



Policy paper

# **MAPPING OF STRATEGIC TARGETS OF UKRAINE AND THE EU IN THE CONTEXT OF THE EUROPEAN GREEN DEAL: DEVELOPMENT VECTORS AND FLAGSHIP INITIATIVES**

April 2021

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Policy paper “Mapping of strategic targets of Ukraine and the EU in the context of the European Green Deal: development vectors and flagship initiatives” reflects the results and conclusions of the mapping of the strategic targets of Ukraine and the EU in the context of the European Green Deal. European Green Deal is an action program of the European Commission for the transition to climate-neutral Europe till 2050.

The policy paper analyses sectoral components of the European Green Deal (climate change, energy and energy efficiency, green agriculture, industrial policy, transport, zero pollution, biodiversity, financing the green transition) by comparing sectoral target indicators and policy goals in Ukraine and the EU. For each sector several flagship initiatives are proposed, which can be implemented to help to achieve the goals of the European Green Deal, to synchronise policies and legislation, as well as to implement specific practical initiatives.

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*Design by: Taras Mosiyenko  
Illustrations by: Stefan Gerrits*

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# EXECUTIVE SUMMARY

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## I. ABOUT THIS MAPPING

Policy paper “Mapping of strategic targets of Ukraine and the EU in the context of the European Green Deal: development vectors and flagship initiatives” reflects the results and conclusions of the mapping of the strategic targets of Ukraine and the EU in the context of the European Green Deal. European Green Deal is an action program of the European Commission for the transition to climate-neutral Europe till 2050.

The policy paper analyses sectoral components of the European Green Deal (climate change, energy and energy efficiency, green agriculture, industrial policy, transport, zero pollution, biodiversity, financing the green transition) by comparing sectoral target indicators and policy goals in Ukraine and the EU. For each sector several flagship initiatives are proposed, which can be implemented to help to achieve the goals of the European Green Deal, to synchronize policies and legislation, as well as to implement specific practical initiatives.

The list of flagship initiatives can be useful in the process of bilateral dialogue between Ukraine and the EU on setting the priorities for cooperation within the European Green Deal.

This policy paper was prepared within the framework of the project «European Green Deal for Ukraine: from strategies to practical actions” with the support of the European Union and the International Renaissance Foundation within the framework of the EU4USociety project.

## II. MAIN CONCLUSIONS

**The European Green Deal creates a wide space for mutually beneficial synchronization of Ukraine’s policy and legislation with relevant EU policies and legislation, as well as cooperation between Ukraine and the EU in key areas of the EGD.** Measurable indicators form a strong evidence base for comparing the vectors of development of Ukraine and the EU on the way to achieving specific goals of the EGD. The key changes envisaged by the EU policy documents implementing and enforcing EGD in most sectors are fully or partially reflected in Ukraine’s strategic documents (government program, action plans, strategies, etc.).

It is possible to identify potential flagship initiatives in all sectors, despite the different results of the comparative analysis of current progress, development vectors, and political agendas in different sectors of the EGD. **These initiatives may form the kernel of the future roadmap for EGD between Ukraine and the EU** and serve as pilot cooperation initiatives or strengthen existing cooperation, in particular in the context of the implementation of the EU-Ukraine Association Agreement.

### III. FLAGSHIP INITIATIVES

We identified the following viable flagship initiatives in relevant EGD areas:

#### I. Climate change



- **“Climate-neutral communities”** – creating conditions for the transformation of cities and communities into climate-neutral in Ukraine.
- **“Climate awareness of the citizens of Ukraine”** – raising the climate awareness of the citizens of Ukraine and their involvement in the common climate policy in Europe through participation in the European Climate Pact.
- **“Climate governance architecture”** – such an initiative has already been announced following the results of the EU-Ukraine Association Council meeting in 2021.

#### II. Energy and energy efficiency



- **“Cooperation on “green” hydrogen and other renewable gases”** – aimed at production and storage of hydrogen in Ukraine, as well as the use of the existing gas transportation infrastructure for its supply.
- **“Ukrainian wave of renovations”** – aimed at improving the energy efficiency of buildings.
- **“RES at the local level”** – an initiative to stimulate the use of RES in heat and power supply systems and the transport sector in cities.
- **“Combating energy poverty”** – an initiative aimed at involving into discussion and definition of energy poverty criteria, data collection and analysis, overcoming the consequences, etc.
- **“Transformation of coal regions”** – the initiative may include the use of EU experience in the transformation of coal regions and concrete steps to transform them into investment-attractive areas.

#### III. Green agriculture



- **“Stimulating the development of climate-oriented agriculture”** (in particular, organic farming, low till technologies, etc.) – the initiative would help increase the ambition to increase the area of land under organic farming and use the unrealized potential of Ukraine.
- **“Sustainable consumption and healthy diets”** – the formation of sustainable and responsible consumption behavior of the population.

- **“Reducing food and food waste losses”** – the initiative would be useful for bringing Ukraine’s gaps in strategic planning to reduce food losses and food waste.
- **“Cooperation to digitalize the agriculture”** – the initiative could include several elements related to the implementation of digital solutions in agriculture.

#### IV. Industrial policy



- **“Circular industry and waste”** – the initiative would be useful for defining and implementing a new waste management system, implementing mechanisms to ensure the right to repair and increase the service life of goods.
- **“Stop greenwashing”** – the initiative would help increase the ambition to strengthen environmental requirements for goods, based on objective requirements and factors.
- **“Ukraine’s participation in the EU industrial ecosystems and green alliances”**, in particular through the European Cluster Collaboration Platform. The goal is to integrate Ukrainian industrial enterprises into European supply chains to ensure the strategic autonomy of key EU industries.

#### V. Zero pollution



- **“Sustainable chemicals”** – the initiative would help to implement a system of evaluation and labeling of chemicals, taking into account the requirements of REACH and CLP.
- **“Zero pollution in cities”** – development and implementation of plans to improve air quality in the cities in Ukraine, wastewater treatment and reduction of water pollution in cities, as well as the introduction of the appropriate monitoring system.
- **“Single European monitoring area”** – the initiative may provide for the creation of a comprehensive environmental monitoring system on a European basis, methodologically and technologically integrated (compatible) with the EU system.

#### VI. Transport



- **“Development of electric vehicles and infrastructure”** – a flagship initiative is necessary due to the increasing sales of electric vehicles in Ukraine.
- **“Clean cities”** – formation of sustainable mobility practices in cities and other settlements, introduction and use of transport and infrastructure with less carbon footprint.

- **“Smart mobility”** – the initiative would be useful for the introduction of both advanced technologies for vehicles and the digitalization of transport and traffic management.

## VII. Biodiversity



- **“NATURA 2000+”** – Ukraine’s accession to the European network of NATURA 2000 protected areas. The initiative would include steps to create an additional cluster for Ukrainian protected areas – NATURA 2000+.
- **“Conservation of biodiversity in cities”** – the initiative would aim at involving Ukrainian cities in the EU’s Greening Platform to share best practices and experiences.
- **“Support for the synergy of agricultural and environmental policies of Ukraine”** – support for Ukraine in returning degraded agricultural lands to natural ecosystems, the development of economic instruments to stimulate such transformations.

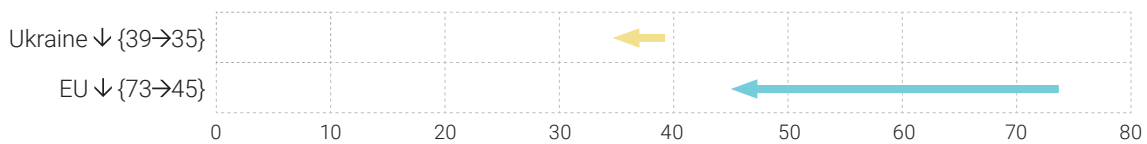
## VIII. Financing green transition



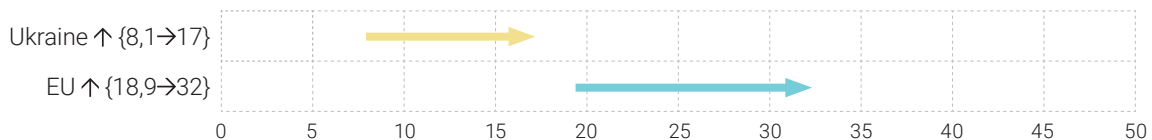
- **“Capacity building of Ukraine to finance the green transition”**. The initiative could address the following issues: transparent climate budgeting, carbon pricing, green investment, targeted green transition financing, climate-friendly procurement, and framing incentives for private green investment.

## IV. CONSOLIDATED TABLE OF THE EGD TARGET INDICATORS

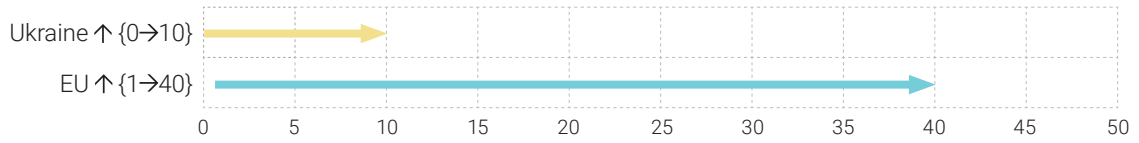
### Total GHG net emissions, % to 1990



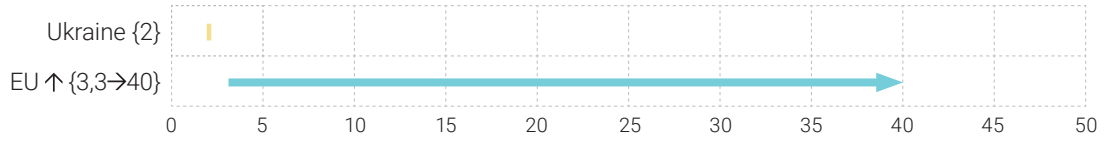
### Share of renewables in final energy consumption, %



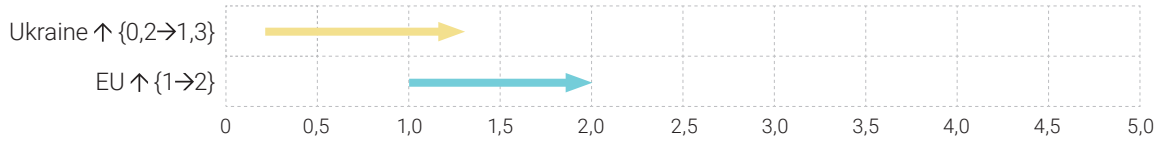
**Installed capacity of hydrogen electrolyzers, GWt**



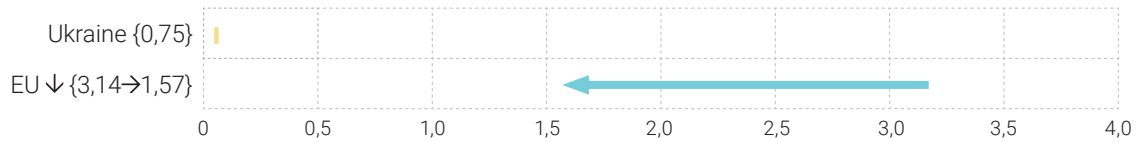
**Share of electricity in residential heating, %**



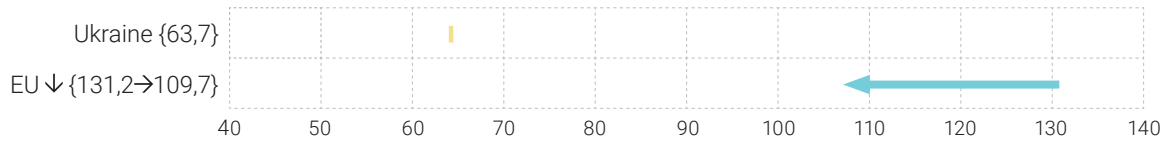
**Buildings energy renovation rate, % per year**



