

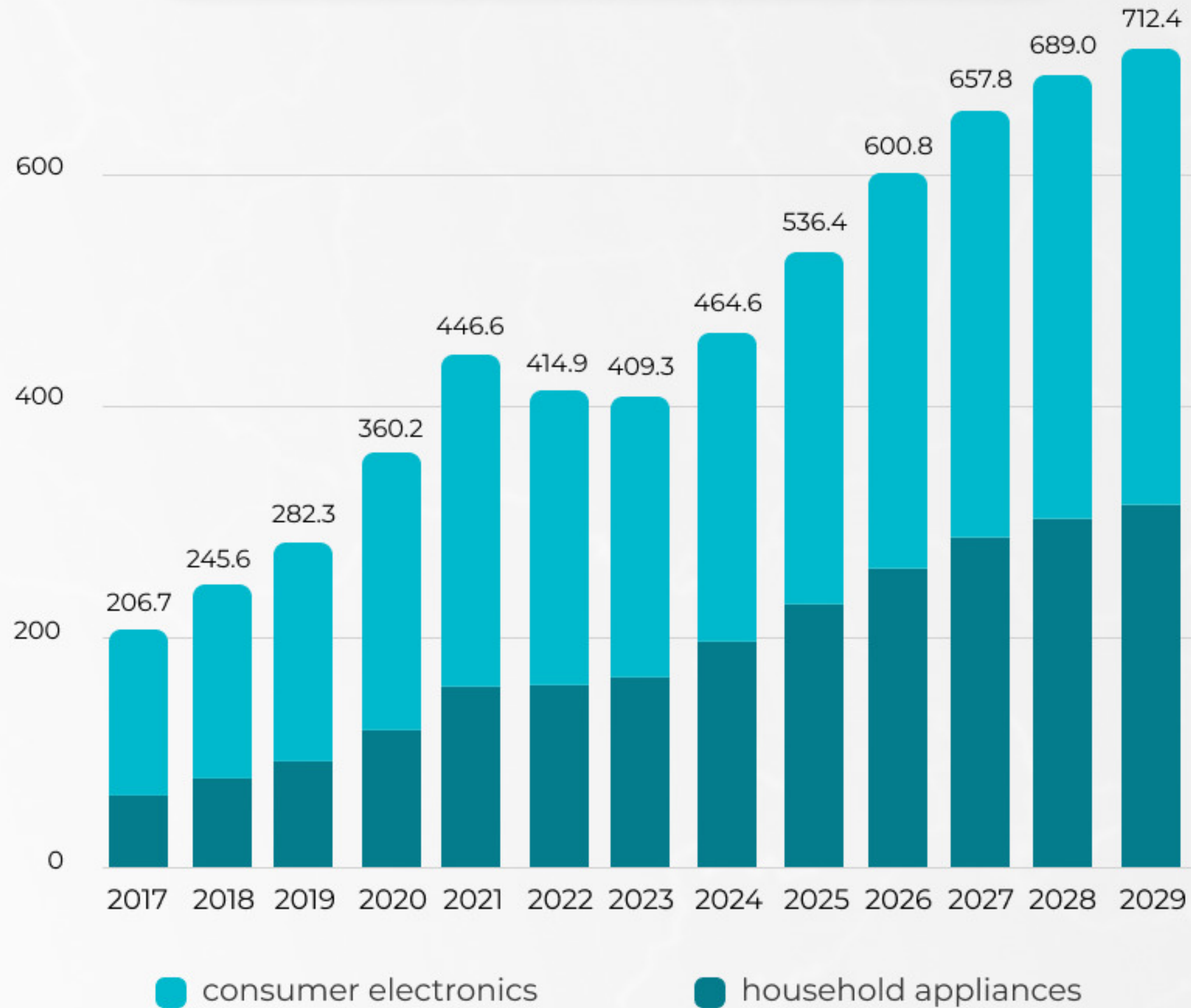
# INVESTMENT OPPORTUNITIES IN ELECTRONICS MANUFACTURING

# ELECTRONICS MANUFACTURING

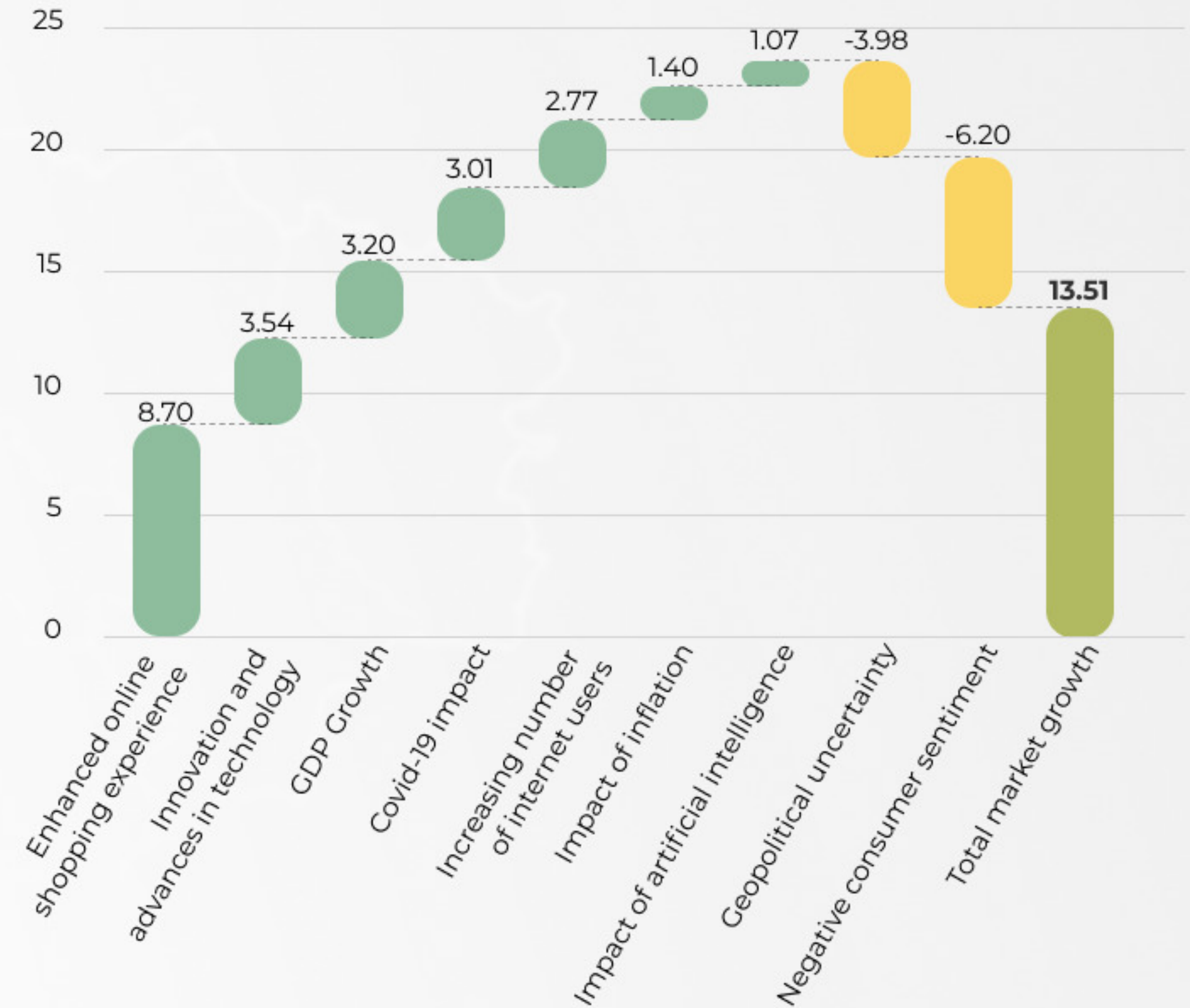
## Global macroeconomics



Electronics market revenue, bln USD



Revenue change market drivers, %, 2024\*



Sources: Statista

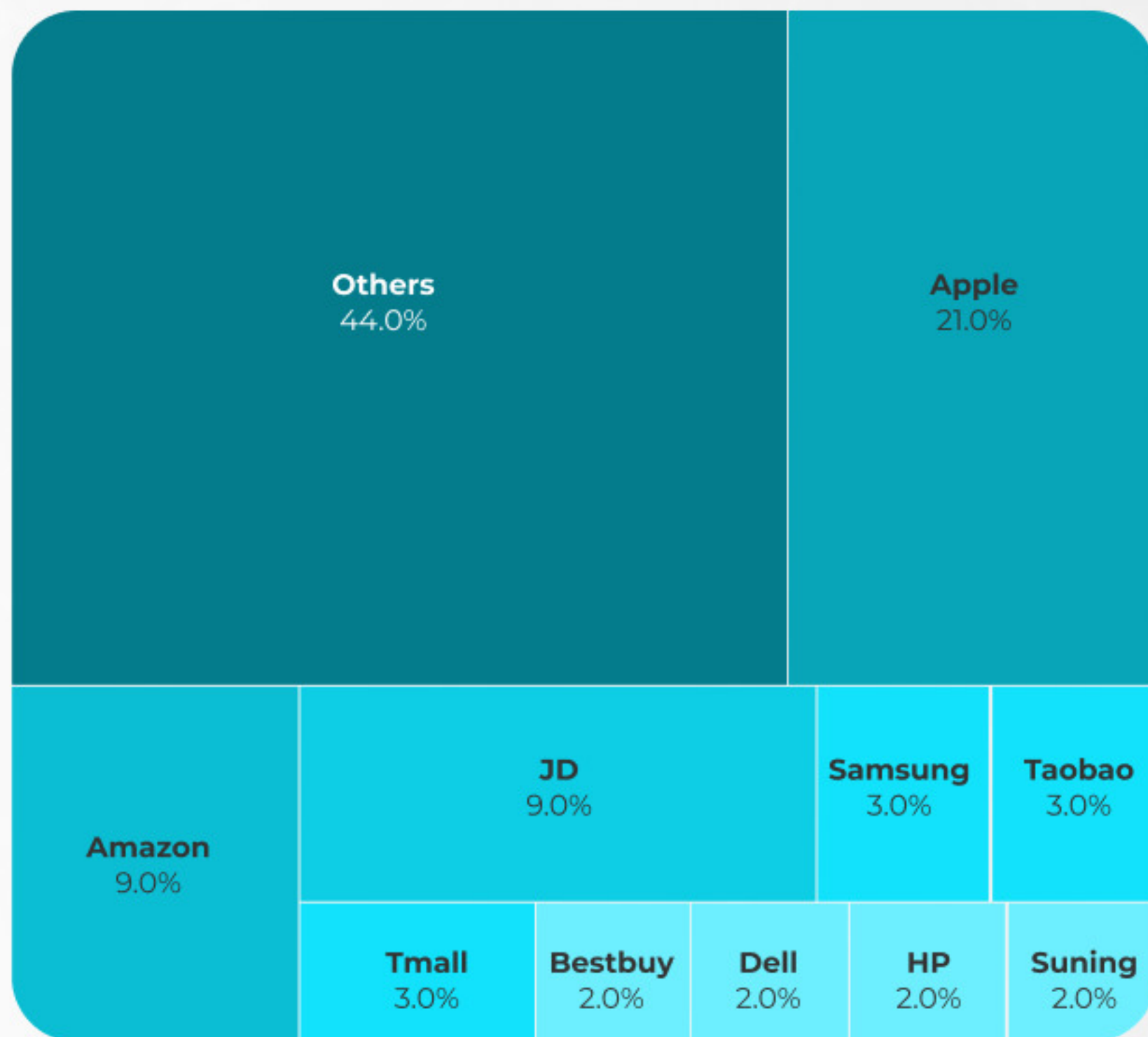
\* - The growth rates of the drivers in the market driver chart are calculated using USD values. Using a different currency will not affect their growth rates; however, the data might change due to conversion rates.

