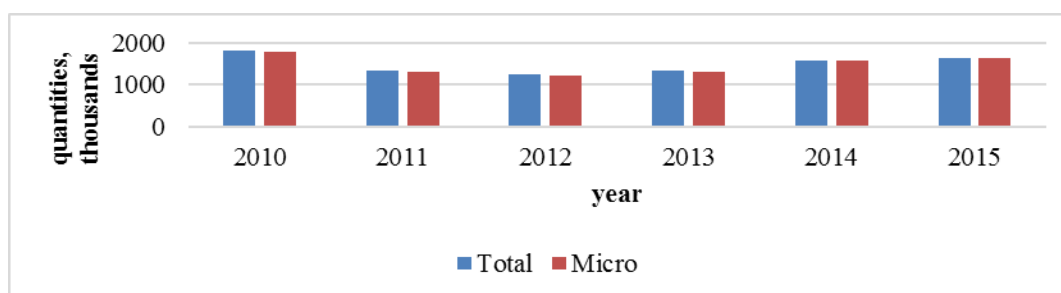


Figure 3 Dynamic of enterprises' quantity 2010-2015

Source: Compiled by the authors on the basis of the literature sources (State, 2016)

Unfortunately, in Ukraine the statistics of green business hasn't been collected at the national level yet. Firstly, Ukraine doesn't have the official system for collecting such information. Secondly, the classification system of business activity is not perfect and make some issues for that. From the other side, Ukraine has the huge potential to develop the green business among SMEs as a key element of the national economy with the purpose to achieve green growth.

Ukraine has started the European Union integration process. Thus, according to Action Plan Ukraine should make some improvements in the energy sectors, green technologies with the purpose to synchronize with the green model of EU development. According to the Strategy of Sustainable development "Ukraine – 2030" the range of tasks should be solved at the national level, as follows:

- 1) gradual adaptation of the Ukrainian legislation with the EU directives in accordance with the Agreement on the EU Association (Chapter 6 "Environment");
- 2) implementation of the procedures for assessing the impact of plans and programs on the environment in accordance with the Directives 2011/92 / EU and 2001/42 / EC;
- 3) implementation of five-levels waste hierarchy in accordance with Directive 2008/98 / EC on waste and preparation of waste management plans;
- 4) an increase in the share of solid household waste utilization, their maximum re-introduction into circulation as secondary resources;
- 5) implementation of the "polluter pays" principle and increased producer responsibility, particularly in the field of packaging;
- 6) reform of the pricing system and tariff formation for energy and fuel, revision of the mechanism for forming the energy resources balance, rejection of cross-subsidization;
- 7) developing of a state mechanism to support the energy efficiency measures in the households and the budget sphere.

Green developing of SMEs and implementing of abovementioned goals lead to:

- creation of less resource-intensive sectors of the economy, new markets and jobs;
- introduction of modern energy-efficient technologies, innovative activity among SMEs;

- increasing productivity and SMEs competitiveness through efficient use of energy, resources and minimizing waste volumes.

It should be highlighted that EU has already developed the supporting strategy for SME with the purpose to enhance the green business activity. EU strategy “Europe–2020: the strategy of smart, sustainable and inclusive growth” indicated the goal – to achieve smart, sustainable and inclusive economy. Under this strategy EU developed and implemented the Green Action Plan for SMEs with the purpose to support them in the transformation process to the green business model (table 6).

Table 6. Supporting activities for SMEs green development from the EU

Goal	Specific actions include:
Focused on increasing the efficiency of the use of SME resources.	<ul style="list-style-type: none"> • providing information among SMEs on how to increase the efficiency of resource use (materials and energy); • promoting the transfer of green technologies between SMEs; • facilitating the access of SMEs to financing.
Supports green business	<ul style="list-style-type: none"> • developing eco-innovation for SMEs; • promoting the establishment of partnerships between business representatives, developing skills and knowledge on green business; • the using business clusters in support of eco-innovative SMEs.
Uses opportunities for a greener value chain	<ul style="list-style-type: none"> • the creation of business models of SME services and the recycling; • cross-sectoral co-operation for the purpose of developing a circular economy.
Facilitates access to the market for green SMEs.	<ul style="list-style-type: none"> • supporting the green European internal market by incorporating the specific objectives of the circular economy into the technical standards of the EU; • promoting access to international markets for green enterprises; • promoting the introduction of effective resource use technologies in partner countries through cooperation with European SMEs.