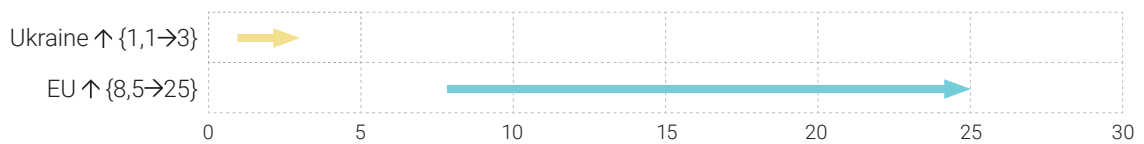
**Use of pesticides, kg/ha**



**Use of mineral fertilizers, kg/ha**

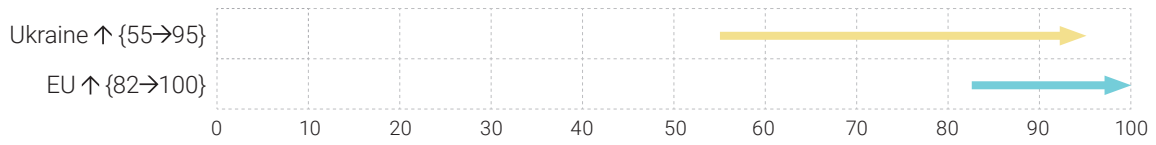


**Share of agricultural lands under organic production, %**

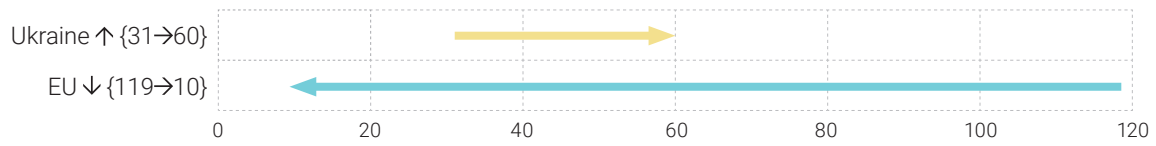




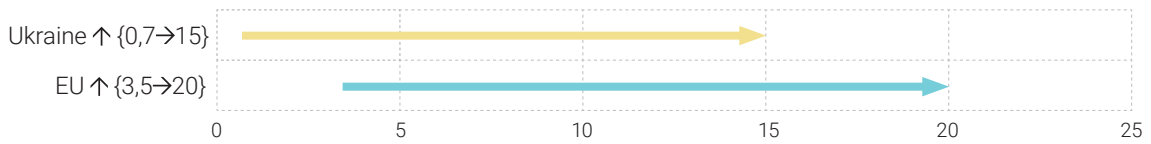
**Access to broadband Internet in rural areas, % of population**



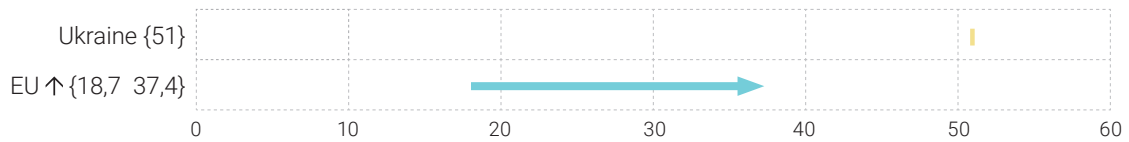
**GHG emissions in transport, % to 1990**



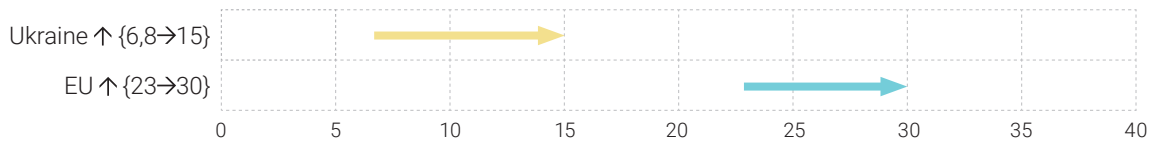
**Share of electrical cars in total sales, %**



**Share of railways in cargo transportation, %**



**Share of protected areas in total territory, %**



# INTRODUCTION

In December 2019, the European Commission adopted, and since then has been actively implementing, a policy aimed at “greening” all areas of public life – the European Green Deal (EGD). The main goal of the EGD is to achieve a climate-neutral Europe by the year 2050. In 2020 and early 2021, a number of documents were also adopted that are important for the implementation of EGD tasks, including the Biodiversity Strategy, a Farm to Fork Strategy, the Strategy on Adaptation to Climate Change, the Sustainable and Smart Mobility Strategy, the European Climate Pact, the EU Hydrogen Strategy, the EU Energy System Integration Strategy, etc.

Just as the EGD was put in motion, the Government of Ukraine declared its intention to join it. EGD issues are not only raised during official meetings between Ukraine and the EU, such as summits or Association Council meetings, but also mentioned in planning documents of the Government and individual ministries. Ukraine has also established an Interdepartmental Working Group to Coordinate Activities on Overcoming the Effects of Climate Change within the Framework of the Initiative of the European Commission “The European Green Deal.”

At the current stage, it is important to move from words to actions and work on specific mutually beneficial initiatives. Such initiatives should, on the one hand, help Ukraine synchronize its policies and legislation with the EGD objectives and so make use of the EGD opportunities to overcome the challenges, and on the other hand, en-

sure a possibility to implement concrete practical initiatives aimed at achieving the EGD targets.

The purpose of this policy paper is to compare the strategic goals and priorities of Ukrainian and EU policies in the EGD context and, based on its findings, suggest flagship initiatives that Ukraine and the EU could jointly implement to achieve the EGD goal and accelerate the green transition. The flagship initiatives could become a basis for developing an EGD Roadmap between Ukraine and the EU that would define directions of their cooperation as well as areas of policy and legislative synchronization.

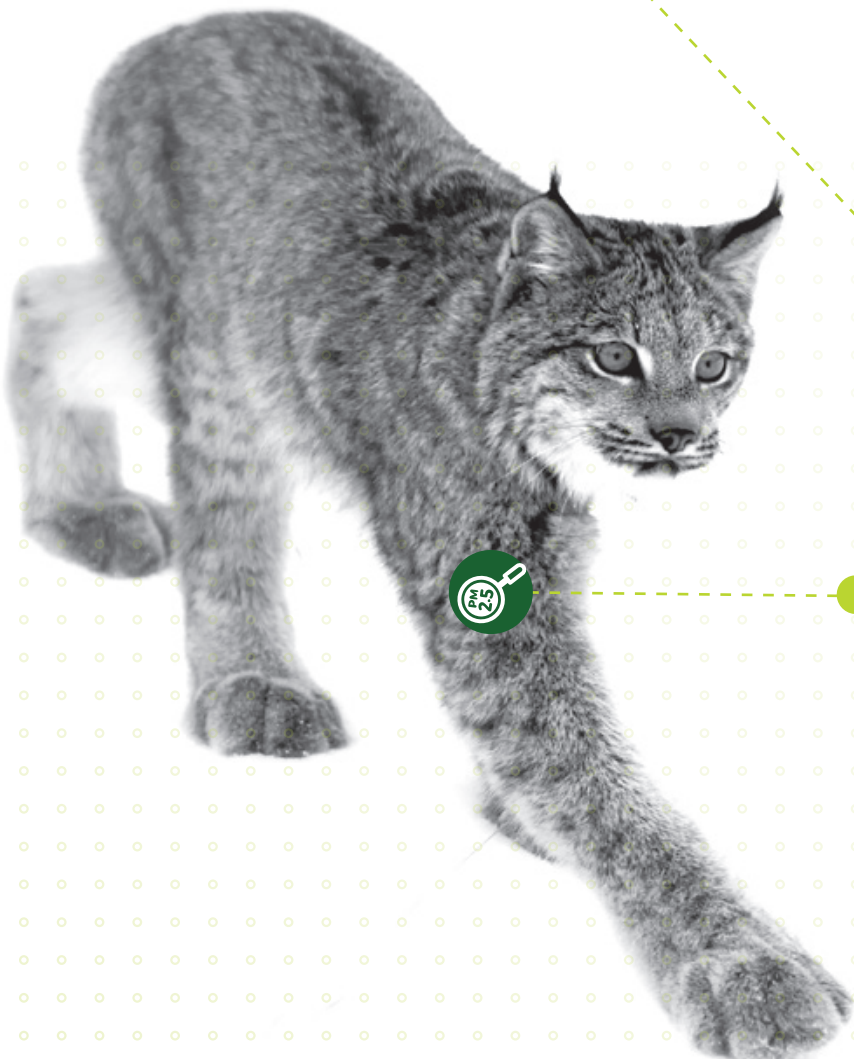
One of the main ways of carrying out this study was mapping the strategic targets of the EU and Ukraine in the EGD context in eight key areas: climate change, energy and energy efficiency, green agriculture, industrial policy, transport, zero pollution, biodiversity, and financing green transition. For each of the sectors, the paper suggests a list of recommended flagship initiatives.

We hope that the conclusions, recommendations, comparative characteristics of targets, and list of flagship initiatives will be useful in the process of bilateral work of Ukraine and the EU on setting up the priorities for their cooperation within the EGD framework.

This policy paper was produced as part of the implementation of the project “European Green Deal for Ukraine: from strategies to practical actions” funded by the International Renaissance Foundation and the European Union.



# METHODOLOGY



The purpose of mapping the European Green Deal's strategic targets was to identify development trends of Ukrainian policies in the EGD areas and, based on the trends so identified, suggest flagship initiatives that might be jointly implemented by Ukraine and the EU in order to synchronize the policies. Accordingly, such mapping may not be viewed as an attempt to analyze the current state of affairs in corresponding sectors in Ukraine.

The following eight priority areas of the EGD were selected for the analysis:

- Climate change;
- Energy and energy efficiency;
- Green agriculture;
- Industrial policy;
- Zero pollution;
- Transport;
- Biodiversity; and
- Financing green transition.

The following methods were used for mapping each of the above EGD areas:

### **(1) Comparing measurable indicators**

Measurable indicators were selected for each of the EGD areas (in case of their availability in EGD documents). The selection was based on two key criteria: the importance of the indicator for Ukraine and the availability of comparable data for this indicator in both the EU and Ukraine.

The choice of indicators was primarily limited to those present in documents adopted within the EGD framework. Therefore, at the first glance, their relevance for Ukraine might raise doubts. At the same time, the mapping was intended to compare the development goals of Ukraine and the EU in the EGD context, which justified this ap-

proach. We recognize that, for purposes of a national-level analysis, every sector might have to contain other indicators that would correspond to the current challenges and priorities of the Government.

Each of the measurable indicators is presented graphically, including the current status in both Ukraine and the EU and the targets (where available). Chart 1 below illustrates the basic ways to interpret the findings: the starting position, lag/lead, movement direction (same or opposite), and ambition of proposed changes (the longer the arrow, the more ambitious target).

The latest available data from open sources was used for each of the measurable indicators. The targets were taken from EGD-related documents and other strategic documents of the EU and Ukraine.

Several areas do not contain an analysis of measurable indicators because either there are no such indicators in the EGD itself or no comparison is possible due to the lack of corresponding data in Ukraine.

### **(2) Comparing reform agendas**

For each of the sectors, a comparative analysis of key changes was carried out, including five key changes envisaged by the EGD and corresponding changes planned by Ukraine. The key changes for the EU were determined based on the Communication "European Green Deal" or other documents adopted for the EGD implementation (strategies, action plans). For Ukraine, such information was obtained from all policy documents in force (plans of the Government, strategies, action plans, etc.).