# ELECTRONICS MANUFACTURING

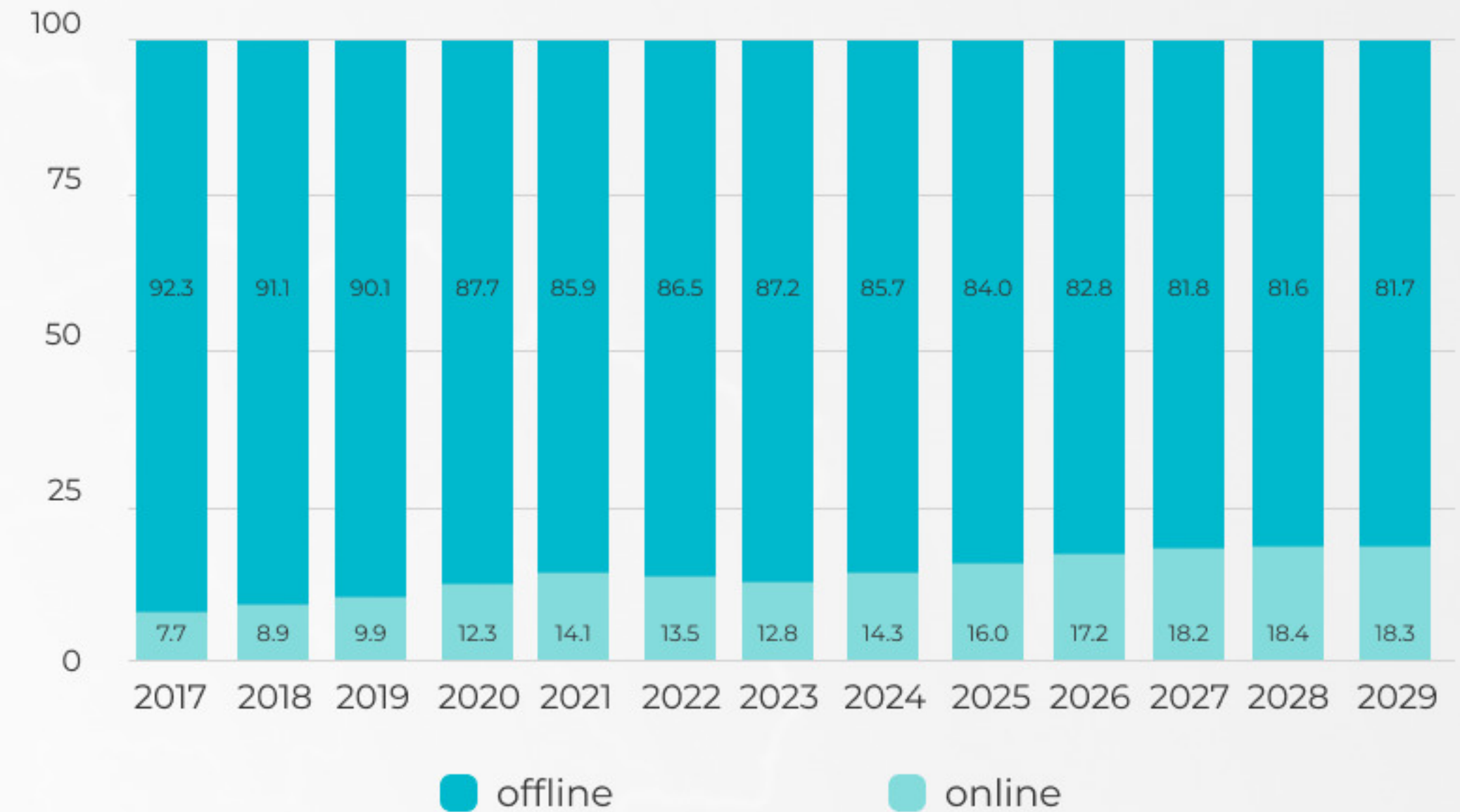
Global macroeconomics



Electronics market key players, 2022, %



Sales channels for electronics, %



**3 bln users**

expected in the electronics market by 2029

# ELECTRONICS MANUFACTURING

Global macroeconomics



**900+ bln USD**  
forecast of the global  
semiconductor  
industry by **2030**

**~80%**  
of sales



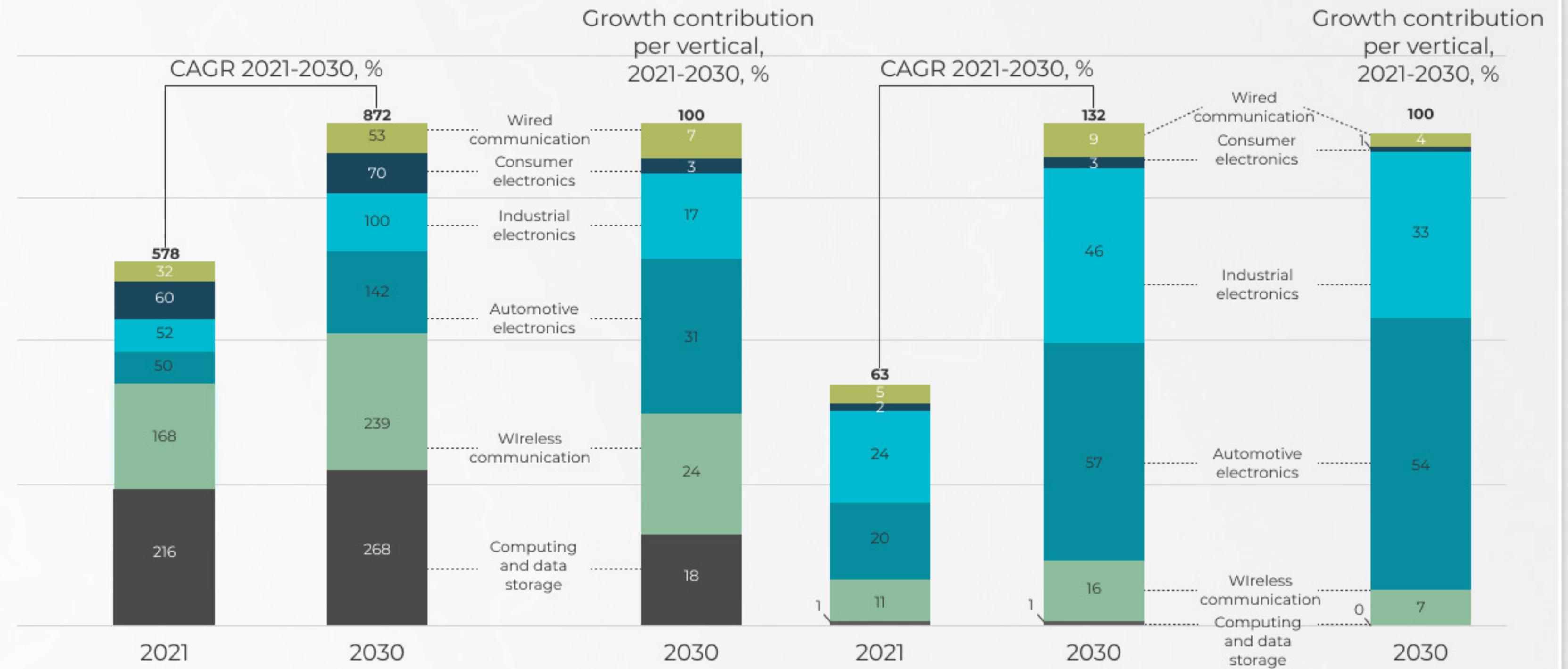
**~90%**  
of growth

in semiconductors will be  
driven by the automotive and  
industrial electronics sectors

## Global semiconductor market growth

Global semiconductor  
market value\*, bln USD

EMEA semiconductor  
market value\*, bln USD

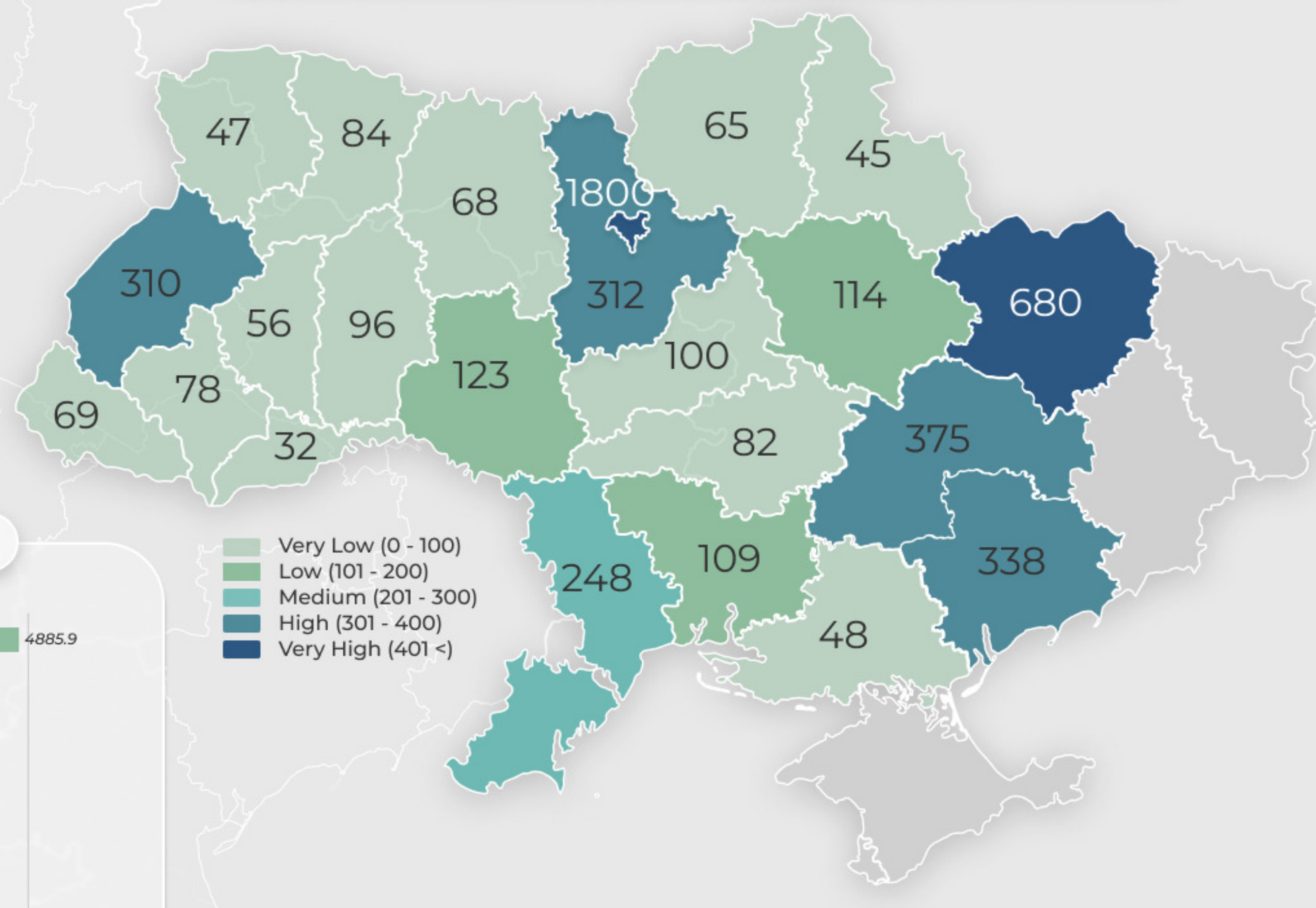
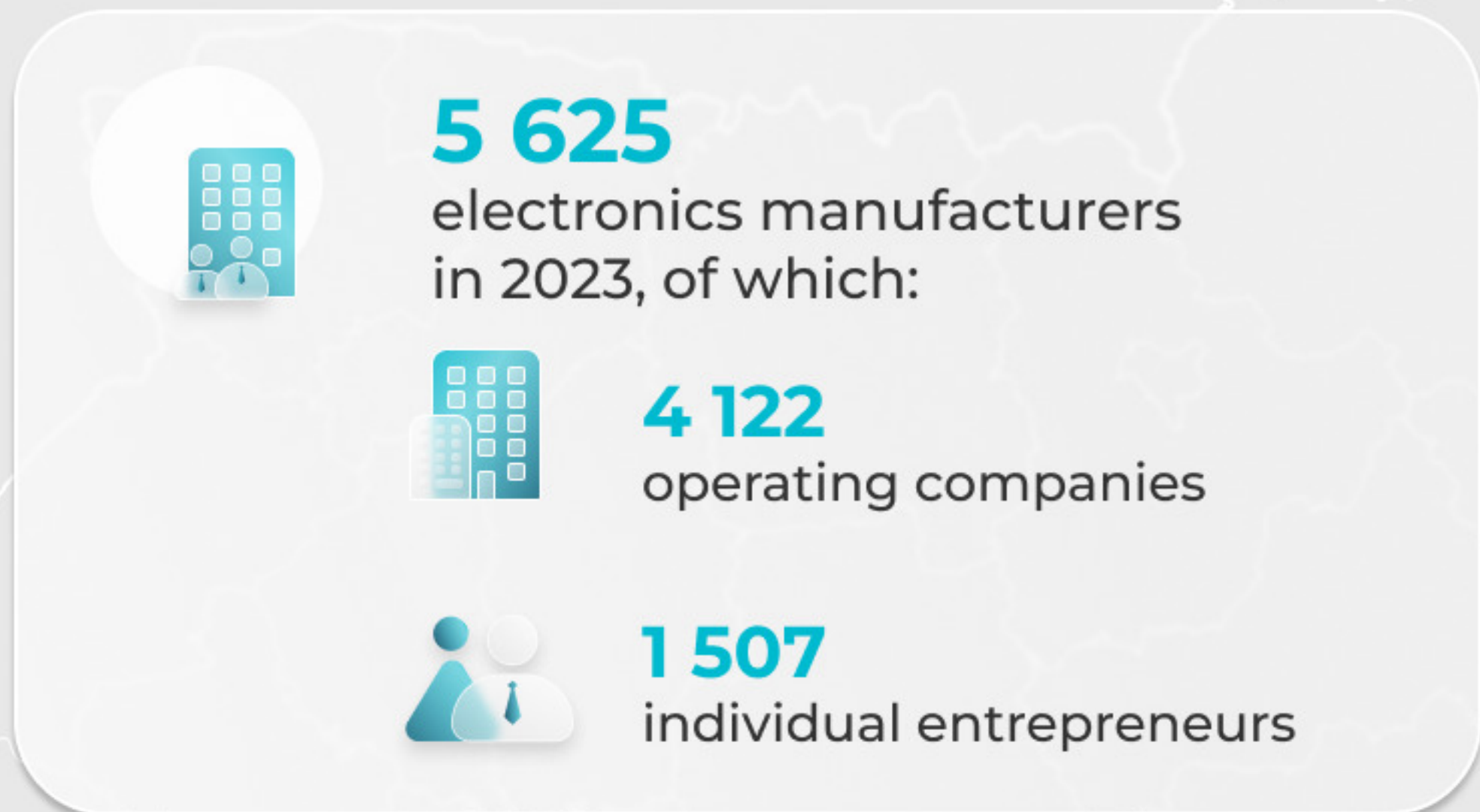


# ELECTRONICS MANUFACTURING

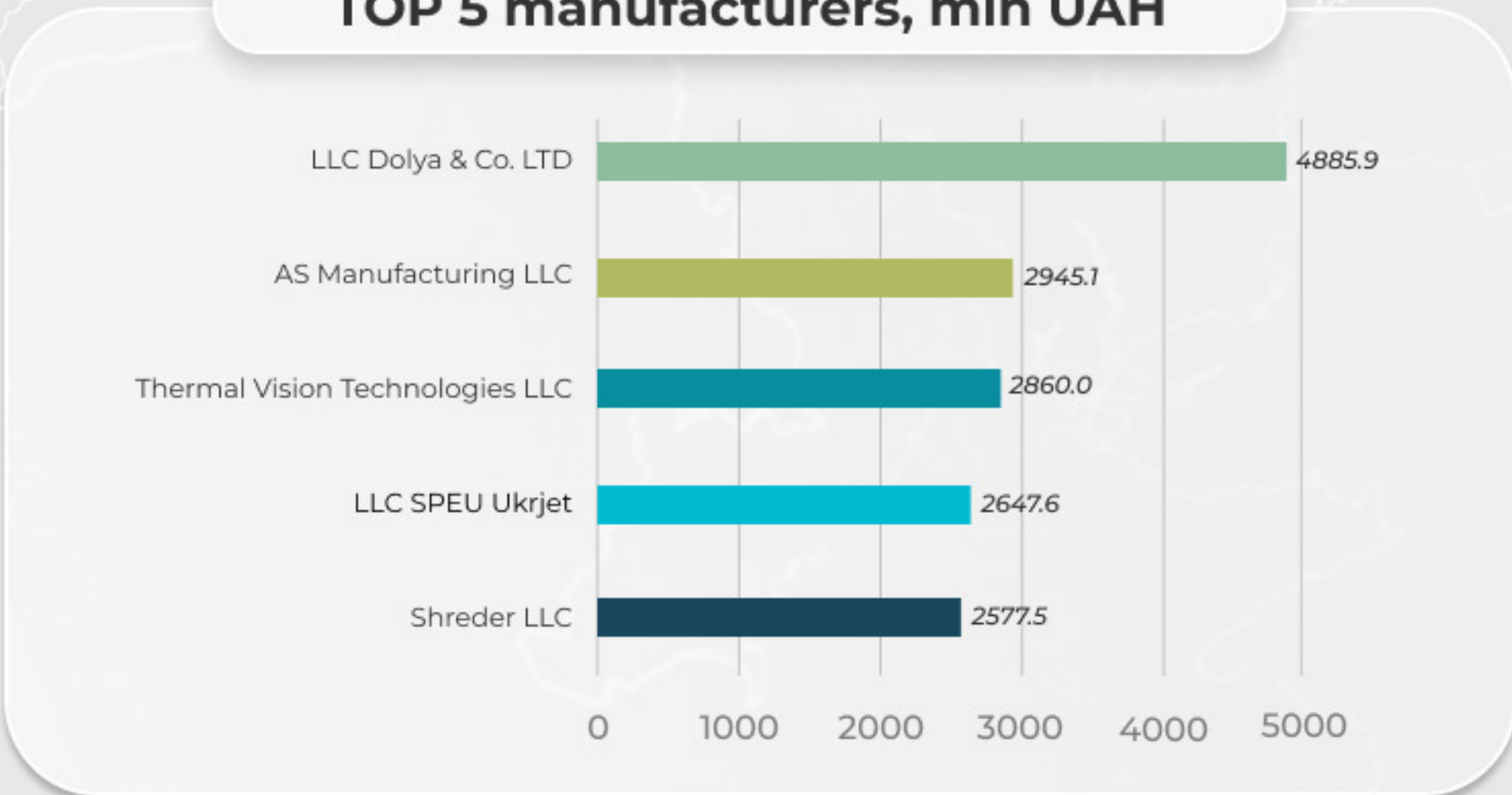


Ukrainian electronics manufacturers

## Regional breakdown of manufacturers, 2023



## TOP 5 manufacturers, mln UAH



# ELECTRONICS MANUFACTURING



## FDI snapshot

The decline in 2022 at the beginning of Russia's full-scale invasion of Ukraine was followed by a gradual recovery of the industry in 2023 despite the ongoing hostilities



