4.7. HOUSING, RECONSTRUCTION AND BUILDING MATERIALS

4.7.1. Current situation and sector role

HOUSING

The total reconstruction and recovery needs are estimated at

USD 80.3 billion

for the 10 years from 2024–2033

Over 10% of the total housing stock either damaged or destroyed and close to 2 million households affected, housing continues to be one of the most impacted sectors. Given the sheer volume of damage to the housing sector and the resulting needs and negative impact on prolonged displacement, the GoU, including local authorities, as well as international partners and donors have prioritised housing recovery and building back better since the onset of the war. Thus far, the housing sector has incurred an estimated USD 55.9 billion in damages.

WATER SUPPLY AND SANITATION SERVICE

Since the onset of the war, the water supply and sanitation sector has experienced damage and losses and has struggled to provide services in difficult circumstances. The ongoing fighting and attacks on critical civil infrastructure have significantly affected water supply and sanitation service provision. In addition, the power outages and problems with electricity supply have significantly affected service delivery throughout the country.

The total reconstruction and recovery needs are estimated at

USD 11.1 billion

for the 10 years from 2024–2033

MUNICIPAL SERVICES

Continued damage to communal infrastructure has widened gaps in service delivery and has further strained the capacity of local governments. Prior to the war, service provision of utilities and infrastructure across all regions was irregular and had low coverage rates. The solid waste management sector was especially in need of urgent investment and reforms. The gaps in infrastructure and service delivery can also be seen in commonly delayed repairs to local roads. Central heating systems, however, had high penetration (about 47%), particularly in Ukraine's larger cities. Centralised heat supply systems undergo significant destruction as a result of regular shelling and lack of electricity, which significantly hinders the life of large cities.

The total reconstruction and recovery needs are estimated at

USD 11.4 billion

over a period of 10 years

41.6% **In 2023, construction production and services output increased by 41.6% in hryvnia terms (25.2% in USD) compared to 2022 but did not reach the pre-war level even in hryvnia terms (adjusted for inflation)**

At the same time, the shares of residential and non-residential construction works in the total volume of construction production and services are 13.7% and 25.6%, respectively. Given the significant destruction and damage to real estate (including residential) due to the full-scale invasion of Russia, the volume of construction products produced in the years following the war's end, according to market experts, is likely to exceed the pre-war figure of USD 6.6 billion.

The construction materials market has significant role in renovating housing stock and other real estate. In residential real estate construction, 60% of the total construction cost (depending on the complexity and type of the object) is related to the cost of construction materials. Considering the above, procurement of construction materials from outside Ukraine can significantly increase expenditure, as additional logistics and customs costs can be high. In addition, there is a significant demand for construction materials from private households whose housing has been completely destroyed, estimated at approximately 59 million square metres.

Since the beginning of the full-scale war and until 2024, the construction materials industry has undergone several changes due to the occupation of Ukrainian territories, disruption of supply chains and military operations. According to «the Institute for International Economic Research», about 15% of building materials producers have suffered varying degrees of damage.

Restoration of these enterprises in the war is complicated, and the following are among the main reasons:

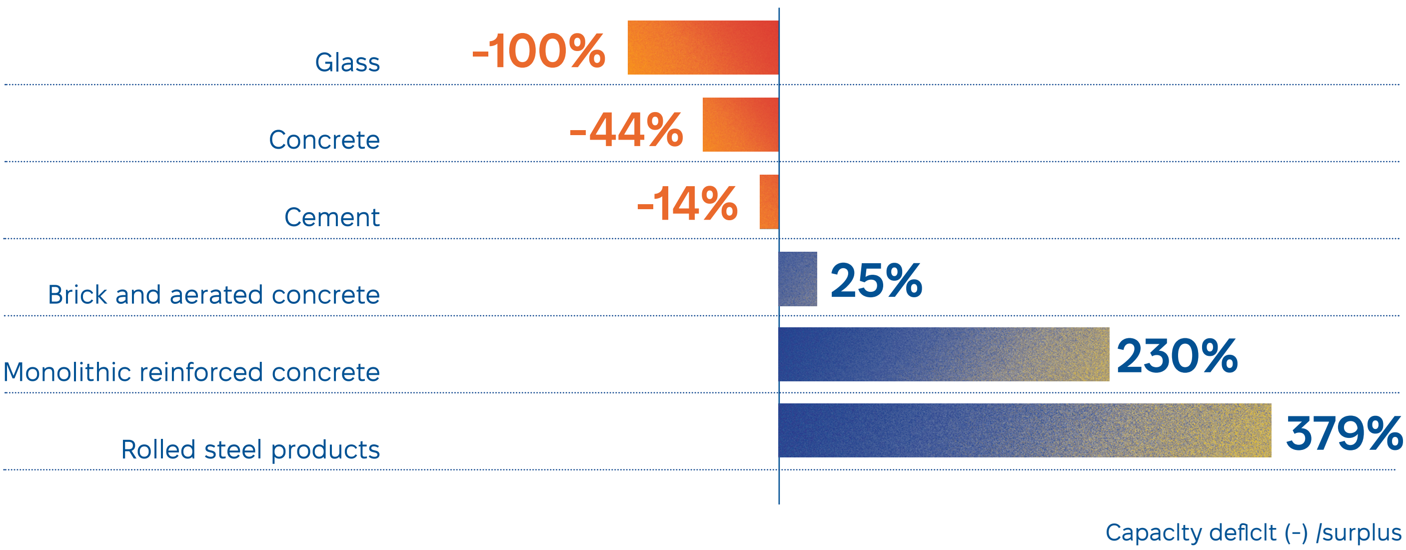
- **possible shortage of electricity supply**
- **expensive loans**
- **shortage of personnel**

Given the damage and/or destruction of domestic enterprises, experts say that the share of imported construction materials in the Ukrainian market has increased from 14% in 2021 to 23% in 2023, and the domestic construction materials market needs systematic support from the state.

Different sectors of the construction materials market are asymmetrically developed. The exact structure and volumes are unknown, as producers have the right not to report to conceal information from the enemy.

Based on the data of the State-Owned Enterprise Ukrpromzovnishekspertyza, it is possible to make judgments about the adequacy of the capacity of several key sectors to cover the needs during the recovery:

Figure 1: The balance of domestic demand and supply for building materials[1]



[1] SE Ukrpromvneshexpertiza, Interfax-Ukraine

GLASS PRODUCTION SECTOR

For example, the local market had almost no presence of the glass production sector. **According to the website construction-market.korfor.com.ua, as of the beginning of 2023, only 29 companies reported about their business activity within sheet glass production.** At the same time, the largest glass production plants, such as Lysychansk Proletar, Kostiantyniv Glassworks, Avtosklo, and Zaporizhzhia Glassworks, are located in eastern and southern Ukraine, where there are high risks of missile attack or seizure of territory and loss of business. Even before the war broke out, the Glass of Ukraine Association of Glass Industry Enterprises reported that the critical cost of energy resources was putting additional pressure on the producers' capabilities. According to the latest data, there is no any sheet glass produced in Ukraine.

CEMENT INDUSTRY

As of early 2024, the cement industry in Ukraine is capable of producing a maximum of 13.6 million tonns of products, with the possibility of expanding by 2.4 million additional tonns, according to the Ukrcement Association. This could partially cover demand during the post-war recovery, but the current demand is less than 10 million tonns per year. Before the war (2021), the industry was export-oriented, with Romania (67.0%), Hungary (15.6%), and Moldova (9.2%) being the main importers. The leading supplier of foreign cement was Turkey (90.5%). Today, the sector remains self-sufficient, and imports are mainly specialised types of cement that are not produced in Ukraine. The cement market is concentrated in the hands of a few companies, and as of 2023, according to forbes.ua, Cemark (14%), Dyckerhoff (32%), Ivano-Frankivsk Cement (44%), and Kryvyi Rig Cement (10%) held almost 100% of the market. Ivano-Frankivsk Cement has the largest plant in Ukraine. Only one of the remaining 8 plants in Balakliya was damaged during the invasion. Potentially, after the liberation of all territories, a cement plant in Bakhchisarai and 2 plants in the Donetsk region will join the market. Ready-mix concrete production is heavily dependent on cement as the main ingredient. Unlike the cement market, about 250 companies produce ready-mixed concrete. The cost of concrete has increased by 2-3 times on average compared to 2021.