### Mapping of Ukraine's development goals in the context of the EGD

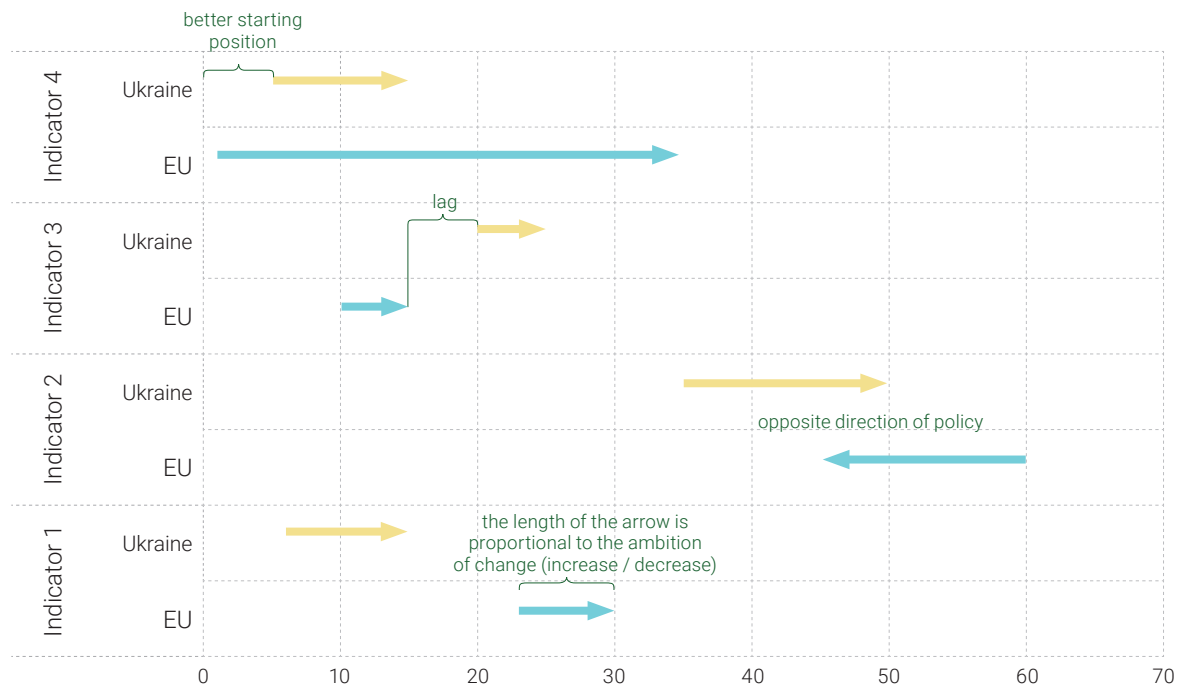


Chart 1. The basic ways to interpret a comparative analysis of indicators

An analysis of the general agendas in each of the sectors was also conducted – issues that are presently relevant or the Government is working on, their comparison with the current key priorities of the EGD, as well as the existence of this sector in the EU-Ukraine Association Agreement. Such a comparison is necessary since the current priorities of the Government of Ukraine in a given sector might differ significantly from the current priorities of the EU, which is primarily due to the differences in the current state of affairs in the sector.

The general agenda for Ukraine was determined based on the Government’s program and the 2030 National Economic Strategy of Ukraine.

### (3) General conclusion and proposed flagship initiatives

Based on the analysis of measurable indicator(s) and/or the analysis of reform agenda for each of the areas, a general conclusion is made on the potential for involving Ukraine in this area.

Based on the general conclusion, a list of possible flagship initiatives is suggested that Ukraine and the EU can jointly implement in order to synchronize policies or attain common EGD targets. The recommended flagship initiatives contain a brief description. They can deal with strategic cooperation, practical issues, or initiatives at the municipal level. The list of flagship initiatives also includes the initiatives of which implementation has been already started by the EU and Ukraine.



# MAPPING OF TARGETS AND CURRENT SITUATION

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## Climate change



**The potential** for Ukraine's involvement in the EGD in this area is high in view of the significant contribution Ukraine has already made toward reducing global greenhouse gases emissions, the presence of climate issues among the priorities of the EU's and Ukraine's agendas, the fact that this area is addressed in the Association Agreement, and even the differences in the priorities and the development status of the climate policies in the EU and Ukraine.

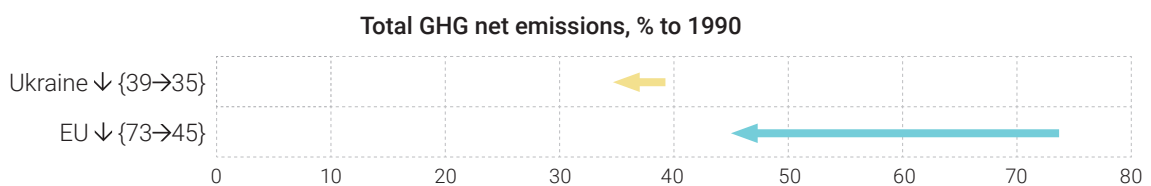
### Recommended flagship initiatives:

- Climate-neutral communities
- Climate awareness of the citizens of Ukraine
- Climate governance architecture

**Measurable indicator:** greenhouse gases emissions.

Greenhouse gases emissions are a key indicator of the climate change sector in the EGD. An international data source (UN Framework Convention on Climate Change) allows drawing an adequate comparison for this indicator (as of 2018). The emission reduction goals were selected based on the most ambitious target by 2030 in the EGD Communication (55%, which corresponds to the EU's renewed Nationally Determined Contribution (NDC) under the Paris Agreement) and the draft Second NDC of Ukraine as announced by its Ministry of Environmental Protection and Natural Resources (65%).

The comparative analysis based on the measurable indicator shows that both Ukraine and the EU are planning to go in the **same direction**. Although the **ambition level** (the scale of expected change as against benchmark) of the targets of Ukraine and the EU in this area is different, it should be noted that, from the point of view of the ultimate goal, Ukraine has already achieved a significant reduction in greenhouse gases emissions and is not planning to increase its emissions above the level that the EU only aims at reaching by 2030 as compared to 1990. Therefore, in the medium run (by 2030), there is an obvious **lag of the EU** on this key indicator. However, one can predict the opposite in the long run: the EU intends to attain climate neutrality in 2050, and Ukraine in 2060



Data: UNFCCC; EU's renewed NDC; Ukraine's draft Second NDC (as of April 2021)



(according to the 2030 National Economic Strategy of Ukraine and the draft Second NDC).

**To summarize, the indicators show the EU's lag in the medium ran and the common vectors of movement, though differing in the ambition. The much better "starting" position of Ukraine enables its involvement in achieving targets in this key EGD sector.**

Climate change is central to the European Green Deal and hence crosscutting across all elements (areas) of the EGD: from reaching climate neutrality by 2050, emissions reduction in the industrial and energy sectors, effective carbon pricing system to the consumption shifts and changing behavior patterns of ordinary citizens.

The **comparative analysis** shows that the key subject changes envisaged by the EGD for this sector are generally mirrored in the plans and priorities on the side of Ukraine. The only differences are the global ambitions of the EU in the area (something Ukraine does not have) and the lack of systemic targets in Ukraine regarding the involvement of all stakeholders, especially citizens. At the same time, the Government's plans to reduce greenhouse gases emissions do not correlate with practical actions in key areas (specifically in the energy sector), and the ongoing discussion on the draft Second NDC of Ukraine indicates an intention to increase emissions in certain sectors and ensure the principal reduction in the energy sector.

The comparison of the general **agendas of the EU and Ukraine in this area** demonstrates that they

**Table 1. Comparative analysis of key changes in the Climate Change sector**

Key changes in the sector envisaged by the EGD	Corresponding changes planned in Ukraine
Achieving EU climate neutrality by 2050, in particular, through the involvement of citizens and all stakeholders.	Reducing greenhouse gases emissions; achieving climate neutrality by 2060.
Significantly reducing the carbon intensity of the EU economy (decarbonization of economy).	Increasing the decarbonization level of the national economy.
Ensuring effective carbon pricing in all economic sectors.	Improving the taxation of greenhouse gases emissions and implementing a national Emissions Trading System.
Adopting a new ambitious Climate Change Adaptation Strategy.	Adopting an Environmental Safety and Climate Change Adaptation Strategy.
Ensuring the EU's global leadership in climate change.	Adopted a reasonable Second Nationally Determined Contribution.

Sources: Communication "European Green Deal," Action Program of the Government of Ukraine, Decree of the President of Ukraine "On the decision of the National Security and Defense Council of Ukraine of Sep. 14, 2020", "On the National Security Strategy of Ukraine", 2030 National Economic Strategy of Ukraine

are **somewhat different**: the EU plans to improve and enhance the climate policy ambition whereas Ukraine, as a matter of fact, is just developing such a policy. This is corroborated by the **basic priorities of the Government** in this area:

- Adopt a Second NDC;
- Increase the level of decarbonization of the national economy;
- Adopt a climate change adaptation strategy;
- Implement a system for monitoring, reporting, and verification of greenhouse gases emissions and emission trading;
- Reform GHG taxation and revenue use.

Climate change is an area mentioned among Ukraine's commitments under the **Association Agreement**, specifically regarding the implementation of a number of directives and regulations (including those on the emissions trading system), as well as in a separate dedicated annex.

**Thus, the potential for Ukraine's involvement in the EGD in this area is high in view of the significant contribution Ukraine has already made toward reducing global greenhouse gases emissions, the presence of climate issues among the priorities of the EU's and Ukraine's agendas, the fact that this area is addressed in the Association Agreement, and even the differences in the priorities and the development status of the climate policies in the EU and Ukraine. Nevertheless, the current inconsistency of Ukraine's climate policy with the sectoral policies may be detrimental to opportunities for cooperation.**

The high involvement potential creates conditions for a number of **flagship initiatives**; however, such initiatives are rather of a sectoral character

(energy sector, industry, etc.). The following can be proposed in the context of climate change *per se* as a separate thematic element of the EGD:

- **"Climate-neutral communities" – creating conditions for the transformation of cities and communities in Ukraine into climate-neutral.** The matter here is to create conditions (including statutory tax, customs, and other preferences) for certain small cities or communities to start, with EU support, working on the transition to climate neutrality. This may also include both ambitious energy efficiency programs and the overall modernization of energy systems (heating, RES, etc.) in such communities, as well as the implementation of circular economy principles;
- **"Climate awareness of the citizens of Ukraine" – raising the climate awareness of Ukrainians and involving them in the common climate policy in Europe through participation in the European Climate Pact.**<sup>1</sup> The transformation toward a climate-responsible country requires citizen involvement and support, which Ukraine is lacking. Such a flagship initiative should be focused on raising public awareness of climate change, its causes and consequences, and every person's responsibility for climate action, as well as altering the citizens climate-related behavioral patterns (mobility, nutrition, wastes, etc.). As for the implementation form, it may be both a separate process and rolling out the EU's existing process, the European Climate Pact, onto Ukraine;

.....  
1 The European Climate Pact is an EC initiative for interaction of various stakeholders and civil society aimed at stimulating their commitment to climate and environmental action as well as more sustainable behavior.

- **“Climate governance architecture” – such an initiative has already been announced in the wake of the EU-Ukraine Association Council meeting in 2021.** Taking into account the above conclusions, it could generally promote the climate policy development in Ukraine, “pull it up” to the mechanisms already operationalized in the EU, and facilitate their further consolidation/synergy. It could also include ensuring the realization of Ukraine’s

climate goals both in terms of the nationally determined contribution in general and the carbon footprint reduction in the economy’s individual sectors. Within the framework of this initiative is a significant potential for developing an emission trading system in Ukraine and “incorporating” it in the European one, which could assist in mitigating the impact of the Carbon Border Adjustment Mechanism (CBAM) on Ukraine.