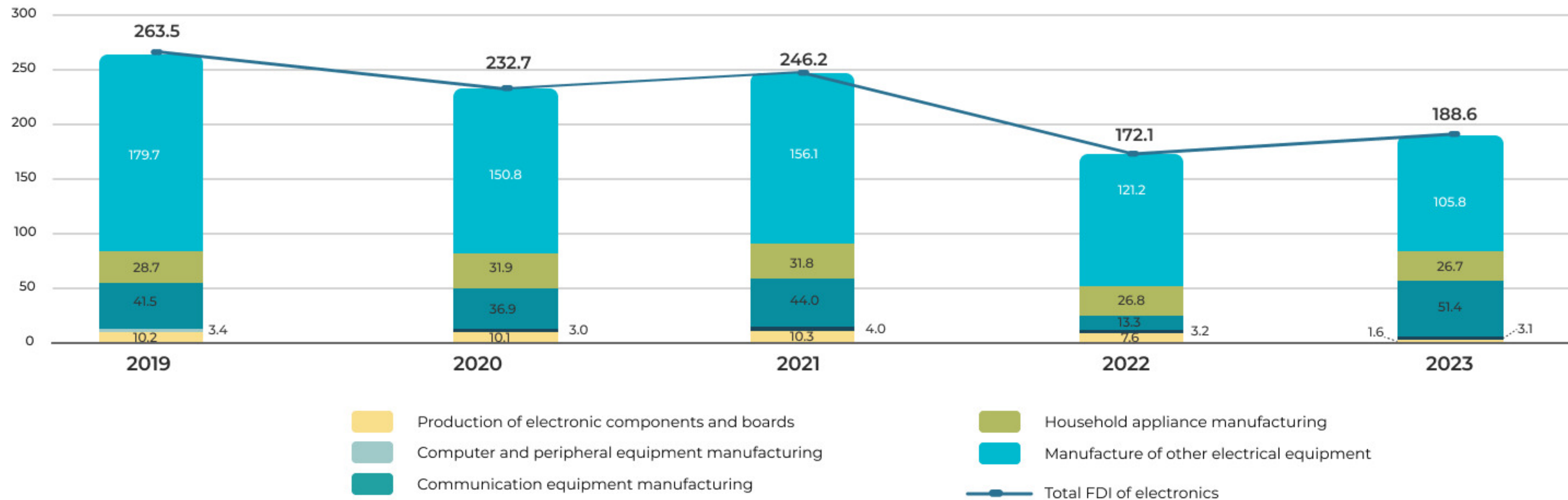
War risk insurance and government policies aimed at improving the investment climate contribute to the growth of the industry



### 3.2%

electronics production among FDI in Ukraine's manufacturing industry

FDI balances in Ukrainian electronics sector, USD mln

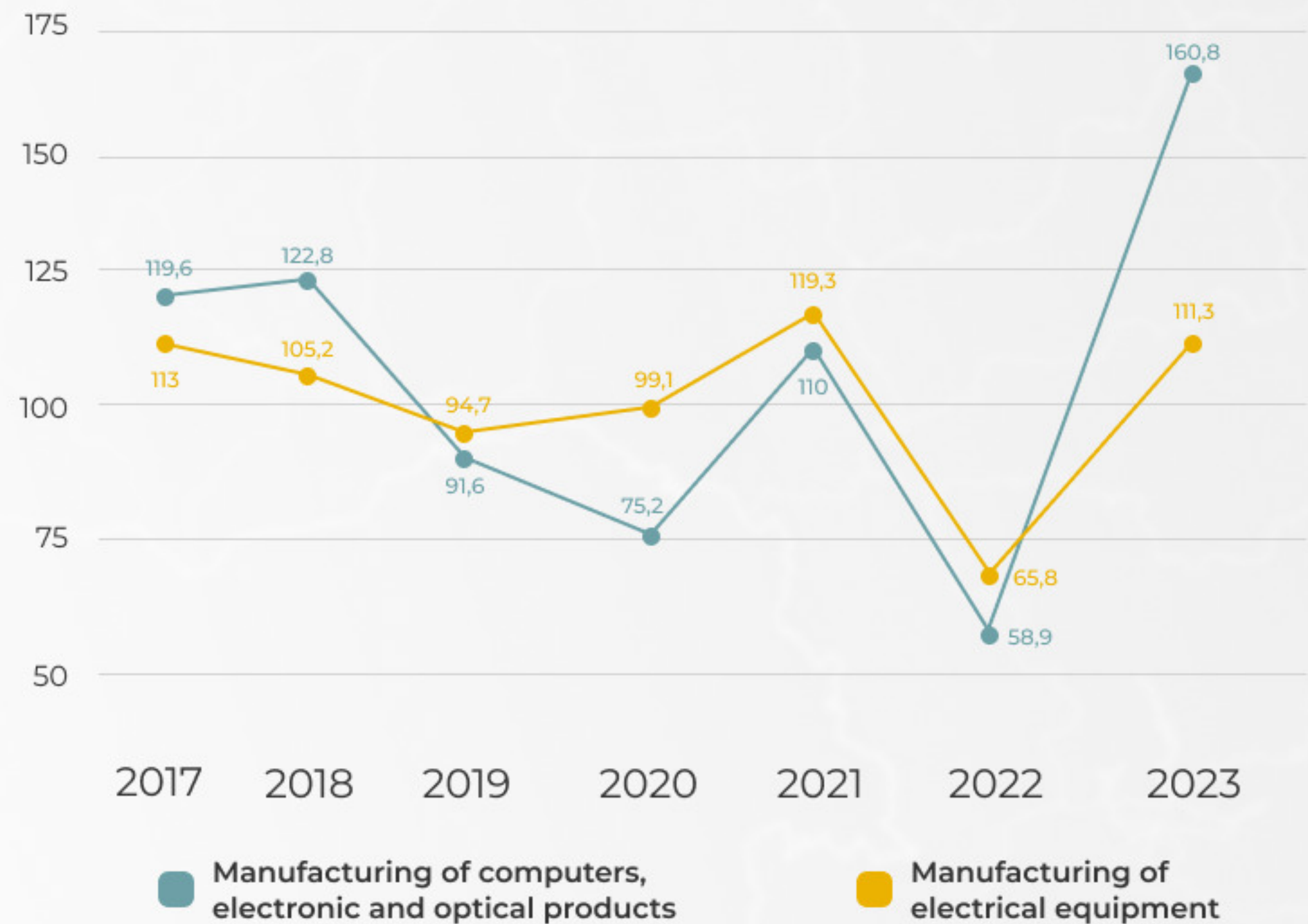


# ELECTRONICS MANUFACTURING



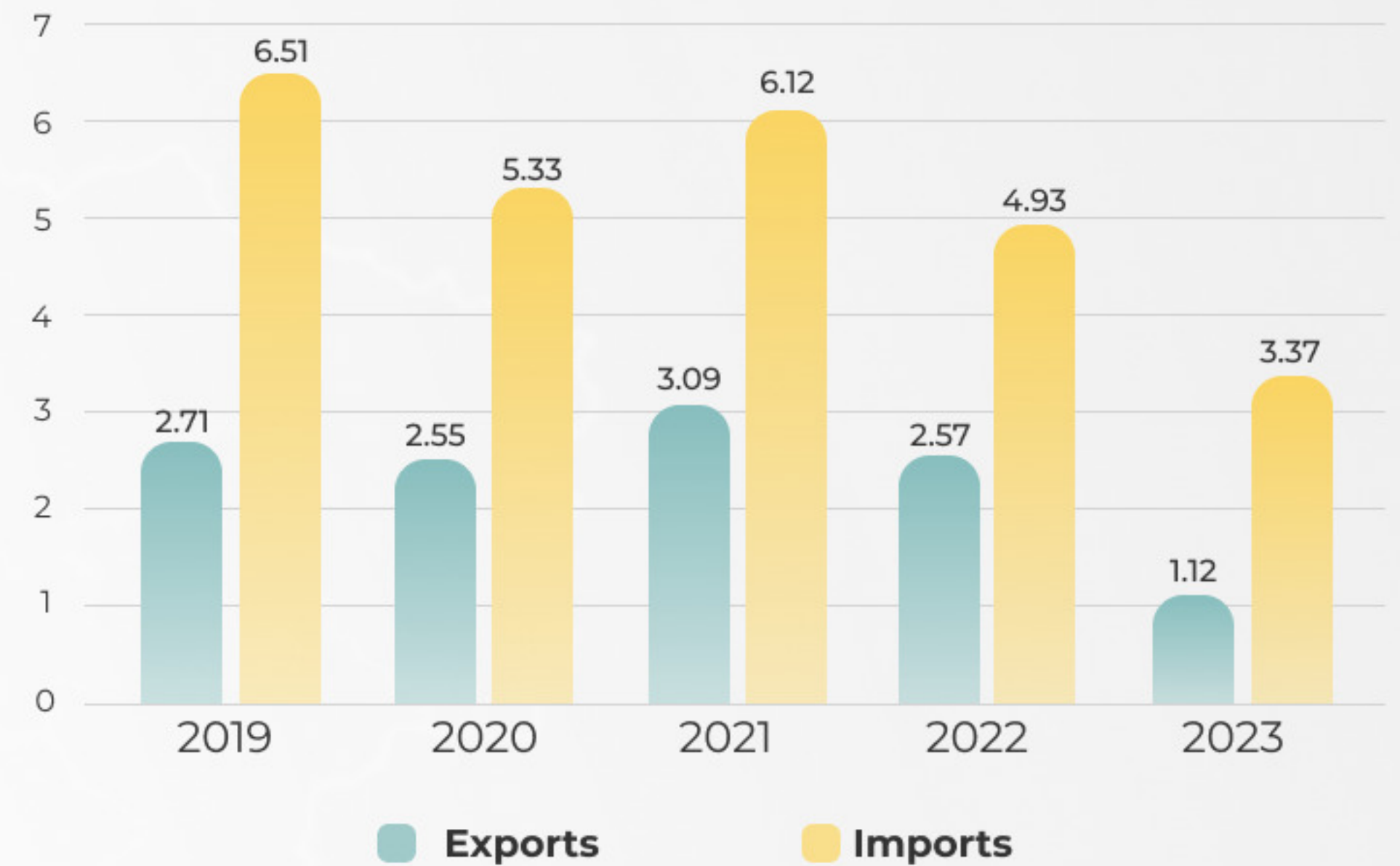
## Production and foreign trade

### Industrial production index by types of economic activity, %\*



\* - compared to the previous year, where 2016 = 100%

### Ukraine's trade turnover of electrical machines, equipment, their parts, 2019-2023, mln USD



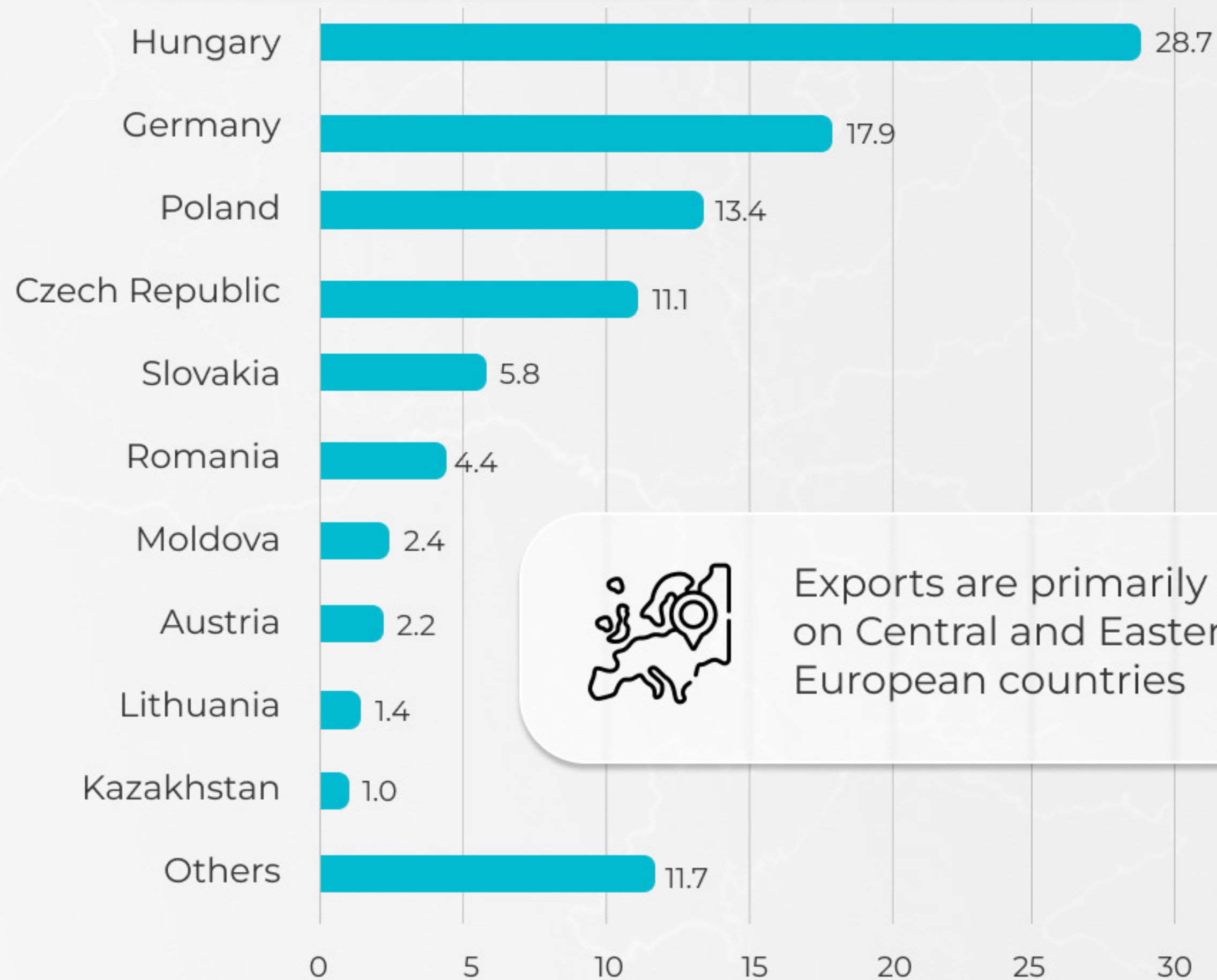
Electronics production in Ukraine demonstrated unstable dynamics in 2017-2023