ROLLED STEEL INDUSTRY

The aerated concrete market in Ukraine is quite large, with Ukraine ranking 5th in terms of production in Europe, according to the Inventure group. According to Pro-Consulting, over the past 3 years before the war, the market grew by an average of ~13%, which is attributed to the absorption of brick market share. Since the beginning of the war, the sector has fallen by almost half. Difficulties in business development during the war are similar to those in other sectors: low demand, mobilisation of men and the price of energy. Additionally, the rising cost of raw materials, which accounts for ~65% of the cost of aerated concrete, has an impact. The sector depends on cement producers, who have difficulties with production facilities and operation liquidity.

BRICK MARKET

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AERATED CONCENTRATE MARKET

The takeover of the brick market by the gas block is supported by a review by the Korfor analytical group, according to which ceramic brick production has declined by 17.3% in physical terms over the past 5 years. **At the beginning of 2023, 651 companies were registered as brick producers.** The current demand is covered mainly by domestic production of 1.5 billion bricks annually, but according to his estimates, the demand could grow by a multiple of up to 14 billion. There are 9 companies among the largest producers of different types of bricks in Ukraine: "Litos", "Land Brick", "DZBM", "Euroton", "Kerameya", "SBK", "Fahot","Silta Brick", and "Bila Tserkva Brick Plant".

The global market for building materials is actively growing, with an annual increase of approximately 3.9%, according to the expert group SkyQuest. China remains the largest local market, while the Indian market is experiencing the fastest growth. The largest segment is reinforced concrete, accounting for about 45%. Among the trends, analysts highlight two main ones: increasing the use of technologies in production and construction (including building information modelling, the use of drones in construction, 3D printing of buildings), as well as the growing popularity of modular constructions. In addition, the market for «green» building materials is actively growing, which as of 2023 amounted to USD 422 billion, according to Fortune Business Insights. With optimistic estimates, the market is expected to grow by about 15% annually. For the Ukrainian market, this may result in additional competition, as against the backdrop of tightening regulations in the production of building materials, foreign competitors may appear with more environmentally friendly and energy-efficient materials.

4.7.2. Overview and outlook of key reforms

Reform 1.

On December 16, 2015, the Cabinet of Ministers of Ukraine adopted a resolution "On determining the areas of activity in which the central executive authorities and the Security Service of Ukraine perform technical regulation functions", which identified the central body that will conduct technical regulation of the production of construction materials, this function is assigned to the Ministry of Community Development, Territories and Infrastructure of Ukraine.

Reform 2.

In mid-2020, the requirements for construction materials were updated, namely, the list of standards was amended by Order No. 153 "On Approval of the Lists of National Standards, Compliance with Which Gives Presumption of Compliance of Products with the Requirements of the Technical Regulations for Construction Products, Buildings and Structures". According to the law, construction products must meet the basic requirements set out in the Technical Regulations for the structures in which they are used, in particular, national «DSTU» standards and harmonised European «DSTU B EN» standards, building codes and must be marked with a national conformity mark. Only such products can be freely sold and used in construction in Ukraine.

Reform 3.

The Law of Ukraine, "On the Provision of Construction Products on the Market", adopted in 2020, came into force on January 1, 2023. The law regulates the organisational and legal aspects of declaring the characteristics of construction materials and putting them on the market. The adoption of this law marked the first preparatory stage for the implementation of Regulation (EU) 305/2011. Subsequently, the practical implementation of this standard will take place, which involves the adoption of standards for the purposes of the law, the preparation and accreditation of laboratories, and regulatory assessment bodies, as well as the designation of accredited laboratories and bodies. The full effect of the law was originally intended to take place at the beginning of 2023, but due to complications associated with the war, this implementation has been extended until the beginning of 2025. Overall, according to publicly available data, around 1300 standards in the relevant field have been implemented in Ukraine, but it is noted that not all necessary standards have been implemented yet.

Reform 4.

There is also the issue of construction waste. According to estimates by the Ministry of Environmental Protection and Natural Resources of Ukraine, the amount of demolition waste in Ukraine due to the military aggression of Russiathe russia is already comparable to the amount of solid waste generated in the country on average per year, which is about 10-12 million tonns. At the same time, there is no sufficient legal framework to regulate the implementation of recycling. So far, at least 2 acts regulating the management of this waste have been introduced during the war: The Law of Ukraine "On Waste Management" and the Resolution of the Cabinet of Ministers of Ukraine "On Approval of the Procedure for Waste Management Generated in Connection with Damage (Destruction) of Buildings and Structures as a Result of Hostilities, Terrorist Acts, Sabotage or Works to Eliminate Their Consequences and Amendments to Certain Resolutions of the Cabinet of Ministers of Ukraine".