Compiled by the authors on the basis (Marushevskiy and Kucherenko, 2017)

The results of analyzing showed that the process of implementing the sustainable business practices and the use of green opportunities, SMEs often face a number of difficulties (Table 7) that impede the implementation of green development of SMEs, including: the diversity and complexity of SMEs; high initial costs; shortage of skilled personnel and professional knowledge; low level of awareness about the existing financially attractive opportunities for improving the environmental performance of SMEs and on environmental regulatory acts; the limited resource potential of SMEs, which contributes to the choice of development strategy with minimal risk and less investment in new technologies; mistrust of environmental regulators.

Table 7. The internal barriers of SMEs’ green development

RESOURCES					
Lots of time to study environmental issues, finding support and the toolkit	Insufficient amount of resources allocated to solve environmental problems	Lack of investment in staff training due to high costs for SMEs	Lack of qualified staff who would deal with environmental issues		
ATTITUDE AND CORPORATE RESPONSIBILITY					
The stereotype that SMEs have little impact on the environment and do not cause environmental problems	The gap in the thoughts and actions: a positive attitude to the environment does not lead to the introduction of environmental measures	The stereotype that the environment is not relevant to green business: is not considered as one of the business areas	Scepticism about the potential reduction of costs and market benefits	Predominantly short-term planning of activities	The stereotype that environmental protection costs are rising rapidly, and the benefits from them are slow
LEVEL OF INFORMATION					
Low awareness of environmental legislation	Low awareness of the organizations that provide	Support and sources of information.			

Compiled by authors on the bases (Allowances, 2017)

In Ukraine, environmental authorities do not have complete data on the number of SMEs subject to environmental regulation and do not collect such information. At the same time, SMEs are a separate regulated community in view of the difficulties that it presents to environmental regulators. The regulatory regime in force in Ukraine does not require the issuance of complex permits covering all environmental constituents: separate permits are issued to companies for emissions into the air, wastewater discharges and the placement of solid waste. There is no proper differentiation between large pollutants and low-risk production.

The environmental authorities at the regional level have broad discretion in defining the regulated community. Therefore, for SMEs in a particular area, multiple requirements for obtaining permits may apply in one area, and in other areas, such requirements may simply not exist. SMEs often express dissatisfaction with being aware of the environmental requirements, especially – to understand what requirements apply directly to them – very difficult. It is difficult to find methodological guidelines and get advice that would explain to them what to do to comply with certain norms.

Information on environmental regulation is not sufficiently spread among the SMEs by the Government of Ukraine. The website of the Ministry of Ecology and Natural Resources is the main official source of information on environmental norms, but it is unsuccessfully organized and not widely used by all SMEs. The ministry occasionally holds press conferences and publishes press releases on a specific environmental issue, but not in order to promote compliance with environmental requirements and the implementation of best practices.

As the EU experience shows, the state's compliance with the requirements reduces the costs of enterprises to comply with them, enabling them to comply with such requirements as much as possible and to continue to adhere to them. This can reduce the costs of regulators to monitor compliance by improving the effectiveness and efficiency of this control and enforcement. Promoting compliance is particularly effective when targeted at SMEs, which are primarily due to ignorance and lack of capacity, as well as to SMEs, among which the most widely used culture of resistance to law enforcement.

Thus, state support for SMEs in Ukraine is very heterogeneous. Mostly, the government plays a passive role in advancing the principle of environmental sustainability and examples of best practice. In addition, as a rule, state involvement is reduced to the fact that it acts as the host of projects funded by international donors.

Consequently, due to lack of incentives from the government, in most cases, SMEs are taking environmental measures or are planning to do so in the future in order to save energy, water or raw materials. SMEs feel and expect a further increase in resource prices. So, the smaller the business, the more it feels a change in resource prices. The ecological consciousness, which makes resource efficiency a priority for the company, is also a significant factor, especially among SMEs.