# ELECTRONICS MANUFACTURING



## Ukraine's exports

Ukraine's electronics key exports markets, 2023, %



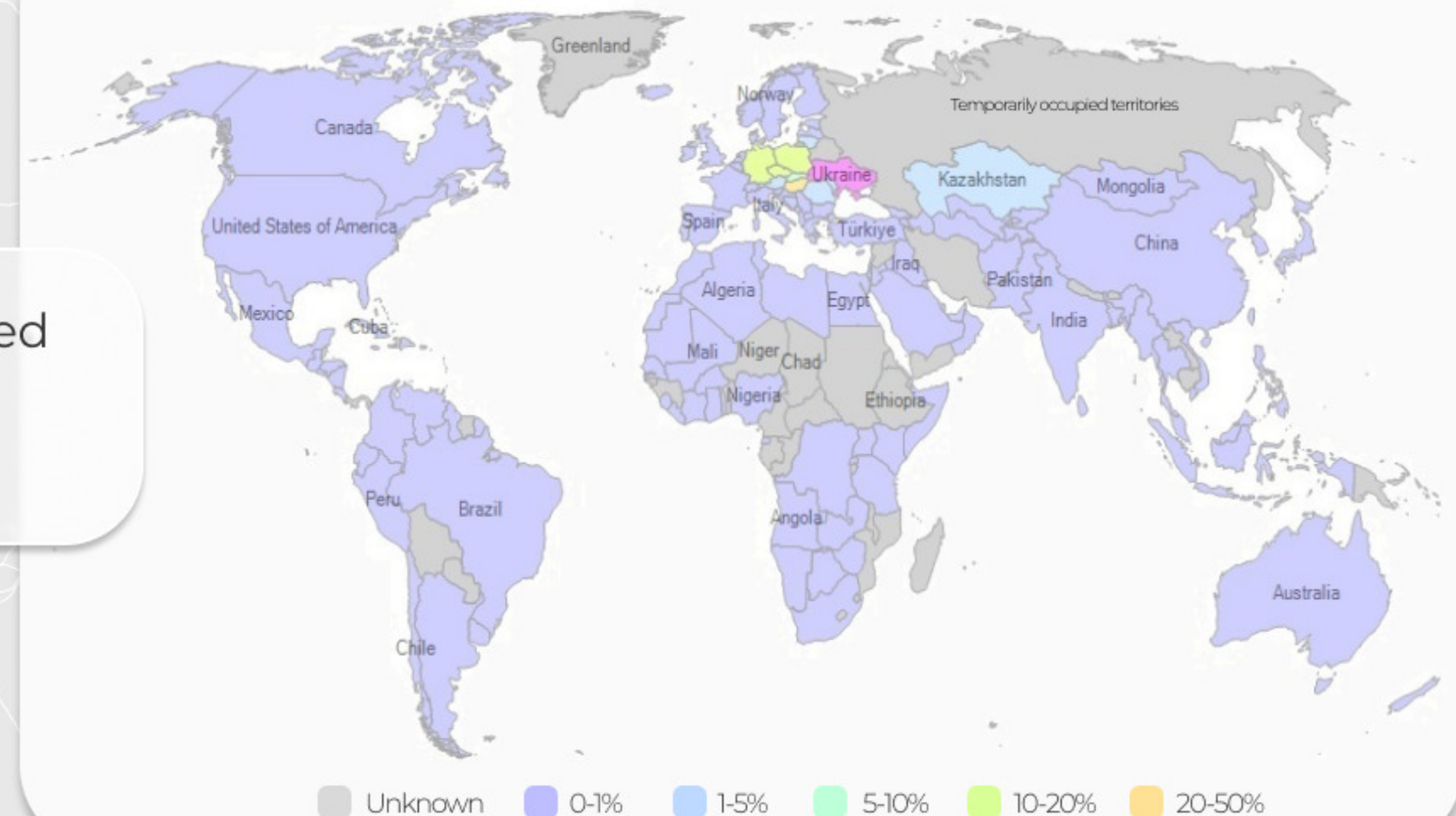
Exports are primarily focused on Central and Eastern European countries



**1.63 bln USD**

Ukraine's electronics exports, 2023\*

Ukraine's electronics exports markets, 2023



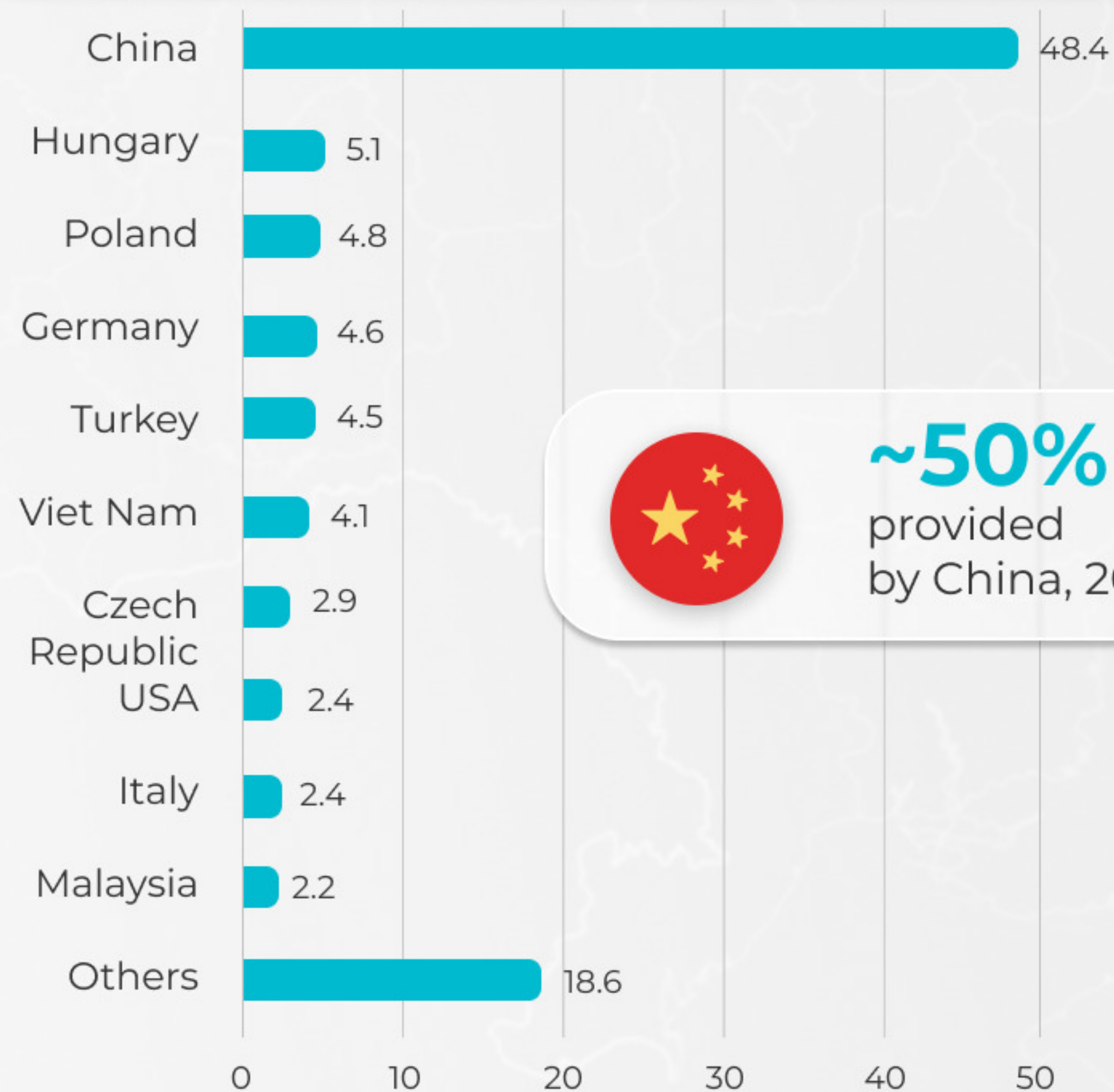


# ELECTRONICS MANUFACTURING



## Ukraine's import

Ukraine's electronics key imports markets, 2023, %



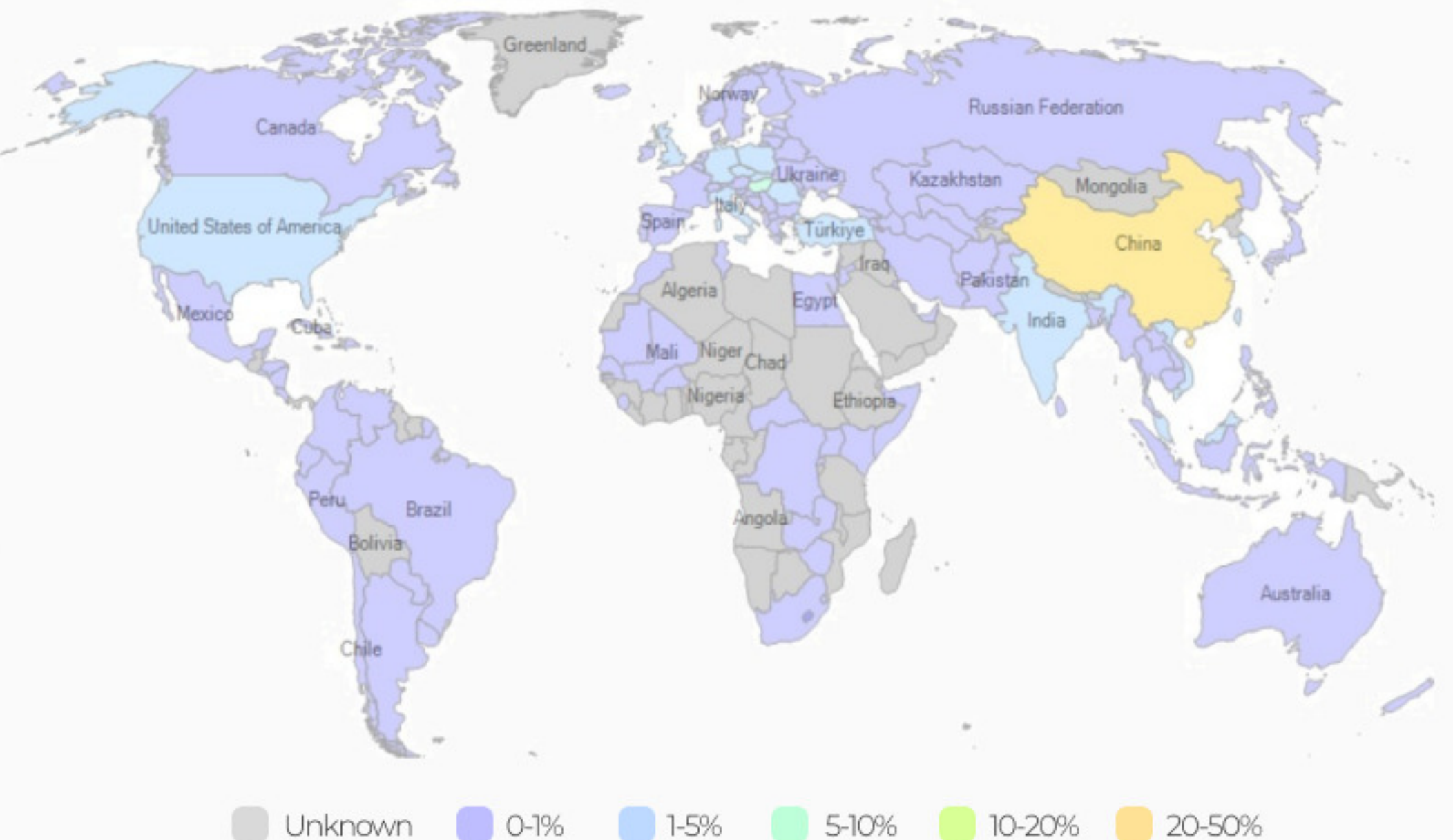
**~50%**  
provided  
by China, 2023



**6.67 bln USD**

Ukraine's electronics imports, 2023\*

Ukraine's electronics imports markets, 2023



# ELECTRONICS MANUFACTURING



## Raw materials

<b>Si</b> Silicon	Manufacturing of semiconductors, integrated circuits, microprocessors	<b>Ag</b> Silver	Soldering, electrical contacts, solar panels
<b>Cu</b> Copper	Wiring, printed circuit boards, electrical connections	<b>Al</b> Aluminum	Device housings, cooling radiators
<b>Li</b> Lithium	Batteries for mobile devices and electric vehicles	<b>Ta</b> Tantalum	Production of capacitors in mobile devices
<b>Co</b> Cobalt	Cathode in batteries	<b>Ni</b> Nickel	Batteries (nickel-cadmium, nickel-metal hydride)
<b>Au</b> Gold	Coatings for contacts in microcircuits, microprocessors	<b>Lanta-noids</b>	Neodymium in magnets, europium for screens, terbium oxide for fluorescent lamps



Ukraine has deposits or occurrences of most of these elements, but not all of them are extracted on an industrial scale due to modern processing technologies and the Russian occupation, which have so far hindered their development