## Energy and energy efficiency



**The potential for Ukraine's involvement in the EGD in the energy and energy efficiency area is very high in view of the same vectors of movement direction, the ambition of changes, the similarity of agendas, and having this area addressed in the Association Agreement.**

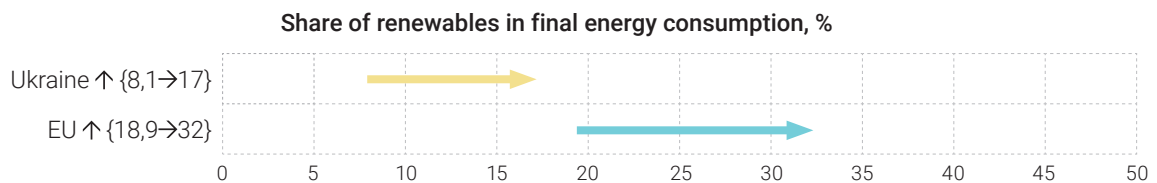
### Recommended flagship initiatives:

- Cooperation on "green" hydrogen and other renewable gases
- Ukrainian "wave of renovations"
- Combating energy poverty
- Transformation of coal regions (just transition)
- RES at the local level

**Measurable indicators:** Four measurable indicators represent the energy and energy efficiency sector. These were selected based on the availability of comparable data<sup>2</sup> and their representativeness from the angle of the EGD's main goals in this area in terms of the share of RES in the final energy consumption,<sup>3</sup> the installed capacity of green hydrogen electrolyzers, the share of electricity in household

heating,<sup>4</sup> and the pace of energy modernization of buildings.<sup>5</sup>

The comparative analysis using the measurable indicator of the **RES share in the final energy consumption** indicates a **significant gap** between the current rates in Ukraine and the EU. Besides, the European Union has set up a more ambitious target of 32% RES in the final energy consumption by 2030 as against only 17% in Ukraine. That is,



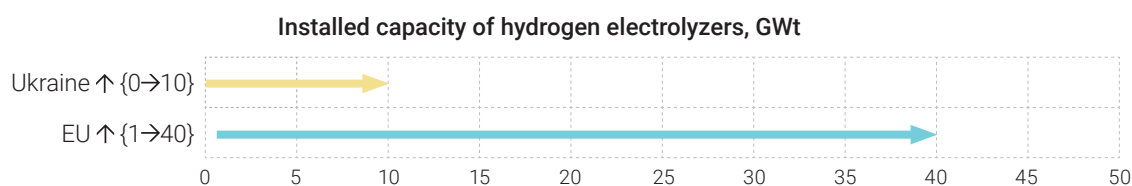
**Data:** Eurostat, International Energy Agency, State Agency for Energy Efficiency and Energy Saving of Ukraine, 2030 Strategy of the State Environmental Policy of Ukraine; EU Climate Target Plan (2019; 2030).

<sup>2</sup> In a number of cases, corresponding data is not available in Ukraine (e.g., additional green jobs, share of wave power plants, share of natural gas in gaseous fuels, etc.). Moreover, certain targets are either absent in Ukraine (share of electric heating) or represent no more than governmental statements (e.g., the targets regarding the installation of green hydrogen electrolyzers or the pace of energy modernization of buildings).

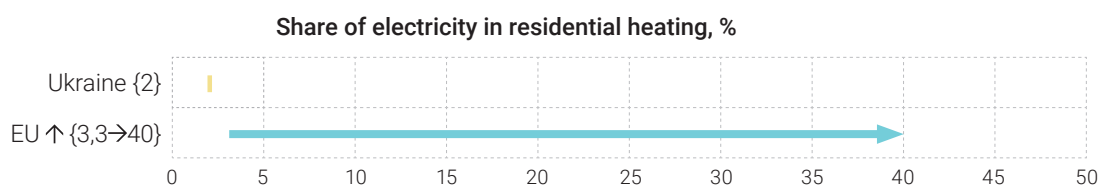
<sup>3</sup> The EU's 2030 Climate Target Plan contains a proposal to increase the RES share in the final energy consumption up to 38-40%. The target in Ukraine's 2030 Strategy of the State Environmental Policy actually reproduces that in the 2035 Energy Strategy of Ukraine in terms of the RES share in TPES but, unlike the latter, is formulated as the "final consumption" (which, in essence, is less ambitious).

<sup>4</sup> Computed for Ukraine based on data of the National Energy and Utilities Regulatory Commission on power consumption by consumers with an electric heating system or an electric heating system and an electric kitchen range (2019).

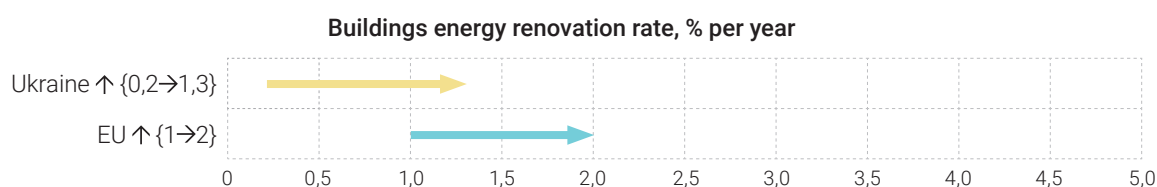
<sup>5</sup> The modernization pace was computed based on data on the number of thermomodernized buildings in Ukraine (State Agency for Energy Efficiency and Energy Saving of Ukraine) and the total number of apartment houses. The target was taken from the draft Second NDC (as of April 2021).



Data: European Commission; Ministry of Foreign Affairs of Ukraine (2019; 2030).



Data: Eurostat, European Commission; National Energy and Utilities Regulatory Commission (2019; 2030).



Data: European Commission; State Agency for Energy Efficiency and Energy Saving of Ukraine (2020); Draft Second NDC (as of April 2021).

even if Ukraine does reach the planned target of 17% by 2030, it will be still below the EU level of 2019 (18.9%).

The comparative analysis based on the measurable indicator of the **installed capacity of green hydrogen electrolyzers** shows that both Ukraine and the EU have more or less the same starting positions and are planning to move in the **same direction** (for the time being, the targets fixed by Ukraine is mere declarations of individual ministries). The EU's and Ukraine's ambitions are big given the practical absence of industrial capacities for the production of hydrogen and proven technologies for its large-scale storage/transportation at the moment. It should be also noted that the EU looks at hydrogen energy development from the point of view of own consumption (re-

placement of fossil fuels) whereas Ukraine's expectations are rather linked with export than domestic use.

The comparative analysis for the measurable indicator of the **share of electricity in household heating** is illustrative of its currently low level both in Ukraine and the EU. The European Union has a great ambition to reach a 40-percent share by 2030. However, whereas electric heating is not considered as a separate target or indicator in Ukraine, it is an important indicator of energy systems integration in the EU (electric power is seen as a universal energy carrier, which allows "adding" various energy sources, including renewable and local, on the way from supplier to consumer).

The comparative analysis based on the measurable indicator of the **pace of energy modernization of buildings** demonstrates the same movement vector direction with a lag of Ukraine on the start line. In particular, this concerns the obsolete housing stock, which features relatively low energy efficiency, and slow progress in energy modernization of public buildings. Anyway, the levels of the EU's and Ukraine's ambitions are commensurable.

Thus, the comparative analyses with the measurable indicators in this area testify to having **common goals, same movement vectors, and ambition** (except for electric heating); **however, full synchronization of Ukraine with the EU in the energy modernization pace and the RES share in the final energy consumption is unrealistic. Ukraine's arrears** on the indicators under review are obvious.

The EGD's top priority in the area of energy and energy efficiency is to decarbonize the energy system. It includes reducing the use of fossil fuels while developing hydrogen energy and other renewable sources, increasing the share of RES in all sectors (specifically those that have not easily yielded to decarbonization so far. e.g., transport), and improving the energy efficiency of buildings. Decarbonization in a sector is closely related to social and economic consequences for certain regions, which is addressed by just transition approach. There is a crosscutting issue of energy system integration, without which it would be difficult to decarbonize traditional vertically structured and separately functioning systems (gas, power and heat supply, oil products).

The **comparative analysis** shows that the key subject changes envisaged by the EGD for this sector are generally **mirrored in the plans and priorities on the side of Ukraine**. The only direct difference is that Ukraine lacks any tasks or goals related to energy system integration as well as spelling out the said priorities as clear targets in individual sub-sectors (e.g., where it concerns RES development). Moreover, the Government's plans to increase fossil fuel extraction come in contradiction with the decarbonization vector on the whole although may be viewed as transitional (provisional) in the medium run.

The comparison of the general **agendas of the EU and Ukraine in this area** shows that they are **formally similar**: the EGD in this area focuses on decarbonization-related issues besides energy security and affordability. In Ukraine, too, these issues are on its agenda as the Governmental Program's priorities:

- Enhance energy independence by increasing the volume of domestic energy carrier extraction and diversifying the sources and supply routes of energy resources;
- Develop renewable and low-carbon energy sources and alternative fuels and ensure energy reliability, eco-friendliness, and affordability for all consumers;
- Increase the number of producers of hydrogen and other synthetic energy resources produced from renewable energy sources;
- Adopt an integrated plan on combatting climate change and on energy sector development for a period until 2030;
- Update the 2035 Energy Strategy of Ukraine, including individual sectoral documents on the development of the power-industry, nuclear-



**Table 2. Comparative analysis of key changes in the Energy and Energy Efficiency sector**

Key changes in the sector envisaged by the EGD	Corresponding changes planned in Ukraine
Energy system transformation with the purpose of decarbonization, including the reduced use of fossil fuels (green energy transition) and hydrogen energy development.	<p>Increasing the extraction volume of domestic energy carriers.</p> <p>Increasing the number of producers of hydrogen and other synthetic energy resources produced from renewable sources.</p>
A RES-based energy sector.	<p>Developing renewable and low-carbon energy sources and alternative fuels, ensuring the reliability, eco-friendliness, and accessibility of energy for all consumers.</p> <p>The share of RES (including hydrogeneration capacities and geothermal energy) in TPES at 17% in 2030.</p> <p>The share of generation from RES in the total electricity generation at 25% in 2030.</p>
Increasing the energy efficiency of buildings.	<p>Developing and implementing a nationwide program on thermomodernization of buildings, which will identify a strategic priority and carry out measures to increase energy saving and energy efficiency.</p> <p>Implementing the National Plan on Energy-Independent Buildings and synchronization with the European Green Deal's Renovation Wave for buildings as a way to overcome energy poverty.</p>
Energy system integration.*	None
Just energy transition.	<p>Ensuring balanced development of the territories that will need state support as a result of reduced coal extraction through the development of a National Program on Coal Regions Transformation.</p> <p>Developing and implementing a Coal Sector Reform Program, taking into account the best international experience in coal region transformation and the opinion of the citizens who reside in the coal regions and are employed by coal enterprises.</p>

Sources: Communication "European Green Deal," Action Program of the Government of Ukraine, 2030 National Economic Strategy of Ukraine, other acts of the Cabinet of Ministers of Ukraine.

\* Unlike the vertical production-to-consumption energy chains (electricity, oil products, gas, etc.), an integrated energy system provides for coordinated planning and operation of the energy system as a whole, bundling the carriers, infrastructure, and consumption sectors.

industry, coal-industry, peat-extraction, oil & gas, and oil/gas-processing complexes;

- Develop and implement a nationwide program on thermomodernization of buildings, which will identify a strategic priority and carry out measures to increase energy saving and energy efficiency.<sup>6</sup>

In practice, however, the priorities of the Government are somewhat different from those in its program. As it is, the pressing items on its agenda include the issues of integration with the European continental electrical grid ENTSO-E, diversification of supply (including nuclear fuel), stability of the energy system operation as a whole, the implementation of European rules and liberalization of energy carriers markets, energy poverty, and debts to RES producers in the process of switching over to a new support system.<sup>7</sup>

The energy area is part of Ukraine's commitments under the **Association Agreement**, in particular, regarding the implementation of energy legislation in accordance with updated **Annex XXVII**.

**Thus, the potential for Ukraine's involvement in the EGD in this area is very high in view of the same movement direction, the ambition of changes, the similarity of agendas, and the area's coverage by the Association Agreement.**

The high involvement potential creates conditions for a number of **flagship initiatives**, the implementation of some of which has been in fact launched:

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<sup>6</sup> From the Action Program of the Government of Ukraine.

<sup>7</sup> From the speech of acting Minister of Energy of Ukraine Yuriy Vitrenko during his meeting with members of the European Business Association on Feb. 2, 2021.