Reform 5.

Another unresolved issue is the entry into force of Regulation No. 305 under the Law of Ukraine "On the Provision of Construction Products on the Market". The innovation obliges manufacturers of construction materials to conduct testing of their product in the relevant laboratories and meet many technical requirements to obtain a product safety label.

4.7.3. Advantages of industry

Given existing and potential logistics bottlenecks, local producers can meet most of the domestic demand in the construction materials sector. However, in some sub-segments of the sector, such as glass, PVC, cement, concrete, and mineral wool, there is not enough capacity to fully meet potential demand, and thus, companies in this segment are expected to have high utilisation and, accordingly, a shorter return on assets.

EXTRA JOBS, BUDGET CONTRIBUTIONS AND ENCOURAGEMENT TO RETURN IDPS

It is reasonable that the government, facing a budget deficit, encourages the development of domestic production. Companies that create added value in key areas will fill the budget and add value to the local market. Migration processes will generate a supply in the labour market and, during peak periods, seriously expand the staff. This will further encourage the return of some Ukrainians who have left Ukraine and/or are considered internally displaced.

ACCESSIBILITY OF RAW MATERIALS

As of 2024, Ukraine has lost significant territory and most of its mining industry. However, this industry is well developed, and most raw materials (clay, sand, stone) can be extracted in the territory controlled by the GoU. This is an important fact that will ensure the industry's sustainability, even in the changed environment, and can serve as a basis for further increasing economic activity in the sector.

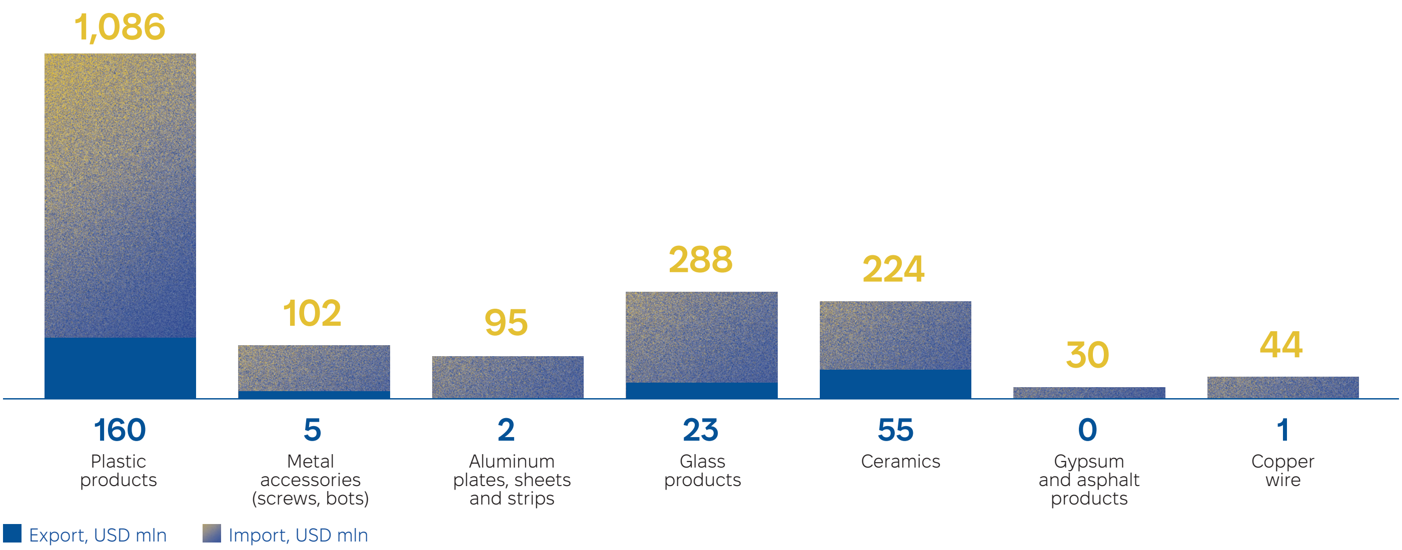
LOGISTICS

The extraction of raw materials and the production of construction materials in Ukraine allow for a complete cycle in the country's construction sector, thus avoiding the need for imports burdened by transportation costs and restrictions. Ukraine's transport and port infrastructure suffers from damage, but the current conditions allow the sector's products to be exported by road, rail and sea. Therefore, with a reliable supplier, it is possible to significantly reduce transportation risks across borders.