# ELECTRONICS MANUFACTURING



## Graphite and silicon



**18 mln t**

reserves of balance graphite deposits

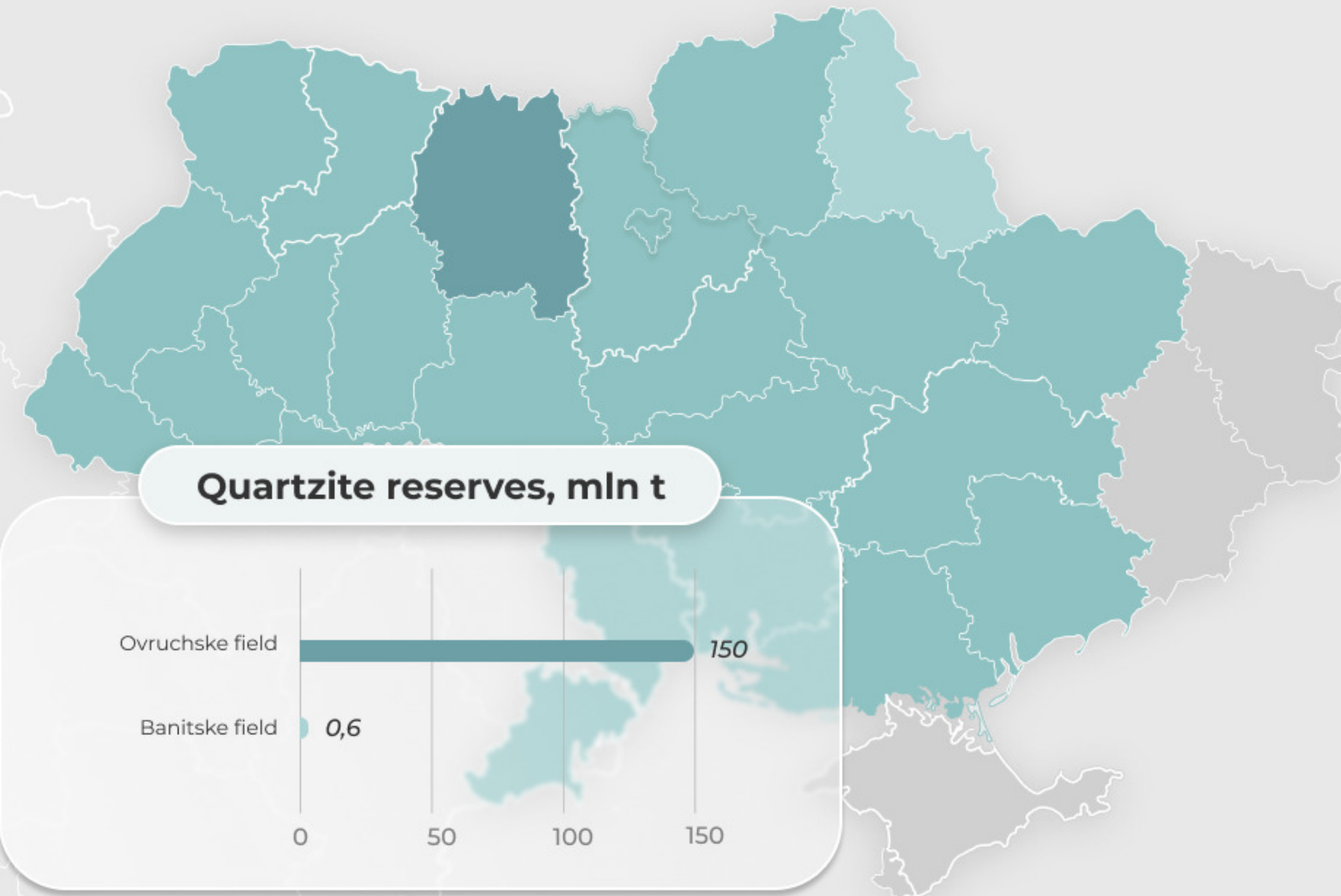


**100 mln**

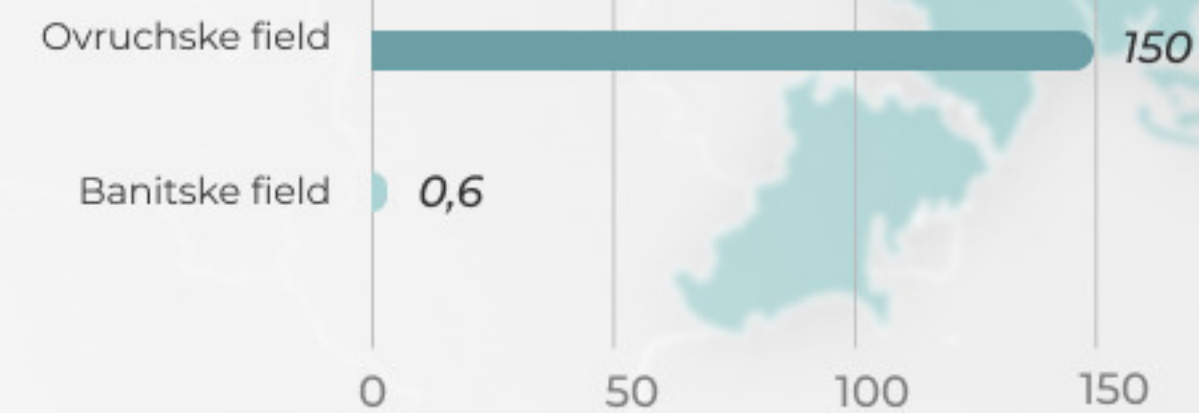
perspective graphite resources



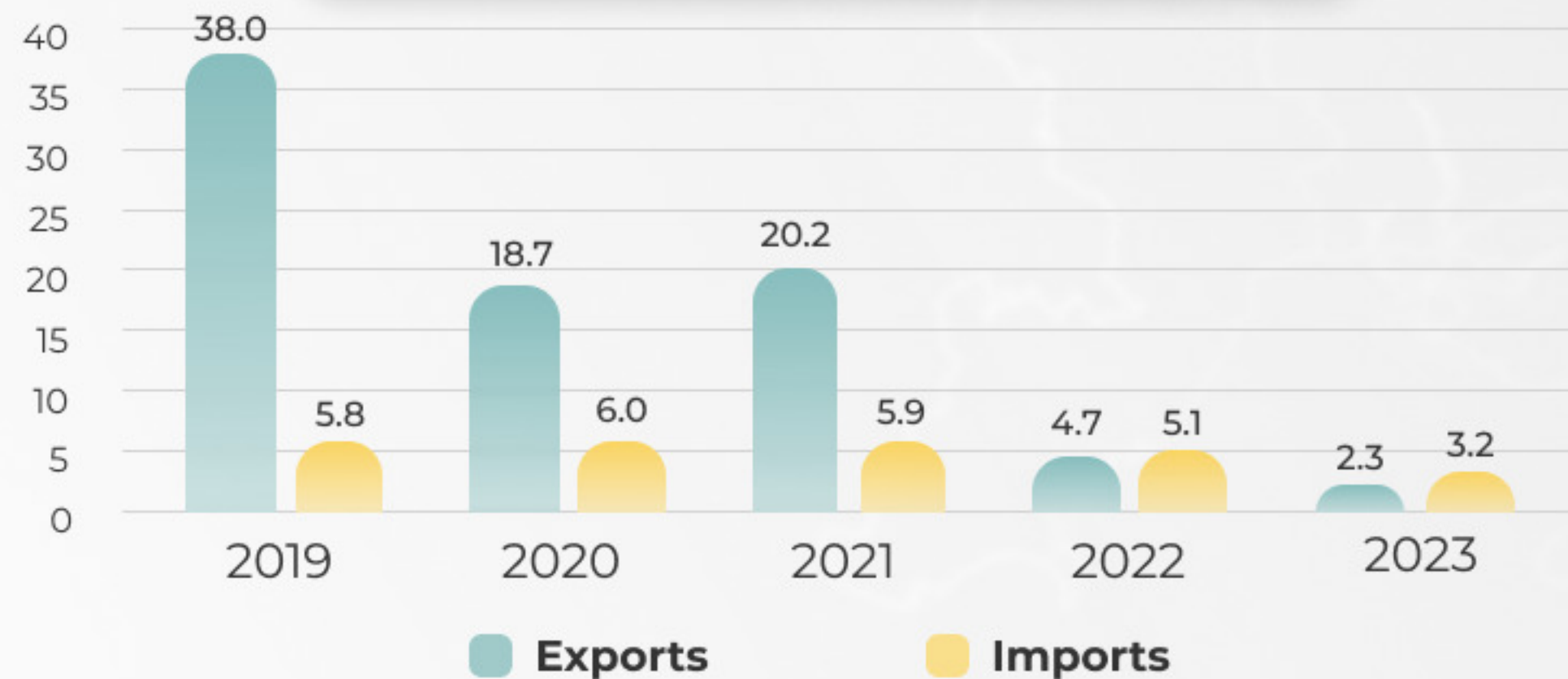
**100 ore occurrences**



**Quartzite reserves, mln t**



**Graphite turnover, USD mln**



**180 mln t**

confirmed quartzite reserves in Ukraine

# ELECTRONICS MANUFACTURING



## Copper



**95 000 t**

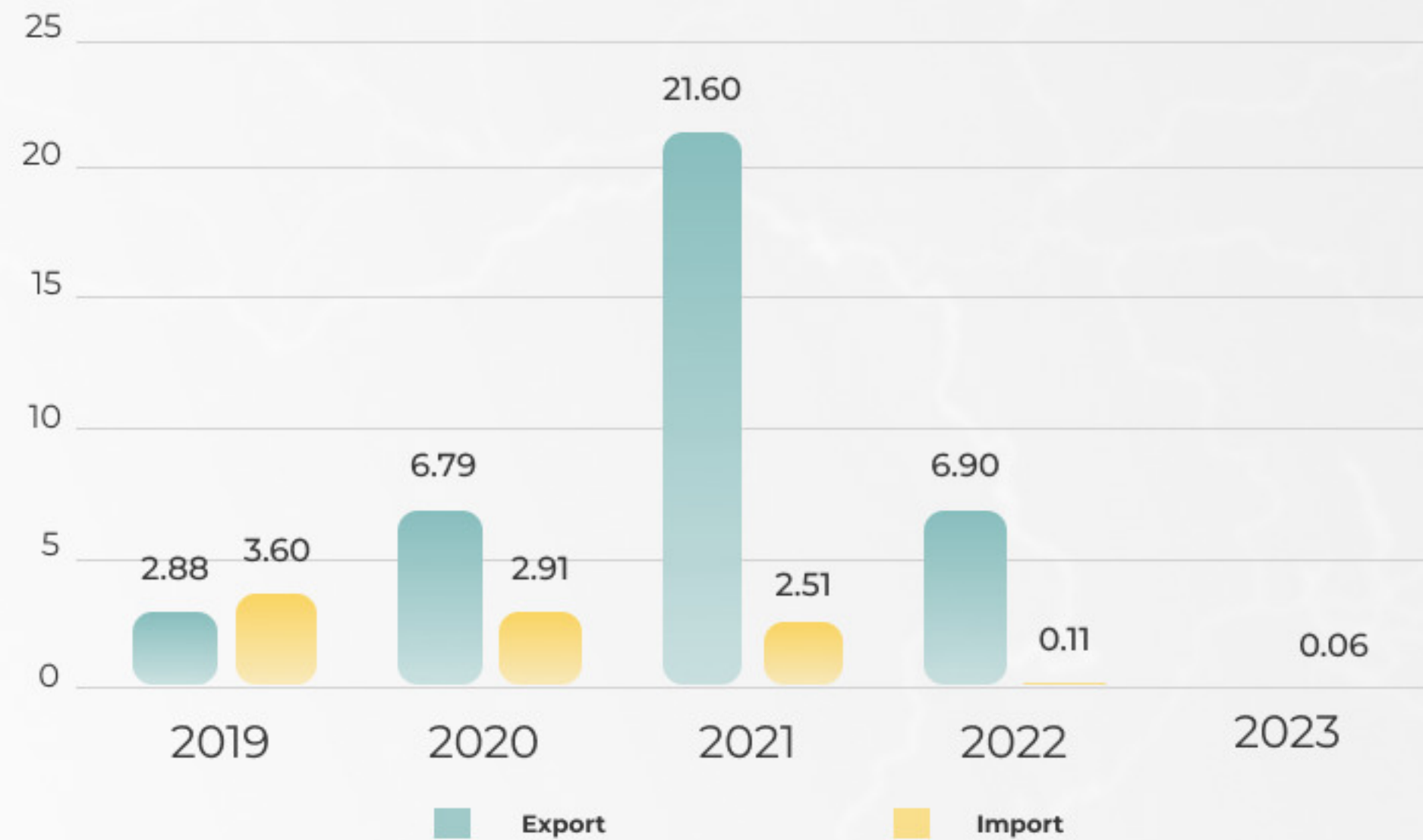