The results of the analysis of the best practices to support green development among SMEs showed that the most effective in Ukraine would be:

1. Regulatory instruments: simplification of regulatory requirements for SMEs through the introduction of standardized permits or mandatory general rules, as well as other regulatory practices; establishment of normative incentives for the implementation of environmental management systems; advancement towards sectoral compliance strategies;
2. Information methods: direct counselling for companies or widespread use of methodological guides on compliance and best practices in printed and, to a greater extent, electronic form; the introduction of sectoral certificates, environmental labelling and various awards for the achievements in the field of environmental protection;
3. Economic incentives: grants, concessional loans and tax incentives for SMEs willing to invest in environmental technologies; encouraging large companies to put pressure on SMEs throughout the supply chain and implementing this approach through the introduction of environmental requirements for the public procurement process.

Table 8. The barriers and economic instruments to overcome them

Barriers	Economics instruments
The complexity of regulatory requirements for SMEs and the lack of regulatory incentives to go beyond the simple requirements of compliance and the full adoption of environmentally-oriented principles of business	<ul style="list-style-type: none"> – General mandatory rules (instead of individual permits) for objects with low environmental risk. – Regulatory incentives for certification of environmental management systems (including in a simplified manner): reduction of frequency inspections, reduction of monetary penalties, etc. – A sectoral approach to ensuring compliance with requirements (development of sectoral strategies, inspection campaigns, partnerships with trade associations).
Lack of recommendations and guidance on the SMEs' green development	<ul style="list-style-type: none"> – Establishment of a "Regulatory Guard" service. – Distributing recommendations for compliance and best practices through the Internet. – Direct Capacity Building (Audit, etc.).
Lack of recognition of the value of green development by SMEs and the lack of demand for green products and services	<ul style="list-style-type: none"> – Simplified environmental management systems. – Sectoral environmental certification. – Ecological labelling of products. – Environmental awards. – "Green" government procurement.
Lack of funds to implement "green" SME investments	<ul style="list-style-type: none"> – Tax privileges (accelerated depreciation, reduced tax rate (property or corporate). – Loans on preferential terms. – Subsidies (grants) for advisory services.

Compiled by the authors on the basis (Textbook, 2017)

Thus, it is necessary to develop and implement the supportive mechanism for SMEs of transformation to the green development model. The results of analysis allow summarizing the barriers and economic instruments to overcome them (table 8): tax privileges; preferential crediting; grants and consultancy services; management of supply chains and 'green' government procurement.

Therefore, For SMEs, additional tools should be developed to promote compliance with environmental legislation, the introduction of sustainable production and consumption patterns and green practices of business, including the implementation of environmental management systems in accordance with the international standard ISO 14001, environmental certification (for production processes) and environmental labeling (for goods and services), including information tools (providing advice and guidance to SMEs on the implementation of sustainable production models and coming to life and etc.

CONCLUSION

In general, green business is created to meet the needs of the community in products and services that have less impact on the environment and improve its status. The ideas of green business development are based on community awareness of the importance of environmental issues, which, on its part, creates a demand for environmentally friendly products and services.

Considering that the level of awareness of the importance of environmental issues has been increasing with time, the demand for environmentally friendly products and services also grows along with opportunities for entrepreneurship development. Thus, two important conclusions can be made regarding the development of green business:

1. The demand for completely new - environmentally friendly products and services that will replace old, less environmentally friendly products and services will increase. Examples include, in particular, the use of renewable sources for replacing the energy produced by thermal power plants, as well as the demand for recycling systems to replace waste utilization.

2. Business owners will increasingly understand that they have to show consumers the focus on green safe activities if they want to maintain and expand their customer base. Currently, companies mostly prefer to position themselves as "environmentally friendly" organizations.

These factors mean that opportunities and growth in the green business sector will be higher than the growth rates of the economy as a whole. It should be noted that the potential for the development of green business in Ukraine is, first of all, in the sectors of renewable energy, energy efficiency and organic agriculture.

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