SUBSTITUTION OF IMPORTED FOREIGN BUILDING MATERIALS

As of 2024, the share of imported construction materials continues to increase. According to data from the state resource export.gov.ua, among the key selected materials for the results of 2023, the largest imbalance in favor of imports exists in: plastics and polymers (including construction products made of plastic, pipes, baths, showers, silicone, and other building products), metal fasteners (screws, bolts, nuts, etc.), glass products (excluding glass containers), ceramic products (including bricks), gypsum products, and asphalt. The potential deficit in the trade balance, which can be avoided, amounts to USD 1.6 billion.

Figure 2: Trade balance of building materials, USD million, 2023[2]



[2] Glass product - the group does not include glassware https://export.gov.ua/770-dashbord_shchodo_eksportu_ta_importu_ukraini Plastic products - The group includes only building materials and related goods

4.7.4. Prospects and potential for the sector

PUBLIC PROCUREMENT AS A TOOL TO STRENGTHEN THE NATIONAL PRODUCER

The first and key goal is the reconstruction of Ukraine, which is being carried out even while military operations continue on its territory. According to information provided by the «Destruction and Recovery Map» project , approximately 20% of damaged or destroyed facilities are already being repaired or restored. However, despite this, the authorities are using imports of foreign products as a stopgap measure, although a study by Ukrpromvneshexpertiza found that domestic production could meet the demand for reconstruction in several key sectors of construction materials. Market players are interested in limiting imports of construction materials to groups sufficiently developed in the local market. The government will be the leading consumer of construction materials in the coming years. In addition to constructing and restoring destroyed civilian infrastructure, military procurement for constructing fortifications will generate a significant demand for rolled metal and cement. Therefore, with the active support of the national producer, the domestic market is expected to see growth in the industry's enterprises due to increased demand through public procurement.

AMENDMENTS TO THE LEGISLATION IN THE FIELD OF CONSTRUCTION MATERIALS PRODUCTION IN TERMS OF ENVIRONMENTAL FRIENDLINESS

Another opportunity for development is to reduce the gap in environmental policy between Ukraine and the EU. In addition to the law "On the provision of construction products on the market," it is considered necessary to create state incentives for producing and using environmentally friendly materials. Unlike in the EU, Ukraine does not require disclosure of all information about the environmental friendliness of materials. Also, there are no additional benefits for producers of eco-friendly building materials and eco-friendly construction projects. A significant amount of construction waste, which continues to increase due to destruction, needs to be recycled. One possible tool is a direct requirement to use a certain percentage of recycled secondary building materials, as in Germany and Denmark.

CREATING ABSENT SECTORS FOR SELF-SUFFICIENCY

In the medium term, the lack of production of certain categories of construction materials in Ukraine should be resolved. According to Forbes, a segment such as the production of sheet glass is likely to be restored thanks to three new production plants. In addition, the City of Glass industrial park was created in the Kyiv region for similar purposes, where it is planned to create a whole cluster of this sector.

RECYCLING OF CONSTRUCTION WASTE

The large amount of construction waste in Ukraine is a challenge, as simply burying it can seriously impact the environment. Materials recycling will solve the pollution problem and provide additional construction materials for reconstruction. As a first step to start recycling, 3 waste recycling lines are planned to be set up in Kyiv, one of the most affected regions.

NEW CONSTRUCTION METHODS

Due to the extensive damage and limited budgets, households will likely choose modular houses. The market for these products was growing rapidly even before the war, but now they have the main advantages at a critical time - speed of construction and price. Therefore, in the future, the market for the production of SIP panels will expand for these houses, which, along with metal structures, are the main types of materials in the construction of modular houses. Another significant trend that may increase demand for concrete is the 3D printing of buildings. This industry is still in its infancy in Ukraine, but the speed of construction and high level of automation are advantages over traditional construction. According to Forbes, at the end of 2023, the first private house in Ukraine was built using 3D printing in Irpin. There is also a case of building a school in Lviv utilising this technology.