confirmed copper reserves in Ukraine



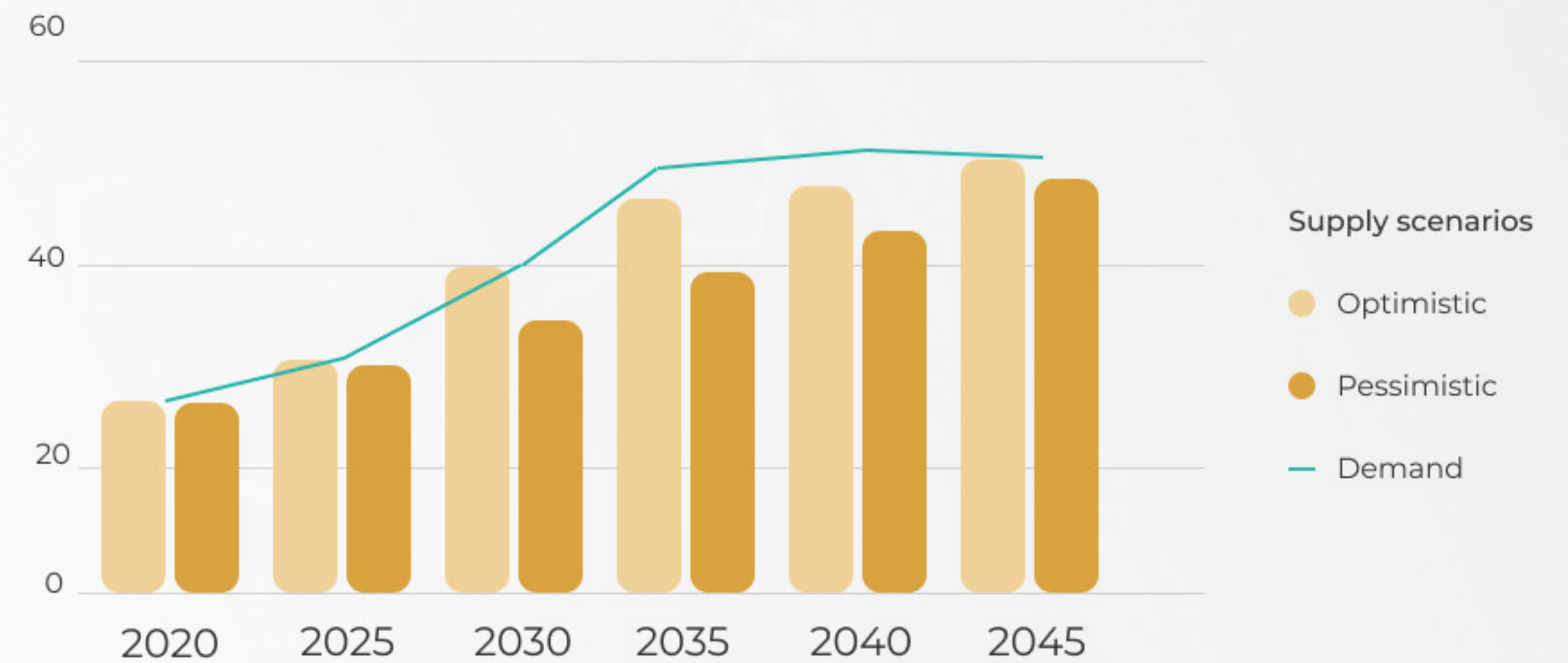
**9.9 mln t**

global copper deficit will increase by 2035

Copper turnover, bln USD



Global copper supply scenarios and demand, mln mt



# ELECTRONICS MANUFACTURING



## Lithium



**500 thsd t**

Ukraine's spodumene lithium reserves, which are among the largest in the world

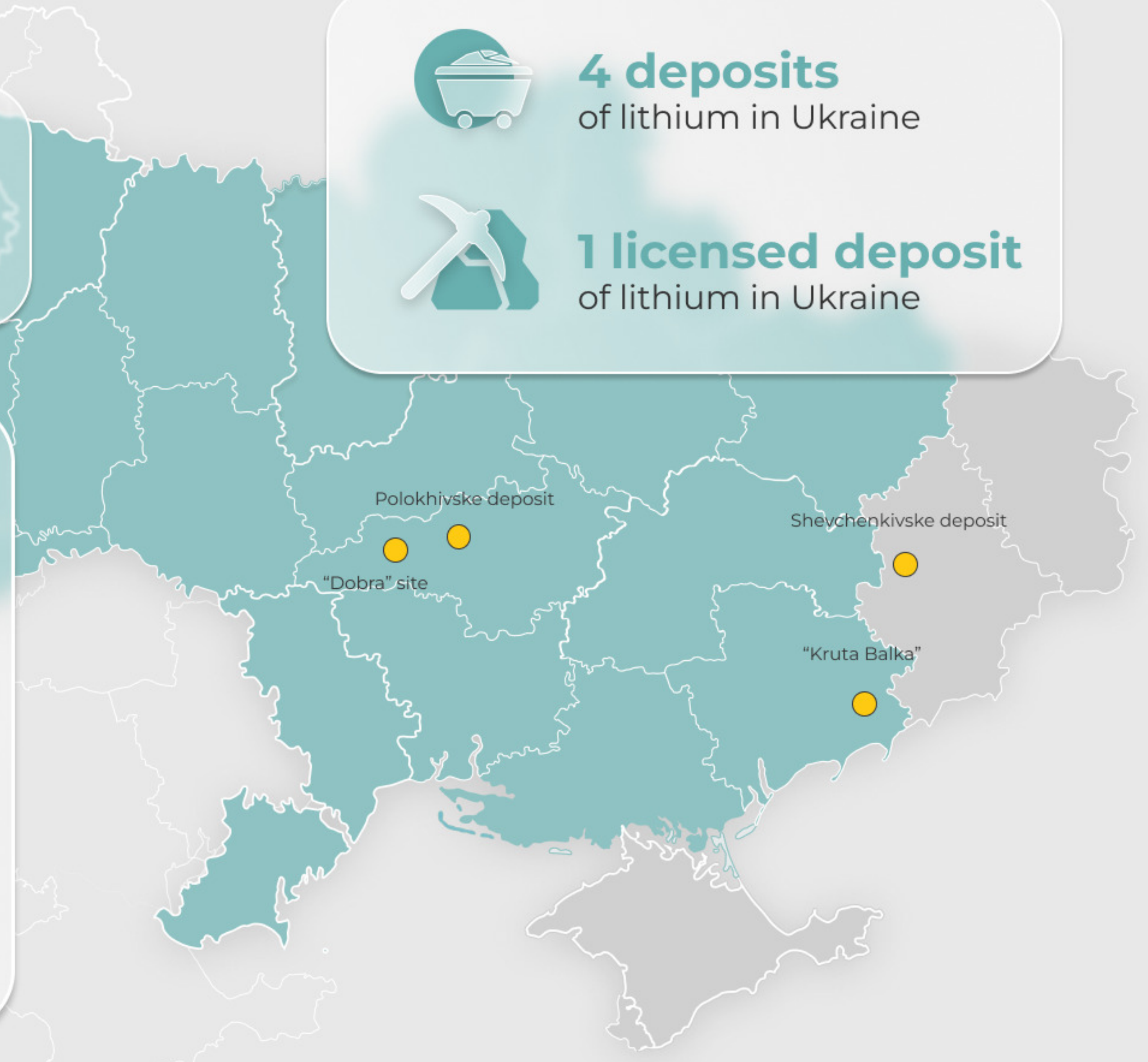
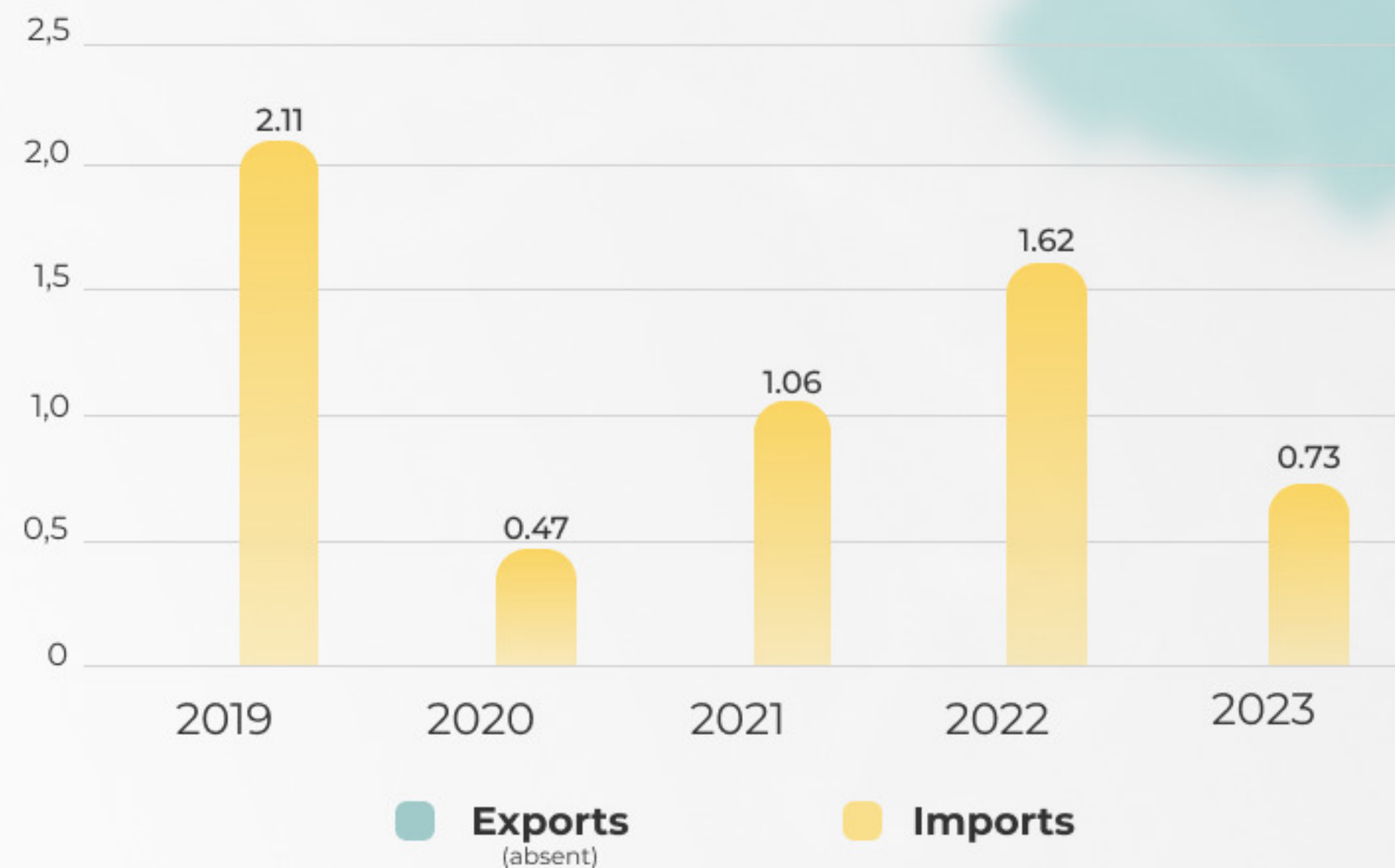