- **“Cooperation on ‘green’ hydrogen and other renewable gases”** – this initiative, which has already found support on the part of both the EU and the Government of Ukraine, aims at producing and storing hydrogen in Ukraine as well as using the existing gas transportation infrastructure for its supply. The only thing that can be added in this context is that, as a flagship initiative, it could also include the promotion of hydrogen consumption in Ukraine as well as the development of renewable and low-carbon gases (in particular, biomethane and synthetic gases). Moreover, the ambitious plans on green or pink hydrogen production should duly take into account the deficit of water resources in Ukraine;
- **“Ukrainian wave of renovations”** – in essence, the EU has already supported this initiative that aims at improving the energy efficiency of buildings, approximating building energy efficiency requirements to the European standards, implementing the technologies of building information modeling, reducing wastes, and implementing mandatory energy management systems for public buildings. The goal of the initiative is to form sustainable energy modernization practices for both the housing stock and the administrative and public buildings;
- **“RES at the local level”** – an initiative to encourage the use of RES in the urban heat and electricity supply systems and transport sector. It could include the implementation of RES projects in local communities, development of energy cooperatives, local energy communities, smart grids, and energy storage devices, as well as promotion of cogeneration;



- **“Combating energy poverty”** – an initiative aimed at involving Ukraine in the European initiatives and policies on energy poverty criteria, data collection and analysis, overcoming the consequences, etc.;
- **“Transformation of coal regions” (just transition)**. Such an initiative may include the transfer of the EU experience in transforming

coal regions in EU countries and applying the just transition mechanism as well as concrete steps toward turning the coal regions into investment-attractive territories. This initiative already enjoys the support of both the EU and the Government of Ukraine.



## Green agriculture



The biggest potential for Ukraine's involvement in the EGD in the area of agriculture is observed in organic farming, application of EU standards for safe and sustainable food production, and digitalization of agriculture.

### Recommended flagship initiatives:

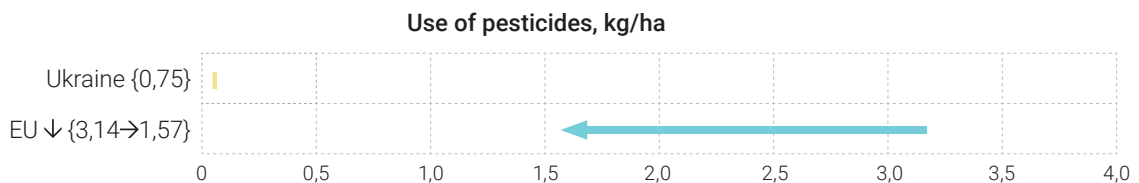
- Stimulating the development of climate-oriented agriculture (in particular, organic farming, low-till technologies, etc.)
- Sustainable consumption and healthy diets
- Reducing food and food waste losses
- Cooperation to digitalize the agriculture

**Measurable indicators:** use of pesticides per sown land unit, use of mineral fertilizers, the share of agricultural land under organic farming, and access to high-speed internet in the countryside.

The agricultural sector in the European Green Deal is represented by a range of indicators in a Farm to Fork Strategy. These include reduced use of chemical pesticides

and could be compared with corresponding ones in the EU.<sup>8</sup>

The comparative analysis using the measurable indicators demonstrates contradictory results. As for the **use of pesticides and mineral fertilizers per sown land unit**, it is **much higher in the EU than in Ukraine**.<sup>9</sup> Even if the EU hits its 2030 targets, its indexes of the use of pesticides and mineral fertilizers will by far exceed those in Ukraine

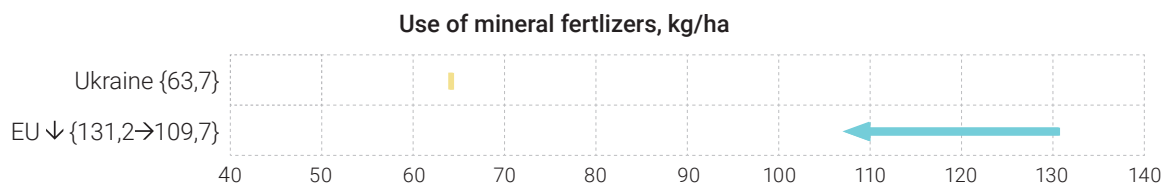


Data: FAO (2018; 2030).

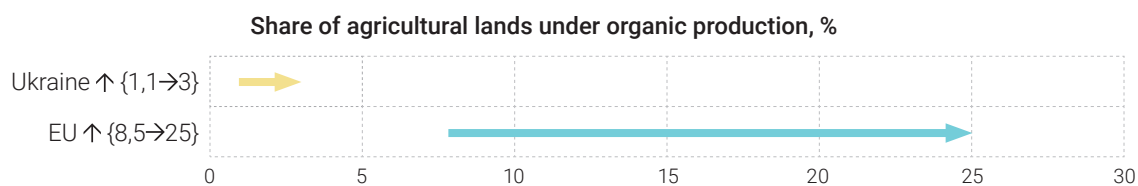
and fertilizers, reduced nutrient loss and antimicrobials sale, increased share of agricultural land under organic farming, reduction of food waste, and internet access in the countryside. For our analysis, we selected the indicators that were relevant to Ukraine

8 The indicators for pesticides and mineral fertilizers use in Ukraine does not have a target, so the charts show only their actual status. The data for the EU (as of 2018) also includes the United Kingdom. For Ukraine, the FAO was used as the data source on the application of mineral fertilizers and pesticides for the sake of making proper comparisons with the EU. For example, the national pesticide application statistics is higher (1.4 to 1.6 kg/ha in 2018).

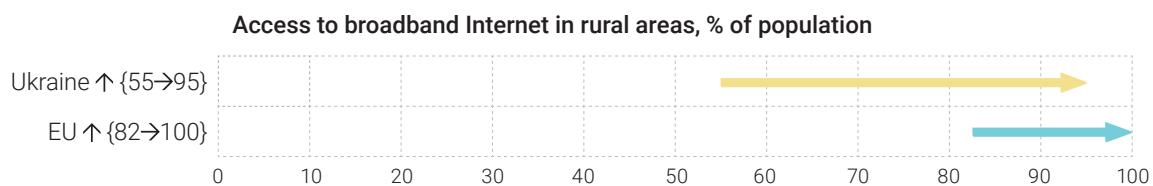
9 This indicator does not reflect either the issues of quality and safety of pesticides and mineral fertilizers used or the issues of shadow and/or illegal trafficking of these substances. For example, a recent screening monitoring in the Dnipro basin has found out massive use of banned pesticides.



Data: FAO (2018; 2030).



Data: Results of the monitoring by the Ministry of Economy of Ukraine in 2020, 2030 National Economic Strategy of Ukraine, Eurostat (2019; 2030).



Data: Draft National Strategy for Development of Broadband Internet Access (2020), Action Program of the Cabinet of Ministers of Ukraine (2020), Eurostat (2019; 2025).

as of now. Since Ukraine's strategies and plans lack any 2030 targets for the **use of pesticides and mineral fertilizers**, its intentions (goals) for the use of these substances remain unclear, as do Ukraine's movement vector and ambition level. One may conclude that these issues **are not on the agenda of the Government of Ukraine** at present.

**The share of agricultural land under organic farming** in Ukraine and the EU is indicative of their movement in the **same direction**, which is toward increasing this share. However, the EU's ambition level is much higher than that of Ukraine (25% and

3%, respectively). **Ukraine** will hardly be able to catch up on the **lag** in the medium run.

Agriculture digitalization is impossible without proper **broadband access to the internet in the countryside**, which makes this indicator important. Now Ukraine has a lower starting position as compared to the EU (55% and 82%, respectively) but it intends to **go in the same direction** and significantly reduce the gap with the EU, setting up **ambitious targets** to improve broadband internet access for its rural population (covering 95% of the rural population in Ukraine as against 100% in the EU).

**Thus, the indicators of the specific use of pesticides and mineral fertilizers in agriculture show a better situation in Ukraine, whereas the indicators of the share of agricultural land under organic farming and the rural population's access to broadband internet show that both Ukraine and the EU have common movement vectors. However, Ukraine's ambition with respect to the share of land under organic farming is very low and it will be unable to catch up with the EU even under the most optimistic scenarios.**

Green agriculture is one of the European Green Deal's key elements. The EU's policy focuses on the following changes: ensure food security, sustainable food production, and sustainable processing practices, promote sustainable food consumption and transition to a healthy diet, reduce food loss and waste, and combat food fraud. On the whole, Ukraine mirrors ensuring food security, creating conditions for organic farming, promoting sustainable food consumption and transition to a healthy diet, and combatting food fraud in its plans and priorities. However, it does not have any strategic plans to **reduce food loss and waste**, and the issues of **promoting sustainable practices in the industries of food processing, trade, public catering, and hotel services**, too, require attention (see Table 3).

The comparison of the general **agendas of the EU and Ukraine in this area** shows a **partial overlap**. In the Action Program of the Cabinet of Ministers of Ukraine (2020), the Government puts the main accent on **food security**, defining it as one of the

**long-term priorities in its activities**. It is worth stressing that, with the adoption of the new 2030 National Economy Strategy, the Government has been looking at the agricultural policy from a broader perspective and explicitly speaks of the national policy's consistency with the European Green Deal. Among the tasks of the agricultural policy as an element of the new economic policy, the Government of Ukraine has also defined its environmental component, in particular, to ensure:

- Development of sustainable agricultural production;
- Support of organic farming and increase in the organic production;
- State policy in the agrobusiness sector for environmental protection and natural resource management in agriculture;
- Development of the irrigation infrastructure;
- Production and export of safe and healthy agricultural products and foods.

Several priorities of the Government of Ukraine aim at implementing European standards in Ukraine to fulfill the **Association Agreement** and meet the conditions for free trade between Ukraine and the EU. The agricultural sector is included in Ukraine's commitments under the Association Agreement, in particular, in the context of cooperation between Ukraine and the EU for the implementation of relevant agricultural policies as well as the harmonization with corresponding law and regulatory standards of the EU.

**Thus, the potential for Ukraine's involvement in the EGD in agriculture is high in the areas of or-**

**Table 3. Comparative analysis of key changes in the Green Agriculture sector**

<b>Key changes in the sector envisaged by the EGD</b>	<b>Corresponding changes planned in Ukraine</b>
Ensuring food security.	Food security as a long-term priority in the activities of the Government.
Ensuring sustainable food production. Encouraging sustainable practices in the industries of food processing, trade, public catering, and hotel services.	Sustainable development of agriculture. Facilitating the creation of conditions for organic farming development.
Promoting sustainable food consumption and transition to a healthy diet.	Creating proper conditions for safe consumption. Optimizing food systems for healthy diet accessibility for citizens.
Reducing food loss and waste.	None
Combating food fraud.	Substantially reducing the proportion of counterfeit foods.

Source: EU Farm to Fork Strategy, Communication "European Green Deal," Action Program of the Cabinet of Ministers of Ukraine (2020), Strategic Action Plan of the Ministry of Economy, Trade, and Agriculture Development of Ukraine for 2020-2024 (updated), 2030 Draft Food Security Strategy.

**organic farming and application of EU standards for safe and sustainable food production, taking into account the same movement vectors, the likeness of the agendas, and coverage by the Association Agreement.**

This involvement potential creates conditions for a number of **flagship initiatives**:

- **"Stimulating the development of climate-oriented agriculture (in particular, organic farming, low-till technologies, etc.)"** Such a flagship initiative would help raise up the ambition of increasing the area of land under organic farming and use the unrealized potential of Ukraine. The importance of

developing this sphere is closely related to the issues of exporting organic products by Ukraine to the EU. Such products must meet EU standards, so the synchronization of policies and legislation in this sphere is a prerequisite to ensure free trade.

- **"Sustainable consumption and healthy diets."** This initiative is about developing sustainable and conscious consumption behavior patterns among the population. In this way, it could help deepen reforms in Ukraine and cooperation with the EU in ensuring food security, implementing food quality standards, and healthy diet accessibility, and eventually reducing the

environmental impact and conserving biodiversity;

- **“Reducing food and food waste losses.”** Such an initiative would be useful for Ukraine to fill up its gaps in strategic planning on the reduction of food loss and waste. The initiative is especially relevant because Ukraine right now is developing its waste handling legislation and so could make use of the initiative to take necessary provisions into account. Moreover, pilot projects in this area under various European programs, including Horizon, could enhance this flagship initiative;

- **“Cooperation to digitalize the agriculture”** – this could comprise a number of issues related not only to the expansion of internet access in the countryside but also the implementation of digital solutions in agricultural production and the whole added-value chain of agricultural products, in particular, introducing digital passports for agricultural products.





**The potential for Ukraine's involvement in the EGD** in the industrial policy area may be high, provided there is mutually beneficial cooperation between Ukraine and the EU, in view of the ambition of the proposed reforms and the coverage of this area by the Association Agreement, in particular its part dealing with trade.