**4 deposits**  
of lithium in Ukraine



**1 licensed deposit**  
of lithium in Ukraine

**Lithium turnover, USD mln**

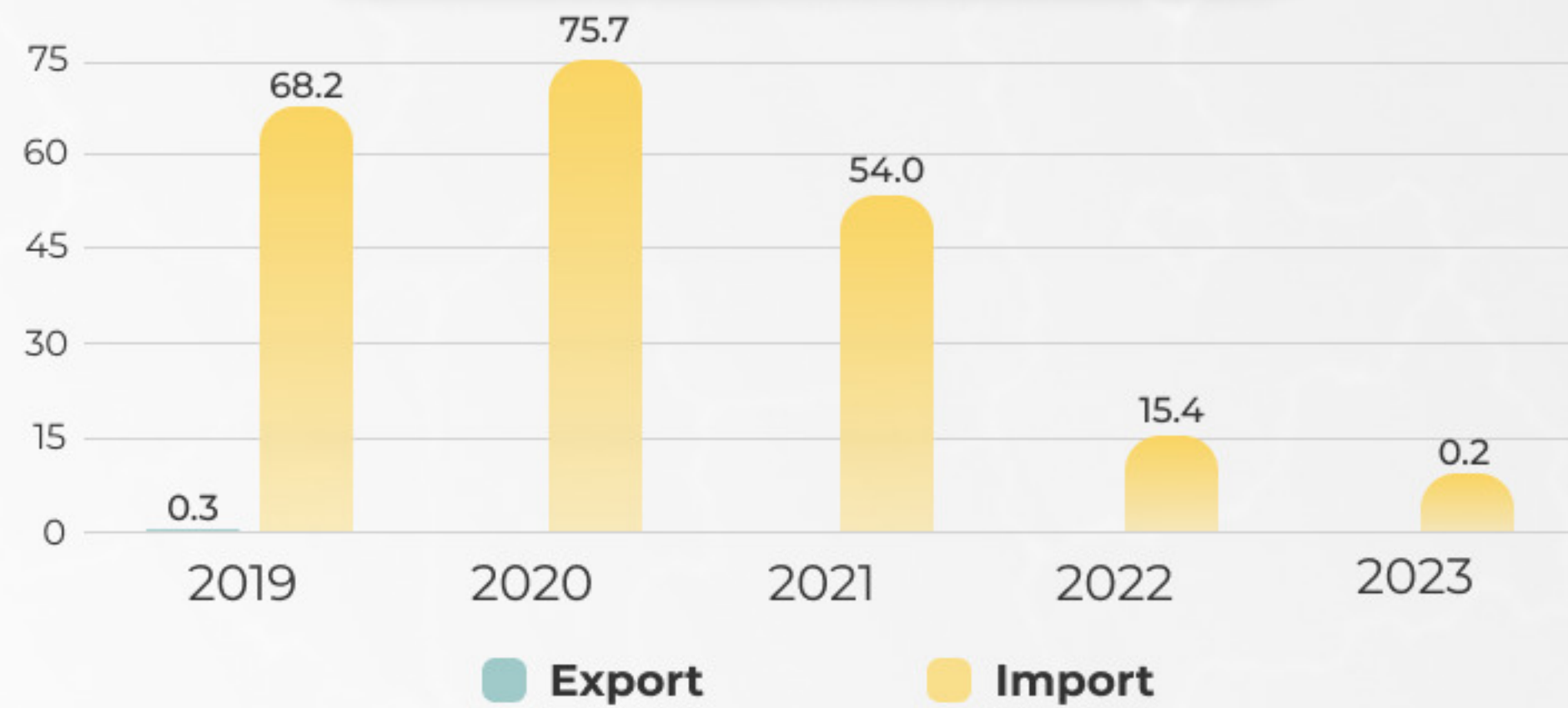


# ELECTRONICS MANUFACTURING



## Nickel and cobalt

### Nickel turnover, USD mln



**0.1%**

of the world's cobalt reserves are located in Ukraine



**8000 t**

confirmed cobalt reserves in Ukraine



**217.8 thsd t**

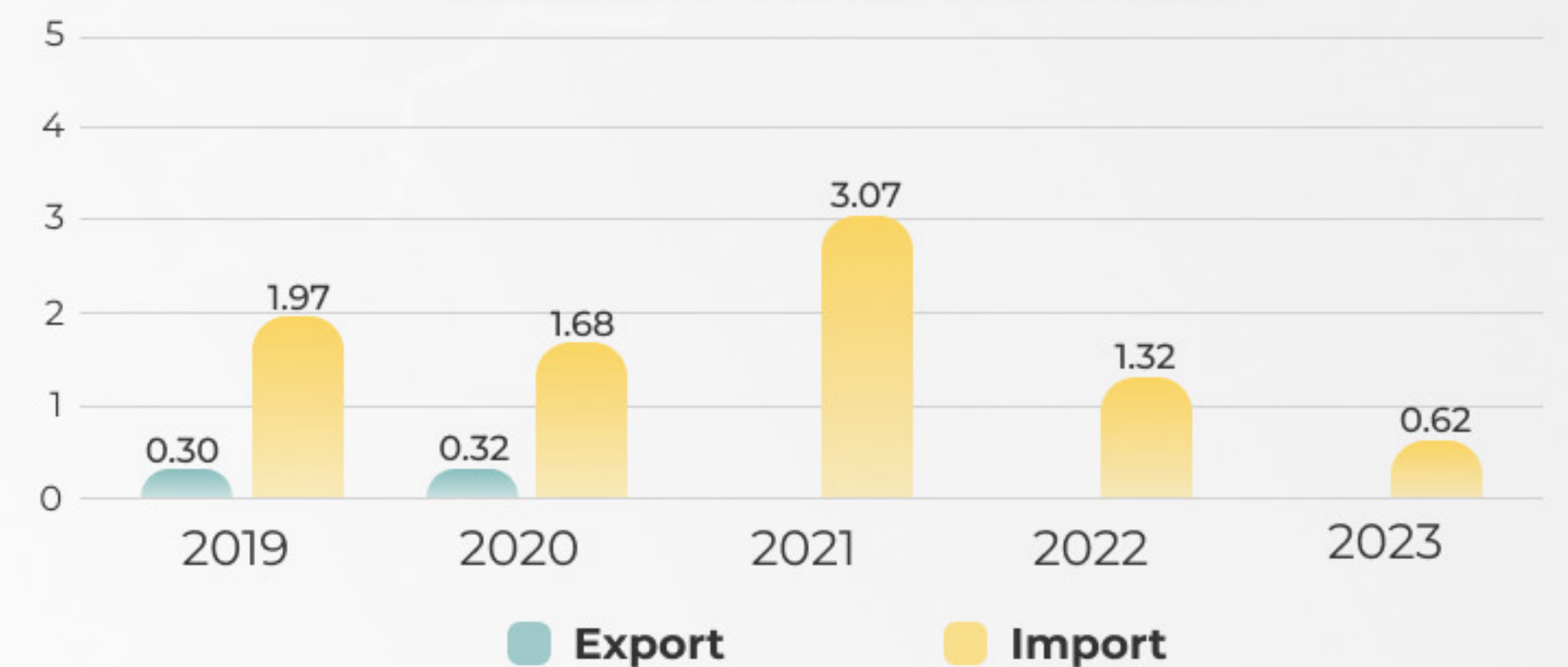
nickel balance reserves



**1 212 thsd t**

off-balance reserves of nickel

### Cobalt turnover, USD mln

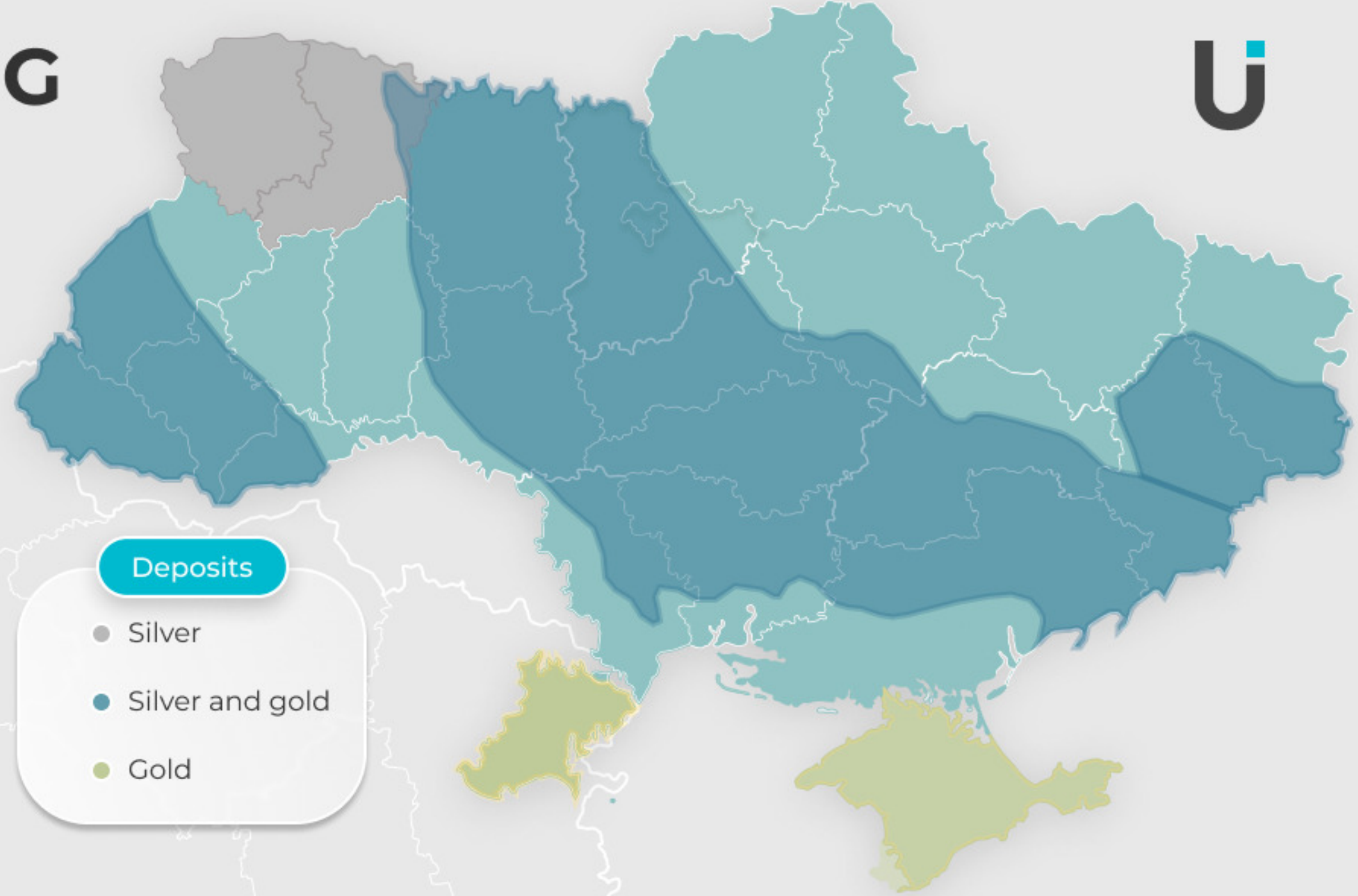
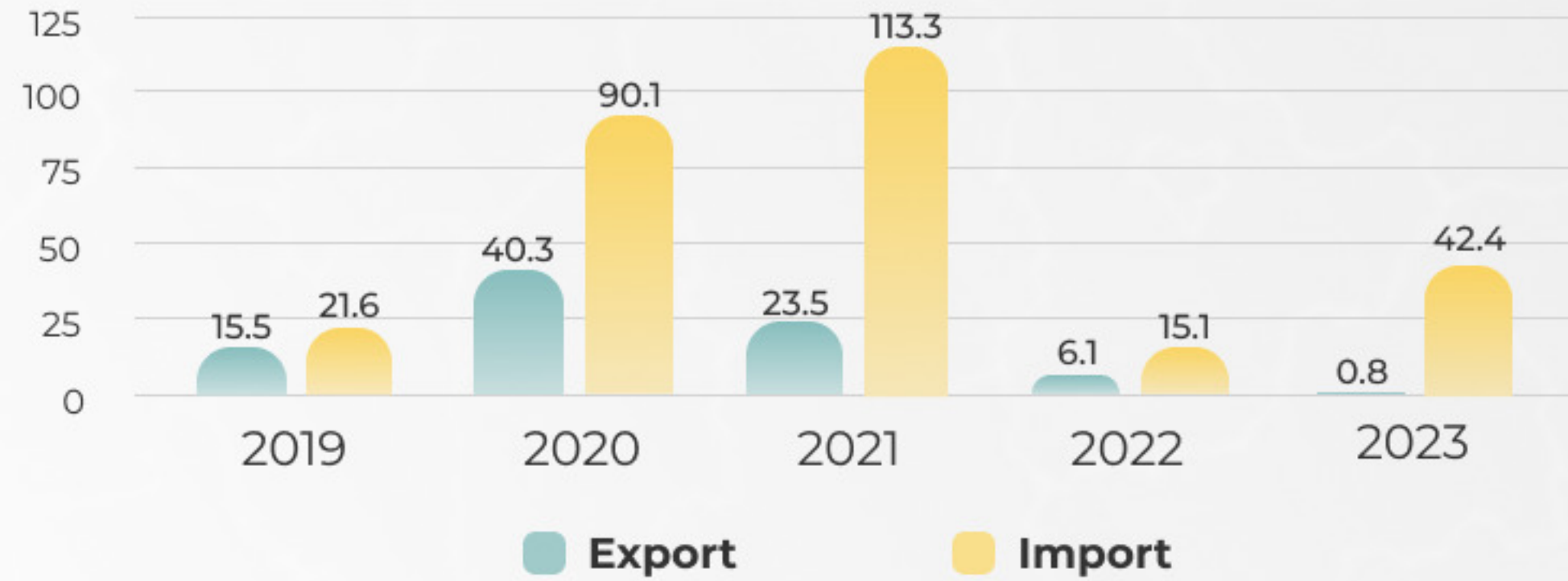


# ELECTRONICS MANUFACTURING

## Gold and silver



Gold turnover, USD mln



**1000+**  
gold ore sites

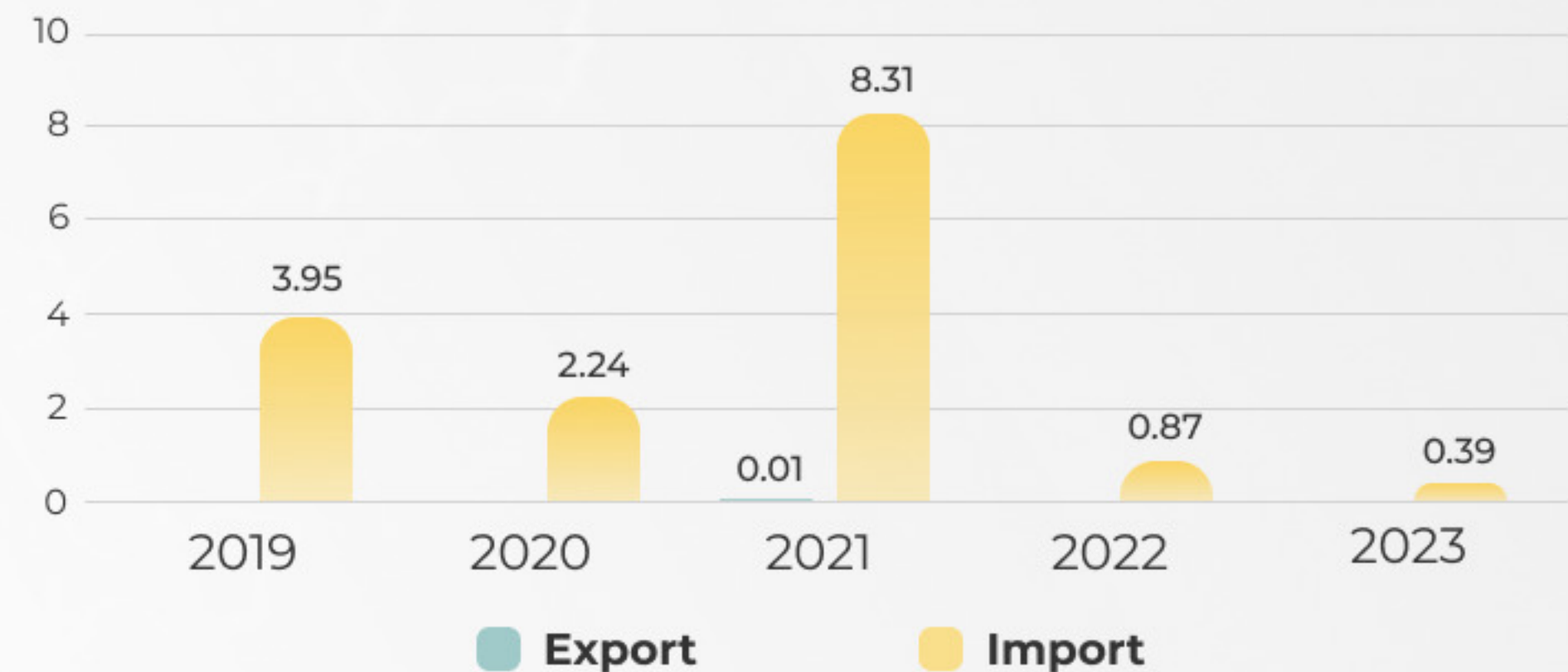


**3 000 t**  
gold ore potential



**600 t**  
silver reserves

Silver turnover, USD thsd



# ELECTRONICS MANUFACTURING



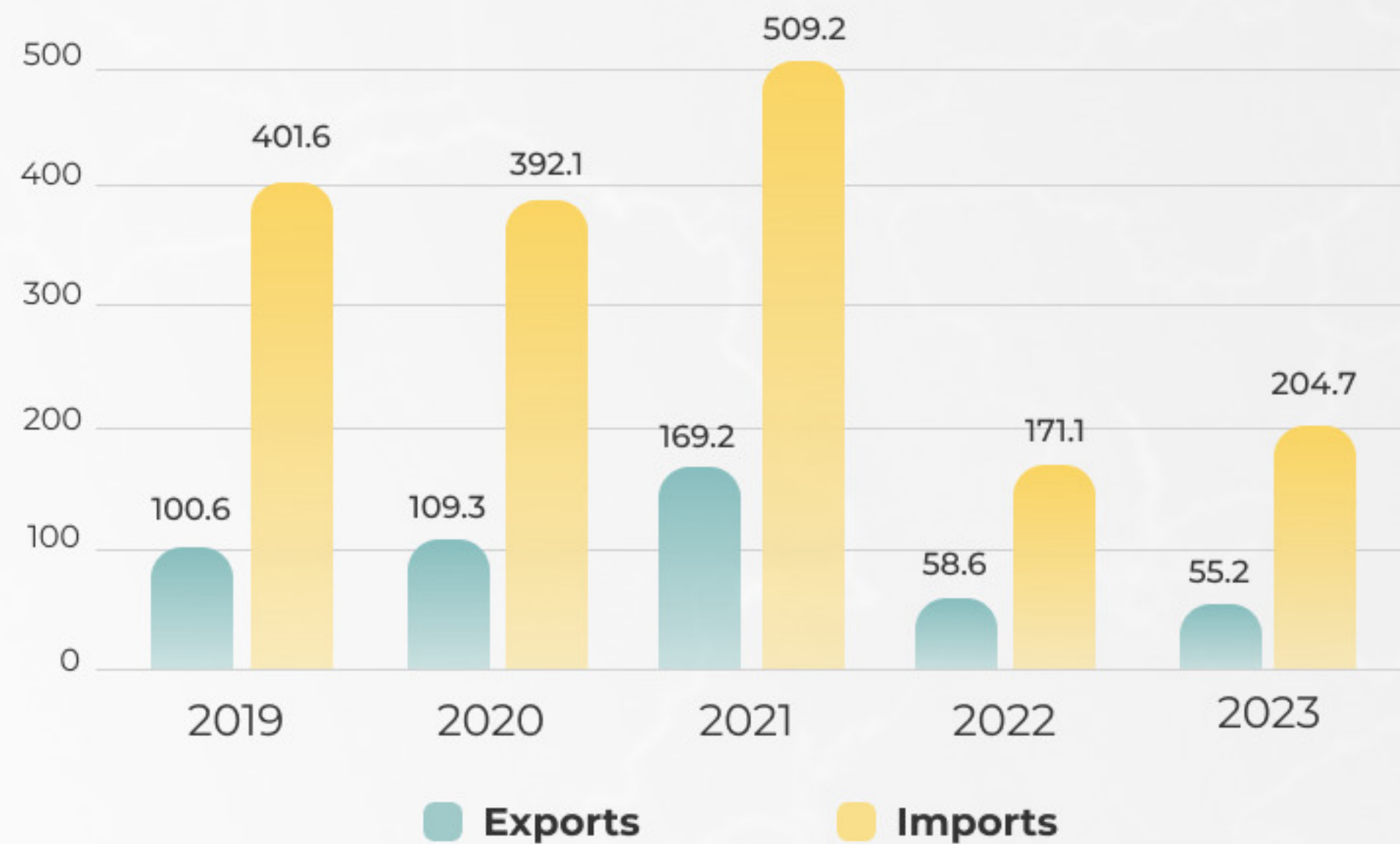
## Aluminium and tantalum



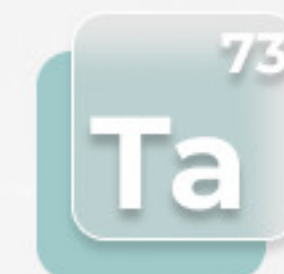
**18.9 mln t**

aluminium reserves in Ukraine

### Aluminum turnover, mln USD



### Tantalum turnover, thsd USD



Tantalum pentoxide ( $Ta_2O_5$ ) detected in ores of Malyshevske and Vovchanske deposits in Dnipropetrovska oblast