### **Recommended flagship initiatives:**

- Circular industry and waste
- Stop greenwashing
- Ukraine's participation in the EU industrial ecosystems and green alliances

This sector does not contain **measurable indicators** since they are absent in the EGD program documents in this area.

The industrial policy is a key element of the European Green Deal. Already several program documents were adopted in pursuance of the EGD in 2020, including the New Industrial Strategy, the EU SME Strategy, the Circular Economy Action Plan, and the European Digital Strategy. On the whole, the new industrial policy's priorities address decarbonization and ecologization of the sector as well as strengthening the digital services market. Increased competitiveness and self-sufficiency of the EU industry may be viewed as a general strategic sectoral priority. For Ukraine and its business, an important element of this component is the EU's desire to protect its internal market against

the unfair external competition in the context of environmental and climate standards.

As shown by our **comparative analysis**, the key subject changes in this sector envisaged by the EGD are generally **mirrored in the plans and priorities on the side of Ukraine**. It should be noted, however, that the existence of these mirror plans hardly means that our starting positions are the same.

It is clear that somewhat different accents are made in the area of circular economy and tougher environmental requirements for goods since Ukraine has just set off on this way and tries to implement EU-approximated standards in its legislation and practice.



**Table 4. Comparative analysis of key changes in the Industrial Policy sector**

Key changes in the sector envisaged by the EGD	Corresponding changes in the plans of the Government of Ukraine
Decarbonizing energy-intensive sectors.	General reduction of greenhouse gas emissions and decarbonization of the national economy. Increased resource efficiency.
Creating a digital single market.	Digitalization of the economy – a key direction of the state domestic policy.
Increased global competitiveness and self-sufficiency of EU industry.	Bringing Ukraine’s rank up in the world’s industrial competitiveness index.
Tougher environmental requirements for goods on the EU market.	Within the framework of the Association Agreement implementation (Ecodesign Directive etc.)
Deepening circularity of the economy through waste management.	Stimulating circular economy development. Reforming the waste management system. Increased rates of waste sorting, reuse, and recycling.

Source: Communication “European Green Deal,” Action Program of the Government of Ukraine, 2030 National Economic Strategy of Ukraine.

The comparison of the general **agendas of the EU and Ukraine in this area** reveals that they are **partially different**. In Ukraine, the top priority is to restore domestic industry, and one may consider the rest of the Government’s tasks as tactical priorities:

- Stimulate SME development;
- Restore domestic industry and increase its competitiveness, including that through creating conditions for development of the Ukrainian high-tech-oriented industry;
- Digital transformation and IT sector development;
- Integration into the EU markets, including an “industrial visa-free regime” (entering into an Agreement on Conformity Assessment and Acceptance of Industrial Goods);
- Economy ecologization by way of increasing the utilization efficiency of funds received for the actual volumes of emissions into the

atmospheric air and discharges into water objects of pollutants, the placement of wastes, and the actual amount of radioactive waste.<sup>10</sup>

The industrial policy is part of Ukraine’s commitments under the **Association Agreement**, in particular, where it concerns trade. This area is especially important, taking into account the necessity of integration into the EU markets, including the conclusion of an Agreement on Conformity Assessment and Acceptance of Industrial Goods (ACAA). Moreover, certain subsectors are a priority for cooperation with the EU within the Eastern Partnership framework.

The expected implementation of the Carbon Border Adjustment Mechanism (CBAM) can both

.....  
<sup>10</sup> The Action Program of the Cabinet of Ministers of Ukraine.



facilitate and obstruct Ukraine's cooperation with the EU in this area. For example, integration of our producers into EU production chains based on green technologies will strengthen with the CBAM implementation. That is, subject to eco-modernization of national production, the CBAM will protect Ukraine, too, against unfair competition by third countries.

**Thus, the potential for Ukraine's involvement in the EGD in the area of industrial policy can be high, provided there is mutually beneficial cooperation between Ukraine and the EU, in view of the ambition of the proposed reforms and the coverage of this area by the Association Agreement, in particular its part dealing with trade.**

Ukraine's involvement potential creates conditions for a few **flagship initiatives**:

- **"Circular industry and waste."** Such an initiative would be useful for defining and implementing a new waste management system as well as implementing mechanisms to ensure the right to repair and increase the service life of goods;

- **"Stop greenwashing."<sup>11</sup>** A flagship initiative like this could help enhance the ambition to stiffen environmental requirements for goods based on objective requirements and factors (e.g., transition to environment-friendly technological solutions and the implementation of ecodesign and labeling requirements) and, as a result, provide access to the European market for national goods;
- **"Ukraine's participation in the EU industrial ecosystems and green alliances,"** in particular, via the European Cluster Collaboration Platform. The goal of the initiative is to integrate Ukrainian industrial enterprises into European supply chains to ensure the strategic self-sufficiency of the EU's key industries. This initiative could also facilitate Ukraine's accession to green alliances.

.....  
<sup>11</sup> Greenwashing – marketing goods and services as environmental with no real basis or criteria of environmental friendliness.

## Zero pollution



**The potential for Ukraine's involvement in the EGD in the zero pollution area** is quite high in view of the similarity of the agendas regarding chemicals evaluation, ensuring a good status of air, water, and soil, improving environmental monitoring, and implementing a mechanism for industrial pollution reduction.

### Recommended flagship initiatives:

- Sustainable chemicals
- Zero pollution in cities
- Single European monitoring area

**No measurable zero-pollution indicators** were used for the comparative analysis since the EGD does not contain such indicators in this area. Therefore, a comparison was made based on the priority directions of Ukraine's and the EU's policies.

Zero pollution is one of the EGD's sectoral elements. In 2020, in pursuance of the EGD in this area, the EU adopted a Chemical Sustainability Strategy. This sector includes priorities related to water, air, and soil pollution, operation of industrial facilities, and chemicals management.

**The comparative analysis** shows that the key subject changes envisaged by the EGD in this sector are **mirrored in Ukraine's plans and priorities**. It should be noted that, unlike the EU, which

strives to upgrade its policy on these issues, the matter in Ukraine is rather implementing one. For example, Ukraine lacks a chemicals management system in the European sense and the Government is only planning to implement it. So, it is reasonable to conclude that Ukraine **significantly lags** in this area.

The comparison of the general **agendas of the EU and Ukraine in this area** demonstrates their **compatibility**. The Government of Ukraine has recognized ensuring a safe environment for the population as one of its strategic goals. This, among other things, implies elaborating Ukraine's position for participation in the European Green Deal and adapting the state policy in compliance with this EGD (the 2030 National Economy Strategy). The main accent is put on:

**Table 5. Comparative analysis of key changes in the Zero Pollution sector**

Key changes in the sector envisaged by the EGD	Corresponding changes planned in Ukraine
Enhancing the protection of human health and environment against the impact of chemicals; introducing safe and sustainable chemicals and supporting innovation; simplifying the chemicals evaluation process.	Preventing adverse impacts of chemical products on the environment and health of citizens. Ensuring chemical safety and promoting the use of modern pesticides and agrochemicals. Implementing a chemicals evaluation system in accordance with the EU acquis and international standards.
More stringent measures to reduce wastewater and microplastic pollution.	Reducing polluted wastewater discharges into water objects.
Implementing new air quality standards.	Implementing an environmental monitoring system, including monitoring of the atmospheric air quality up to EU standards.
A systemic revision of the existing system for monitoring and prevention of water, air, and soil pollution.	Updating regulations on the maximum permissible volumes of discharge and achieving a “good” environmental status of waters.
More stringent measures to prevent and reduce pollution from large industrial installations.	Implementing legal and institutional measures to prevent, reduce, and control industrial pollution and industrial accident risks.

Source: Communication “European Green Deal,” Chemical Sustainability Strategy, 2030 National Environmental Strategy, Action Program of the Cabinet of Ministers of Ukraine, 2030 National Economic Strategy of Ukraine.

- Increasing the environmental safety level through the implementation of a chemicals management system;
- Modernization of the environmental monitoring system according to European standards;
- Reducing and controlling industrial pollution as well as preventing the environmental degradation and the occurrence of technogenic disasters and accidents;
- Conserving and rationally using natural resources;
- Implementing the sustainable development principles and gradually switching over to the green economy.

A major difference between Ukraine and the EU in zero pollution priorities is in their starting positions. In the European Green Deal, the EU says of an improvement in its existing mechanisms for preventing air, water, and soil pollution and ensuring a good environmental status, whereas Ukraine confronts the necessity to implement

such mechanisms reckoning with the EU standards. The situation is also similar regarding industrial pollution and sustainable chemicals management as well as the necessity to harmonize national legislation with that of the EU.

The zero pollution area is part of Ukraine's commitments under the **Association Agreement**.

**Thus, the potential for Ukraine's involvement in the EGD in the zero pollution area is quite high in view of the similarity of the agendas regarding chemicals evaluation, ensuring a good status of air, water, and soil, improving environmental monitoring, and implementing a mechanism for industrial pollution reduction. The wide coverage of the area by the Association Agreement enhances this potential.**

The involvement potential creates conditions for several **flagship initiatives**:

- **"Zero pollution in cities."** The initiative aims at developing and implementing plans on improving the air quality, treating wastewater, and reducing water pollution in Ukrainian cities, as well as implementing a corresponding monitoring system. This initiative correlates with the EGD's idea of providing assistance to local authorities in ensuring cleaner air through more stringent monitoring regulations and air quality modeling and planning, and then providing them with opportunities to share their experiences in this area;
- **"Single European monitoring area."** This initiative could envisage the development of a comprehensive environmental monitoring system that would be based on the European principles and both methodologically and technologically integrated (compatible) with the European system.
- **"Sustainable chemicals."** Such an initiative would help implement a chemicals evaluation and labeling system, taking into account REACH and CLP requirements. In turn, the implementation of these regulations is a prerequisite for further access of chemicals produced in Ukraine to the EU market;



**The potential for Ukraine's involvement in the EGD** in the transport area is limited and primarily related to the electric transport development and the use of the significant potential of rail transport.

**Recommended flagship initiatives:**

- Development of electric vehicles and infrastructure
- Clean cities
- Smart mobility

**Measurable indicators:** greenhouse gases emissions in the transport sector, the share of new electric transport in the total sales, and the share of rail transport in cargo carriage.

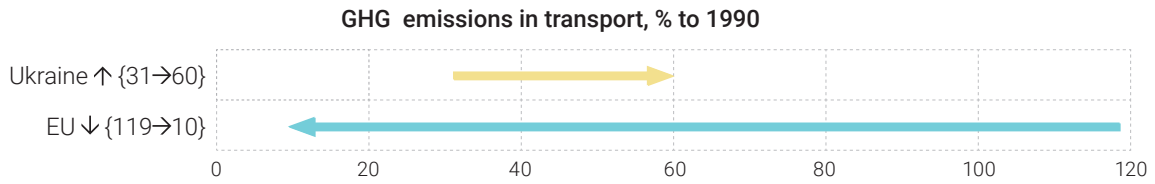
A number of indicators represent the sustainable and smart mobility sector in the European Green Deal. These include emissions of greenhouse gases and pollutants, an increase in the number of electric vehicles and development of infrastructure for them, a transition from automobile to rail and inland water transport, etc. We selected three indicators that are characteristic of the sector and for which comparable data could be found in both the EU and Ukraine.<sup>12</sup>

<sup>12</sup> The transport sector's GHG emission indicator's targets are shown by 2030 for Ukraine and by 2050 for the EU since the Ukrainian strategic documents do not set a target by 2050 and those of the EU do not have an intermediate 2030 target. The 2030 Transport Strategy of Ukraine envisages a GHG emission target for mobile sources at 60% of the 1990 level. The draft Second NDC suggests 38% of the 1990 level for the sector, including pipeline transport. Ukraine does not have a target for the share of rail transport in cargo carriage. Information on the sales of new electric transport was collected from various sources and we carried out own calculations. Electric transport in the EU for this indicator includes hybrids. The electric transport target for Ukraine is shown by 2030 and for the EU by 2025.

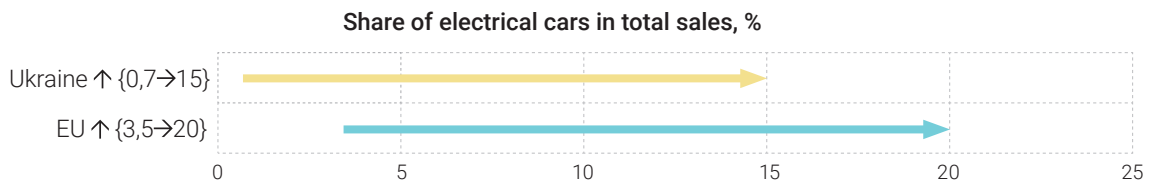
The comparative analysis using the measurable indicator on **greenhouse gases emissions in the transport sector** demonstrates opposite movement directions: the EU intends, and that with extraordinary high ambition, to reduce the emissions as compared to their current level, whereas Ukraine, which has already significantly reduced its emissions since 1990, is expecting an increase.

For the measurable indicator of the **share of new electric transport sales**, the comparative analysis shows high ambitions in both the EU and Ukraine. Actually, the electric car sales in Ukraine by far exceed the target set by the 2030 State Environmental Policy (0.1% for 2020 and 0.5% by 2025); however, this is achieved through the purchase of used electric cars, which are disregarded in comparisons with EU data. The draft Second NDC sets up a very ambitious target (15%).

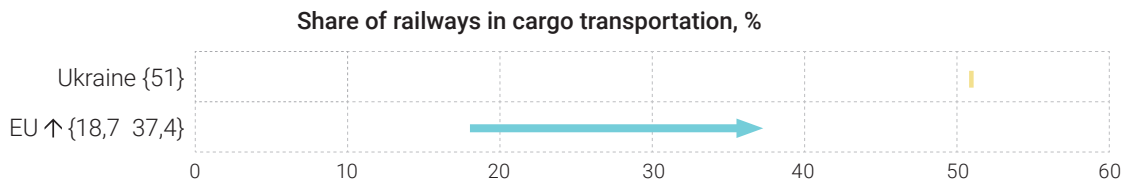
The comparative analysis based on the measurable indicator of the **rail transport share** shows



Data: State Statistics Service of Ukraine, Transport Strategy of Ukraine, EU Greenhouse Gases Inventory, Communication "European Green Deal," Sustainable and Smart Mobility Strategy (2018; 2030/2050).



Data: Own calculations, European Environment Agency, Communication "European Green Deal" (2018; 2025), draft Second NDC (as of April 2021).



Data: State Statistics Service of Ukraine, EC Report on the Rail Market Development, Sustainable and Smart Mobility Strategy (2018; 2050).

the EU's ambition. However, even if the EU hits the target by 2030, it will be considerably below Ukraine's current level. Ukraine is also planning to increase the use of rail transport although this has not been recorded in any strategic document but only voiced in political statements.

**To summarize, the indicators are illustrative of the opposite movement directions of Ukraine and the EU regarding greenhouse gas emissions and show an uptrend for the electric transport share. Ukraine has a high rate of rail transport in cargo carriage but it is difficult to determine its ambition on the matter due to the lack of a target.**

The transport area is important for the attainment of the EGD's goals because of the high ambitions of the EU in terms of decarbonization of this sector. The major directions of changes regarding sustainable and smart mobility include reduced greenhouse gases emissions in the sector; shifting a significant portion of cargo carriage from automobile transport to rail and inland water transport; transition to zero-emission vehicles and alternative fuels and the development of a corresponding infrastructure; improved public transport; and transport sector digitalization.

**Table 6. Comparative analysis of key changes in the Transport sector**

Key changes in the sector envisaged by the EGD	Corresponding changes planned in Ukraine
Reducing GHG emissions in the transport sector.	Reducing GHG emissions in the transport sector; decarbonizing the sector to achieve the climate neutrality goals by 2060 at the latest.
Shifting a significant portion of cargo carriage from automobile transport to rail and inland water transport.	Developing a program to switch over from automobile transport to rail and river transport.
Transition to zero-emission vehicles and alternative fuels and the development of the corresponding infrastructure.	Using fuel-efficient and environmentally friendly vehicles, alternative fuels, and green transports and increasing the proportion of electric transport and electric cars. Developing a charging infrastructure.
Improved public transport.	Improving the comfort and speed of traveling by passenger transport. Implementing subprojects on urban public transport development in 11 cities of Ukraine under the European Investment Bank's Ukraine Urban Public Transport project.
Transport sector digitalization.	Implementing intelligent transport systems and traffic management systems in surface and water transport.

Source: Communication "European Green Deal," Sustainable and Smart Mobility Strategy, Transport Strategy of Ukraine, Action Program of the Government of Ukraine, statements by Infrastructure Minister Vladyslav Kryklyi, 2030 National Economy Strategy of Ukraine.

The comparative analysis shows that the key subject changes envisaged by the EGD in this sector are generally **mirrored in Ukraine's plans and priorities**. However, the issue of switching over to rail and inland water transport is not recorded in any strategic documents. Moreover, to realize the outlined goals, Ukraine will need to seriously reform its transport sector, in particular, in accordance with its commitments under the EU-Ukraine Association Agreement.

The comparison of the **EU's and Ukraine's agendas** in this area indicates **substantial differences**.

Here, the **main priorities of the Government of Ukraine** include:

- Open a competitive rail market;
- Modernize regional airports and increase the passenger traffic through the regional airports of Ukraine;
- Construct, reconstruct, and overhaul motor roads;
- Modernize urban electric transport facilities;
- Improve transport safety.

So, Ukraine's reform agenda is rather focused on transport infrastructure development and improvement of safety, whereas the EU looks at the

sector from the angle of reducing its impact on climate change.

The transport area is part of Ukraine's commitments under the Association Agreement, in particular, concerning legislative approximation. However, the progress in approximating to European standards in the transport area is minimal.

**Thus, Ukraine's potential for involvement in the EGD in this area is limited and primarily related to the electric transport development and the use of the significant potential of rail transport.**

The involvement potential creates conditions for a few **flagship initiatives**:

- **"Development of electric vehicle and infrastructure."** An initiative like this is needed because of the uptrend in purchasing electric vehicles in Ukraine. The proper development of electric transport requires a legal framework for the creation of necessary infrastructure and investment incentives;
- **"Clean cities."** This flagship initiative both meets Ukraine's current priorities and reflects the EGD goals. It aims at developing sustainable mobility practices in cities and other localities as well as implementing and using transport and infrastructure with a lower carbon footprint. These objectives can be spelled out as reducing the carbon footprint of urban transport, developing smart mobility in the cities, transition to environmentally friendly transports, specifically public

electric transport, private electric vehicles, and bicycles, and developing a necessary infrastructure (charging stations, bike lanes, parking lots, etc.). It can also include a component on transport safety;

- **"Smart mobility."** This initiative could include the implementation of intelligent transport systems and the development of cybersecurity and digital infrastructure systems in Ukraine compatible with what has been developed in the EU. The initiative would be useful for implementing not only advanced vehicle technologies but also digitalization of the transport sector and traffic management.



## Biodiversity



**The potential** for Ukraine's involvement in the EGD in the biodiversity area is quite high in view of the same movement vectors, the ambition of changes, the similarity of agendas, and the coverage of this area by the Association Agreement.

### Recommended flagship initiatives:

- NATUTRA 2000+
- Conservation of biodiversity in cities
- Support for the synergy of agricultural and environmental policies of Ukraine

**Measurable indicator:** the share of protected areas in the total area.

The biodiversity sector is represented in the European Green Deal by a number of indicators, such as the share of nature reserves, tree planting, the use of pesticides, etc. Especially relevant for Ukraine in this context is the indicator of the protected areas share.<sup>13</sup>

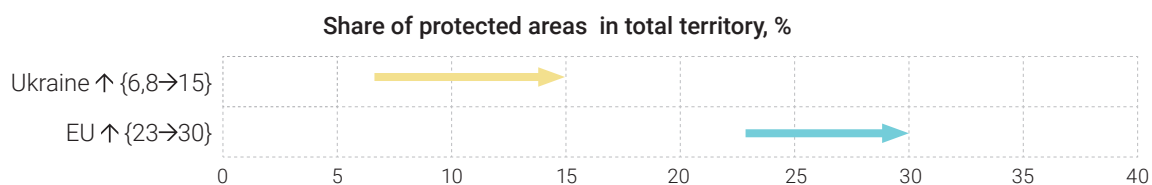
The comparative analysis using the measurable indicator of biodiversity protection shows that both Ukraine and the EU are planning to go in the **same direction**: increasing their protected areas. The **ambition levels** of Ukraine's and the EU's biodiversity policies are commensurate (it

is worth noting that the EU has much more ambitious plans to expand their protected water areas and increase the share of the territory of strictly protected areas). At the same time, it is clear that **Ukraine lags** on the key indicator: the share of protected areas in the country's total area. Even if Ukraine attains its 15% target by 2030 (as provided for by the 2030 Strategy of the State Environmental Policy), it will nevertheless fail to reach the EU's current status (23%).

**The bottom line is that both Ukraine and the EU have a common movement vector and ambition, but the former's complete synchronization with the latter in terms of the protected area share is unrealistic.**

The EU in its European Green Deal assigns a special part to the issue of biodiversity. The EU's policy focuses on such key changes as an increased share of protected areas, bringing nature back to agricultural land, increased biodiversity in urban

<sup>13</sup> This indicator is not typical for the EU, which makes a distinction between the protected areas on land and sea and so does not use the generalized indicator as a rule. On the other hand, there is no data in Ukraine on its terrestrial and marine protected areas separately, and the indicator of the share of the Nature Reserve Fund (Ukraine's protected areas network) in the territory of the country is used for planning and statistical purposes. Therefore, for the purposes of mapping, we chose the generalized indicator for both the EU's and Ukraine's total areas.



Data: 2030 National Environmental Strategy, State Statistics Service of Ukraine, EU Biodiversity Strategy, World Bank (2018/2019; 2030).

**Table 7. Comparative analysis of key changes in the Biodiversity sector**

Key changes in the sector envisaged by the EGD	Corresponding changes planned in Ukraine
Increasing the protected areas, including strictly protected areas, and restoring damaged ecosystems.	Expanding the Nature Reserve Fund areas. Reducing the losses of biological and landscape diversity, in particular, by improving the principles of eco network formation, expansion, and sustainable use, as well as by conserving unique natural landscapes; conserving and restoring the numbers of natural flora and fauna species.
Bringing nature back to agricultural land.	Regulating land allocation issues to withdraw degraded and erosion-dangerous plots from the arable land stock, afforest them and preserve; restoring peatlands, wetlands, meadows, steppes, and other valuable natural ecosystems.
Increasing biodiversity in urban areas.	Reducing the negative environmental impact of urbanization processes and discontinuing the environment destruction in cities, in particular, by preventing unwarranted elimination of green plantations within city limits.
Afforestation and forest conservation and restoration in Europe (both increasing the number of forests and improving their quality).	Increasing the forest cover.
Conservation of marine resources.	Regulating commercial catch of aquatic living resources within Ukraine's territorial waters of the exclusive (marine) economic zone, continental shelf, and inland waters. Reducing the anthropogenic impact on the ecosystems of the Black Sea and the Sea of Azov.

Source: EU Biodiversity Strategy, Communication "European Green Deal," 2030 Strategy of State Environmental Policy of Ukraine, Decree of the President of Ukraine No. 111/2021.

areas, forest restoration, and marine conservation.

**The comparative analysis** shows that the key subject changes envisaged by the EGD in this sector are generally mirrored in Ukraine's plans and priorities: expansion of protected areas, protection of biodiversity in cities, restoration of forests, and conservation of marine resources. However, the issue of biodiversity in Ukraine's urban areas mostly concerns the preventing destruction of green areas within city limits.

The comparison of general **biodiversity agendas of the EU and Ukraine** shows that they are **very close**. Besides the task to develop a 2030 Biodiversity Strategy of Ukraine, the **Government's main priorities** in this sector include:

- Conserve and restore the status of key ecosystems;
- Increase the share of protected areas by expanding the existing and establishing new Nature Reserve Fund areas and nature parks;
- Form Emerald Network areas and take steps on their conservation and management;
- Implement a long-term forestry sustainable development policy. Take an inventory of forests in Ukraine and take steps on their conservation;
- Reform the fishing industry of Ukraine.