# ELECTRONICS MANUFACTURING



Access to regional consumer markets



Nearly 1 bln consumer market can be reached within 2 500 miles

~450 mln **European Union**

~90 mln **CIS (selected)**

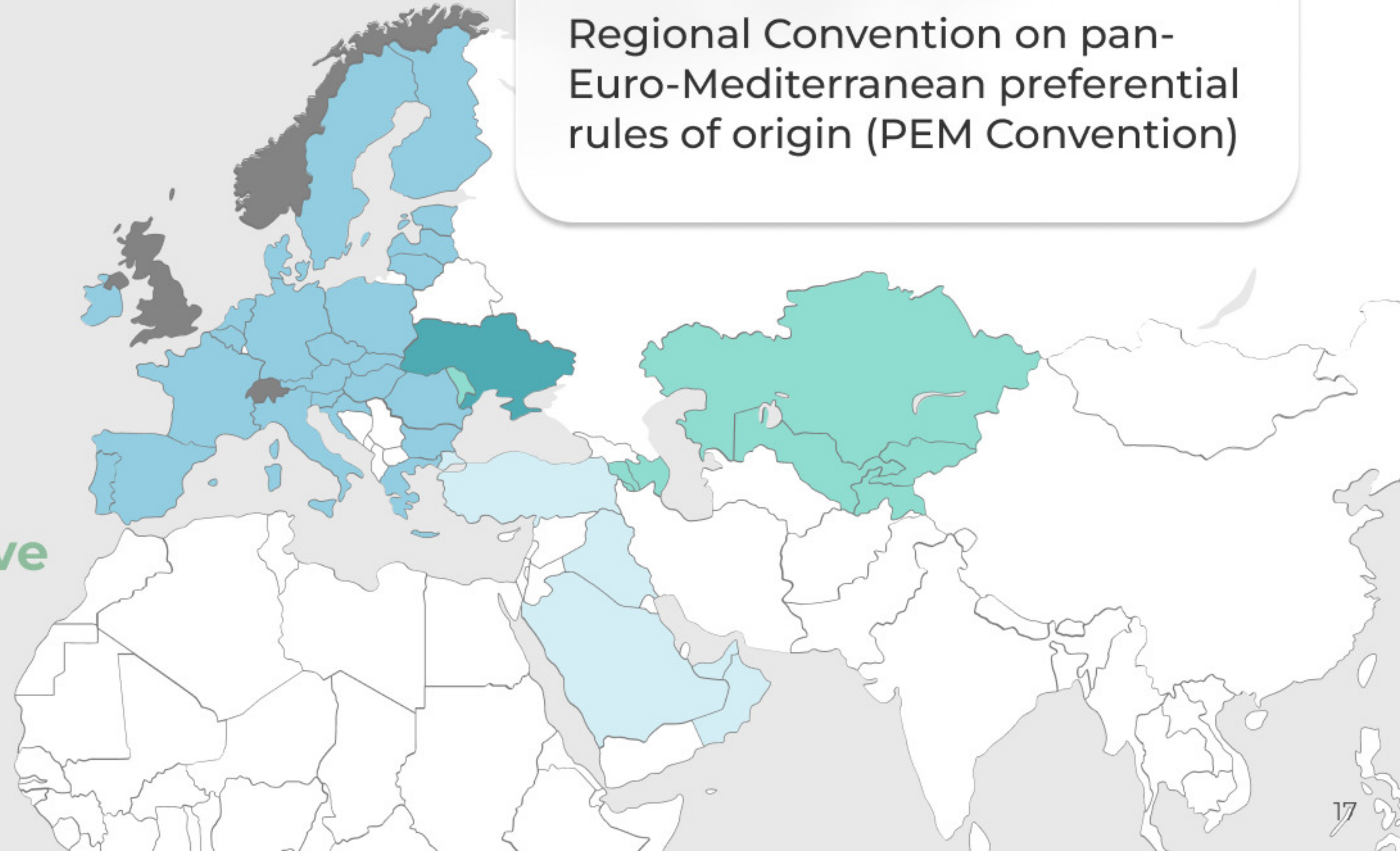
~500 mln **Non EU**

~40 mln **Ukraine**

About **6 mln** Ukrainian refugees were registered in Europe as of 1H 2024

Ukraine has 19 FTAs with 47 countries

Ukraine is a member of The Regional Convention on pan-Euro-Mediterranean preferential rules of origin (PEM Convention)



**The Deep and Comprehensive Free Trade Areas (DCFTA) with EU**

# ELECTRONICS MANUFACTURING

Skilled workforce and competitive costs



**8th in the world**

ranks Ukraine by the number of **computer and information technologies** specialists



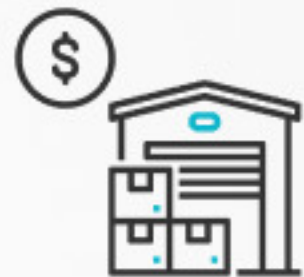
**400+ EUR**

average monthly engineer's salary



**0.17 euros per kWh**

average electricity price for industrial consumers in Ukraine



**4.5–5.3 USD**

average rental cost per m<sup>2</sup> of class A warehouse facilities in Ukraine



## GRADUATES OF THE 2022/2023 ACADEMIC YEAR BY SPECIALIZATION

Name of Specialization	Number of Graduates	
	Bachelor's degree	Master's degree
Natural Sciences	2 651	592
Mathematics and Statistics	881	217
Information Technology	14 265	2 182
Mechanical Engineering	3 247	2 182
Electrical Engineering	3 364	542
Automation and Instrumentation Engineering	2 398	399
Chemical and Bioengineering	1 435	329
Electronics and Telecommunications	1 624	223
Production and Technology	3 764	670
Architecture and Construction	4 270	1 249
Agricultural Sciences and Food Technology	5 380	1 050
Transport	5 925	441
Health care	3 324	11 066

# INVESTMENT OPPORTUNITIES



R&D development



over  
**100 R&D centers**  
operating in Ukraine



**5-7-9%**  
**Affordable loans**  
simplifying financing for SMEs  
and innovative startups



over  
**300 млн дол. США\***  
state budget of Ukraine for  
scientific research, 2025

## Startup Ecosystem Index 2024, Ukrainian cities in TOP-1000

**75**

Kyiv

**397**

Lviv

**599**

Kharkiv

**682**

Odesa

**962**

Ternopil

**969**

Dnipro



**46th**

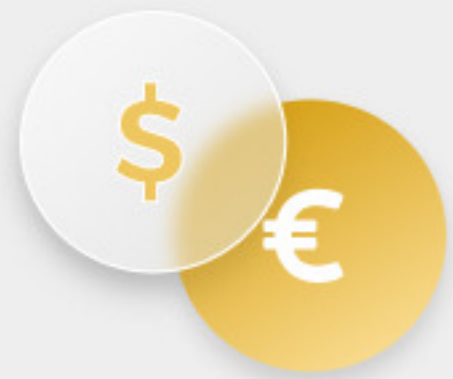
ranked Ukraine among 100 countries in  
the Global Startup Ecosystem Index 2024

# INVESTMENT INCENTIVES



Capital investments

## REQUIREMENTS FOR INVESTMENT PROJECT



**12+ EUR mln**  
of investment



**10+**  
of new jobs



**up to 5 years\*\*\***  
of project  
implementation



**construction,  
modernization**  
technical and/or  
technological  
reequipment of objects

## FORMS OF SUPPORT



**CIT exemption\***  
(for 5 years by choice)



**Exemption from VAT**  
for importing new  
equipment and  
components to it \*\*



Exemption from **import  
duties** for new equipment  
and components to it \*\*



Construction/compensation  
for built **engineering and  
transport infrastructure**  
(highways, communication  
lines, utilities, etc.).



Lease of **state or  
communal land plots**  
without land auctions



Compensation for **costs  
of connection to  
engineering and  
transport networks**



**Land tax exemption/  
reduced land tax rates**



Exemption from  
compensation for  
**losses of forestry  
production**

## AMOUNT OF SUPPORT

up to **30%**  
CAPEX



**For more detailed information,  
we recommend paying  
attention to the following  
regulatory acts**

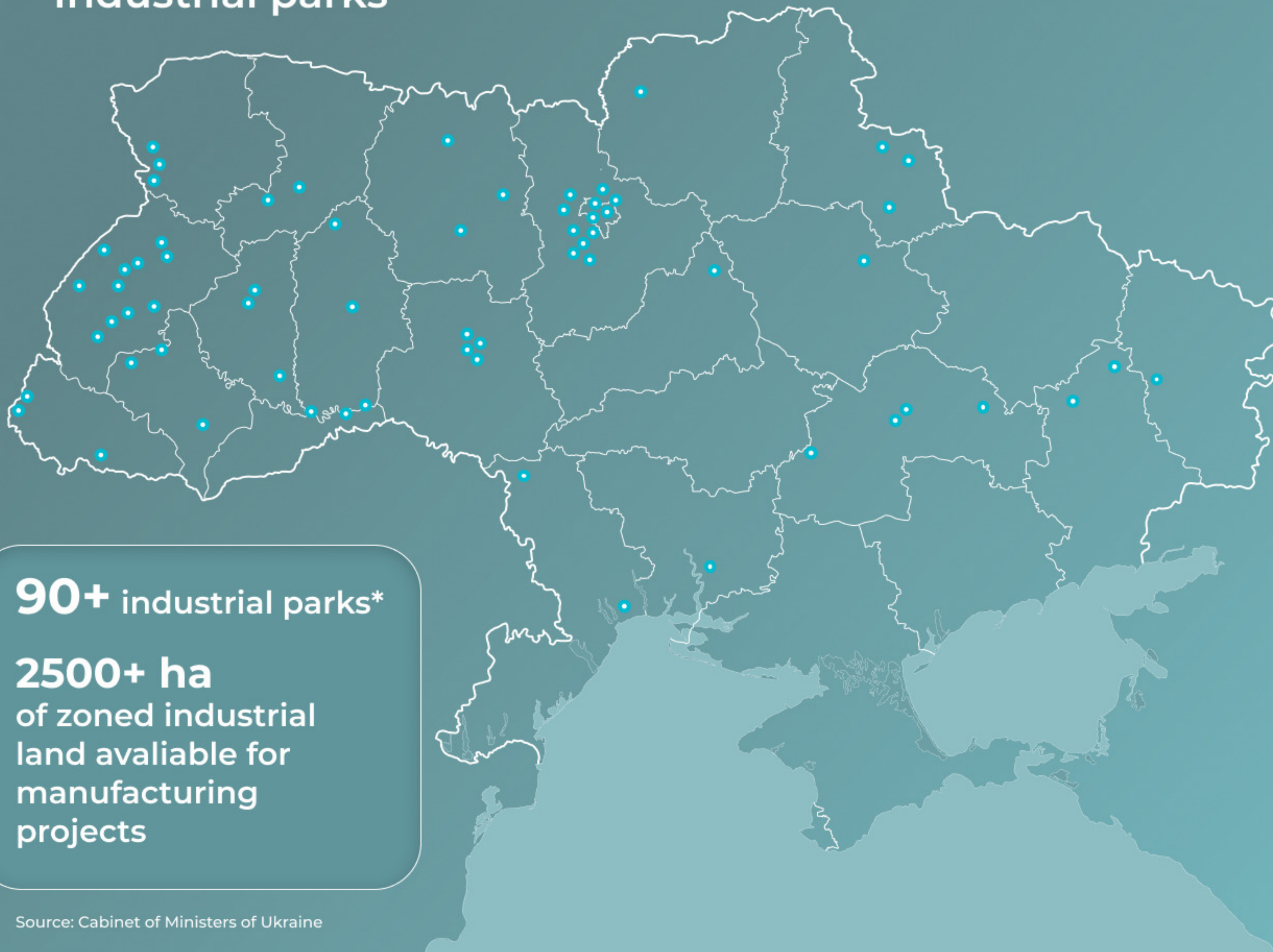


\* Not applicable to projects in the field of extraction for the purpose of further processing and/or enrichment of natural resources.  
\*\* List and volume of equipment is approved by the CMU for each project.  
\*\*\* The applicant, not earlier than 18 months before the date of submission of the application to the authorized body, may make investments in investment facilities in the amount not exceeding 30% of the total amount of significant investments required for the implementation of an investment project with significant investments

# INVESTMENT INCENTIVES



## Industrial parks



**90+** industrial parks\*

**2500+ ha**  
of zoned industrial  
land available for  
manufacturing  
projects

Source: Cabinet of Ministers of Ukraine



10-year **corporate income tax exemption**



compensation for **connecting to engineering grids**



**VAT exemption** for importing new equipment



exemption from **import duties** for new equipment



**full or partial** compensation of interest rates on loans for arranging an industrial park, carrying out economic activity



**Guide:** State support for Industrial Parks

# INVESTMENT INSURANCE



International Agency

Ukrainian agencies

Government agencies

1-3%

acceptable level of insurance rates

82%

businesses are ready to insure during of war



A formalized agreement on the implementation of the investment insurance mechanism for foreign investments: **2022**

Annual rate: **2-3%**

Insurance period: **10 years**

Coverage of the amount of losses: **up to 90%**

**Sure Trust Fund:** USD 110 mln, goal - USD 330 mln



Law No. 9015 "On Amendments to the Law of Ukraine "On financial mechanisms for stimulating export activity" regarding insurance of investments in Ukraine against military risks": **2023**

Annual rate: **0.49% - 8.05%**

Insurance amount: **UAH 200 mln**

Insured for 5 months in 2024: **UAH 2.93 bln**



Property insurance against war risks: **2024**

Implemented cases: **Grain elevators**



Ship insurance in the Black Sea: **2023**

Containers with grain, iron ore, and steel, electrical equipment, fodder

Annual rate: **0.75%**

Coverage amount: **USD 50 mln**



U.S. International Development Finance Corporation

Memorandum on coverage of American, international and Ukrainian investments in Ukraine: **2023**

Coverage of the amount of losses: **up to 85%**

Insurance for SMEs: **USD 50 mln**

Insurance of the agricultural sector, manufacture: **USD 300 mln**



**22 export-import agencies:** Germany, WB, USA, Japan, Canada, Italy, Poland, Norway, Slovakia, France, Bulgaria, Estonia, Latvia, Lithuania, Czech Republic, Austria, UAE, Portugal, Spain, Sweden, Finland, Denmark

Volume of the collected fund: **EUR 1 bln**



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## TRANSFORMING UKRAINE



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