The biodiversity sector is part of Ukraine's commitments under the **Association Agreement**, in particular, regarding the implementation of two basic nature-protection directives of the EU: the Birds Directive and the Habitats Directive.

**Thus, Ukraine's potential for involvement in the EGD in the biodiversity area is quite high in view of the same movement vectors, the ambition of changes, the similarity of agendas, and the**

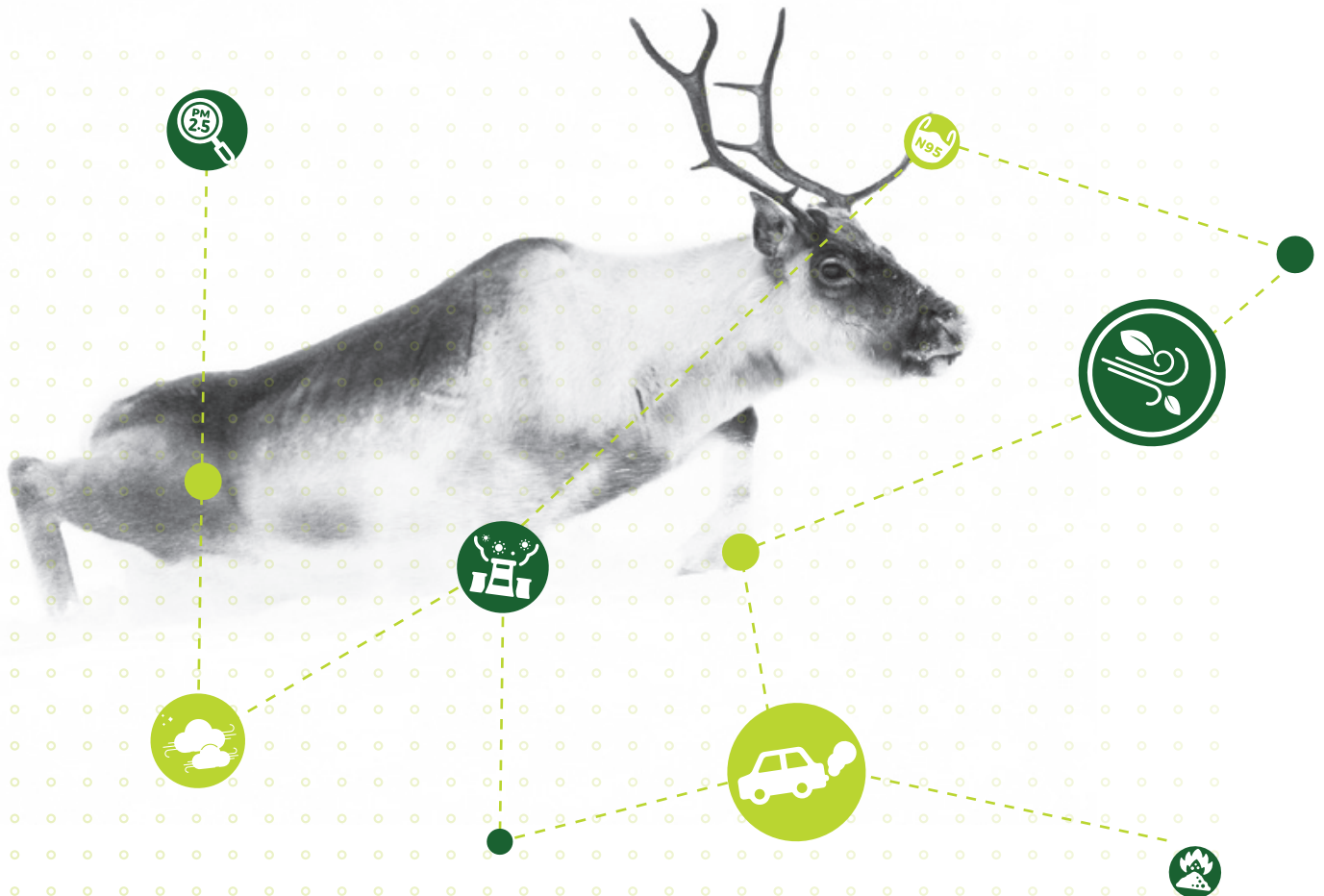
### **coverage of this area by the Association Agreement.**

The high involvement potential creates conditions for a number of **flagship initiatives**:

- **“NATURA 2000+” – Ukraine's accession to NATURA 2000, a network of protected areas in Europe.** Such an initiative should include steps toward ensuring the exhaustive implementation of the EU Birds and Habitats Directives by Ukraine, establishing an additional cluster within NATURA 2000 for Ukrainian protected areas, tentatively code-named NATURA 2000+, and, what is important, attracting EU funds for these purposes in accordance with provisions of the said directives. The initiative could be founded on the current obligation of Ukraine under the Association Agreement to implement these directives. It would help Ukraine eliminate the lag in the Nature Reserve Fund area and help the EU take care of the continent's nature and strengthen its global leadership in biodiversity protection;
- **“Conservation of biodiversity in cities.”** An objective of this initiative would be for Ukrainian cities to join European Platform for Urban Greening to share best practices and experience. In this way, it would facilitate cooperation between cities of Ukraine and the EU and help improve environmental policies in Ukrainian cities in the context of shifting their focus from saving green areas to bringing biodiversity back to the cities and adapting to climate change;
- **“Support for the synergy of agricultural and environmental policies of Ukraine.”** The initiative could aim at supporting Ukraine in

restoring natural ecosystems on degraded farmlands and developing economic tools for such transformations. It would also back up the implementation of the recent decision of the National Security and Defense Council "On challenges and threats to the national security of Ukraine in the area of environment and top-priority measures on their neutralization."

Cross-cutting support mechanisms for such initiatives could include Ukraine's accession to the LIFE program and enhanced EU-Ukraine scientific cooperation, including that within the Horizon framework.





**The potential for Ukraine's involvement in the EGD** in this area is high, although its realization requires capacities (human, legal, institutional) that are presently absent in Ukraine.

**Recommended flagship initiative:**

- Capacity building of Ukraine to finance the green transition.

The issue of financing takes a special place in the European Green Deal, as it defines the mechanisms for achieving the EU's climate neutrality by 2050 and providing funds for the implementation of the European Commission's priority reforms. The key changes the EU's policy focuses on include increased investment in green projects, a mandatory climate-related allotment in all EU programs (25%), a just transition mechanism, climate and environmental risks integrated into the financial system, and "greening" national budgets.

A proper comparative analysis of this issue is impossible. Ukraine faces similar challenges. For example, a very acute problem is the coal industry restructuring, which should be accompanied by a complex of measures to mitigate social and environmental consequences of coal mines liquidation/mothballing and socially transform the mine shutdown regions up to the best European practices. At the same time, data on the green portion of the budget is not collected in Ukraine, and the National Bank of Ukraine has just begun implementing the principles of environmental

friendliness and social responsibility in the country's financial system. Ukraine has a high potential for green investment, climate investment in particular. However, there is practically no carbon pricing system.

**Thus, the potential for Ukraine's involvement in the EGD in this area is high, although its realization requires capacities (human, legal, institutional) that are presently absent in Ukraine.**

Taking into account the above conclusion, the key flagship initiative should be **"Capacity building of Ukraine to finance the green transition."** It could address the following issues: transparent climate budgeting, carbon pricing, green investment, targeted financing of green transition, climate-friendly purchasing, and incentive mechanisms for private green investment.

# MAIN CONCLUSIONS AND RECOMMENDATIONS

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**The European Green Deal provides a wide space for mutually beneficial synchronization of Ukraine's policies and legislation with respective policies and legislation of the EU as well as for cooperation between Ukraine and the EU in the EGD's key areas.** Despite certain results of the comparative analysis of movement progress and vectors and political agendas in various areas of the EGD, it was possible to identify potential flagship initiatives for each of the areas. These initiatives might be laid down into the basis of a future EGD Roadmap between Ukraine and the EU and serve as pinpoint cooperation initiatives or enhance existing cooperation, in particular, in the context of implementing the EU-Ukraine Association Agreement.

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**Measurable indicators are a good evidence base for comparing Ukraine's and the EU's development vectors on the way of reaching some EGD target or other.** However, such targets are not available in all of the EGD areas, and for some of the European indicators, there are no targets or even current data in Ukraine, which makes a comparison and consequently determination of a cooperation potential difficult. Data and/or targets on the application of antimicrobials in stockbreeding, food waste, green jobs are examples of such indicators, to name just a few.

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**Often, Ukraine has a common movement vector with the EU but much lower starting positions,** and so is unable to catch up with the EU even having ambitious goals. This is the case, in particular, with biodiversity in the context of increasing the share of protected areas in the total area and with green agriculture in the context of increasing the share of land under organic farming.

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**The key changes envisaged by the EU in its instruments that introduce and implement the EGD are either fully or partially reflected in Ukraine's strategic documents for most sectors** (the Government's programs, action plans, strategies, etc.). The green transition financing is the only one practically unrepresented in the plans of Ukraine. Still, in many areas where Ukraine's plans mirror those of the EU, there is an obvious situation when the EU is planning to implement changes in already existing mechanisms or legislation, whereas Ukraine is only making attempts to implement such mechanisms or legislation. This is the case, for example, with the emissions trading system and waste management.

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**The comparison of the EU's and Ukraine's agendas in the EGD's areas often shows a mismatch on which issues are most relevant in a sector.** This tendency is most critically obvious in the energy and transport areas when the agenda is rather dominated by the issues of energy security and infrastructure development than decarbonization of the sectors, which is the main trend in the EU.

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**The issues covered by the EGD are mostly reflected in the EU-Ukraine Association Agreement.** This, on the one hand, allows better synchronization with the EU's relevant policies and legislation (making use of the Association Agreement's potential), and on the other hand, encourages a more effective implementation of the Agreement itself.

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**The recommended flagship initiatives concern various cooperation levels between Ukraine and the EU.** The policy paper suggests strategic partnership initiatives, practical pinpoint initiatives, and municipal level initiatives. Although the EGD is among the important strategic priorities of the Government of Ukraine and is discussed at the top level, the implementation of the municipal-level initiatives and those addressing specific pinpoint problems would allow acting right now, often without any high-level political bilateral arrangements. It is the suggested ideas of flagship initiatives that are our main recommendations based on this study.

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# ANNEXES

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## Annex I. List of flagship initiatives

### Climate change:

- (1) Climate-neutral communities
- (2) Climate awareness of the citizens of Ukraine
- (3) Climate governance architecture

### Energy and energy efficiency:

- (4) Cooperation on “green” hydrogen and other renewable gases
- (5) Ukrainian “wave of renovations”
- (6) RES at the local level
- (7) Combating energy poverty
- (8) Transformation of coal regions (fair transition)

### Green agriculture:

- (9) Stimulating the development of climate-oriented agriculture (in particular, organic farming, low-till technologies, etc.)
- (10) Sustainable consumption and healthy diets
- (11) Reducing food and food waste losses
- (12) Cooperation to digitalize the agriculture

### Industrial policy:

- (13) Circular industry and waste
- (14) Stop greenwashing
- (15) Ukraine’s participation in the EU industrial ecosystems and green alliances

### Zero pollution:

- (16) Sustainable chemicals
- (17) Zero pollution in cities
- (18) Single European monitoring area

**Transport:**

- (19) Development of electric vehicles and infrastructure
- (20) Clean cities
- (21) Smart mobility

**Biodiversity:**

- (22) NATUTRA 2000+ – Ukraine's accession to NATURA 2000, a European network of protected areas
- (23) Conservation of biodiversity in cities
- (24) Support for the synergy of agricultural and environmental policies of Ukraine

**Financing green transition:**

- (25) Capacity building of Ukraine to finance the green transition

**Annex II. List of flagship initiatives at municipal level**

- (1) Climate-neutral communities
- (2) Climate awareness of the citizens of Ukraine
- (3) RES at the local level
- (4) Zero pollution in cities
- (5) Clean cities
- (6) Conservation of biodiversity in cities