OPPORTUNITIES FOR REBUILDING IRON & STEEL INDUSTRY OF UKRAINE

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For 95th Session of the OECD Steel Committee
IRON & STEEL INDUSTRY IS FUNDAMENTAL FOR THE ECONOMY OF UKRAINE

GDP
10.3% *
contributed by the iron & steel sector to GDP of Ukraine pre-war, incl. supply chain

EXPORT
14.6%
contributed by the iron & steel sector to export of goods in 2023, 32.6% pre-war

EMLOYMENT
566 thousand people
employed in the iron & steel sector and supply chain pre-war, 1 ensured 4.5 jobs in other sectors of economy

CAPEX
29.4%
the share of iron & steel sector in total CAPEX of industrial sectors pre-war
THERE ARE 5 OF 13 BFS IN OPERATION IN UKRAINE AND 2 EAFS WITH QUITE HIGH UTILIZATION

Nominal crude steelmaking capacities in Ukraine as of March 2024, mln tons:

- **ArcelorMittal Kryvyi Rih**: 6.5
- **Zaporizhstal**: 4.0
- **Kametsteel**: 3.8
- **Interpipe Steel**: 1.3
- **Dnipro metallurgical plant**: 1.2
- **Dniprospetsstal**: 1.0

**Total – 17.8 mln tons:**

- **BF-BOF**: 11.5
- **OHF**: 4.0
- **EAF**: 2.3

*Crude steel output, compared to pre-war level*

**Dniprospetsstal**
- 1 EAF
- 75%

**Interpipe Steel**
- 1 EAF
- 80%

**Kametsteel**
- 2 BFS from 3
- 80%

**Dnipro Metallurgical Plant**
- 0 BFS from 2
- 0%

**ArcelorMittal Kryvyi Rih**
- 1 BF from 4
- 25%

**Zaporizhstal Iron and Steel Works**
- 3 BF from 4
- 65%

**Azovstal**
- Destroyed, 5 BFS

**Ilyich Iron and Steel Works**
- Destroyed, 4 BFS
IRON & STEEL OUTPUT IN UKRAINE RECOVERED IN 2023, BUT STILL 71% LOWER THAN PRE-WAR

CRUDE STEEL OUTPUT

- 2023:
  - 6.2 mln tons
- 2024:
  - 7.2 mln tons

% Change:
- -0.5% to 2022
- +16% to 2023
- -71% to 2021
- -66% to 2022

Data source: Ukrmetallurgprom
MAIN BOTTLENECKS FOR IRON & STEEL SECTOR OF UKRAINE

Lack of personnel (mobilization, migration)
Instability of the “sea corridor”
High logistic costs
Competition with Russian products
Coal shortage, needs for import
Trade restriction
Lagging in CAPEX
Insufficient domestic demand

15% of steelmakers’ workforce were drafted to the Ukrainian defense forces

3,000 unfilled vacancies has ArcelorMittal Kryvyi Rih in 2024, according to CEO Mauro Longobardo
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Insufficient domestic demand

1.2 mln tons
export of iron ore via “sea corridor” in December 2023

200 ths tons
export of ferrous products via “sea corridor” in December 2023
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Trade restriction

Lagging in CAPEX

Insufficient domestic demand

\[ \times 4 \text{ times} \]
freight costs via “sea corridor” in October 2023 was higher than pre-war freight costs

\[ \times 2 \text{ times} \]
freight costs via “sea corridor” in January 2024 was higher than pre-war freight costs
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3.1 mln tons
cImport of Russian semis to the EU in 2023

2.6 mln tons
Import of Russian pig iron & HBI to the EU in 2023
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5.5 mln tons
output of HCC concentrate in Ukraine in 2023

330 ths tons
import of coke to Ukraine in 2023
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3.3 mln tons
steel consumption in Ukraine in 2023

+10%
of pig iron export could lose Ukraine due to CBAM
VISION BY GMK CENTER

UKRAINE IS THE ESSENTIAL PART OF EUROPEAN IRON & STEEL INDUSTRY IN THE FUTURE

Key supplier of DR-grade feed
Low carbon HBI supplier
Supplier of environmentally friendly steel products
Importer of HVA steel products
Importer of technologies
UKRAINE IS THE BEST SUITABLE TO BECOME MAJOR SUPPLIER OF FEED FOR DRI PRODUCTION

5 bln tons
of global magnetite ores reserves located in Ukraine, that holds 5th place globally by magnetite ores

Kryvyi Rih:
- Ingulets GOK
- Northern GOK
- Central GOK
- Southern GOK
- ArcelorMittal Kryvyi Rih
- Kryvorizkyi ZHRK
- Sukha Balka
- Rudomine
- Ukrmekhanobr
- Black Iron (project)

Horishni Plavni (Poltava region):
- Ferrexpo Poltava Mining
- Ferrexpo Eristovo Mining
- Ferrexpo Belanovo Mining

Dniprorudne (Zaporizhzhia region):
- Zaporizkyi ZHRK
## VISION BY GMK CENTER

### UKRAINE SUPPORTS EUROPEAN GREEN TRANSITION WITH DR-GRADE FEED

**Potential of DR-grade feed capacities in Ukraine, mln tons**

<table>
<thead>
<tr>
<th>Company</th>
<th>Product</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metinvest</td>
<td>Pellets</td>
<td>7.5</td>
</tr>
<tr>
<td>Metinvest</td>
<td>Concentrate 68-70%</td>
<td>19.3</td>
</tr>
<tr>
<td>Ferrexpo</td>
<td>Pellets</td>
<td>3.0-5.0</td>
</tr>
<tr>
<td>ArcelorMittal Kryvyi Rih</td>
<td>Pellets</td>
<td>5.0</td>
</tr>
<tr>
<td>Black Iron</td>
<td>Concentrate 68%</td>
<td>4.0-8.0</td>
</tr>
<tr>
<td>Southern GOK</td>
<td>Concentrate 68%</td>
<td>3.0</td>
</tr>
</tbody>
</table>

**20-25 mln tons** potential merchant supply of DR-grade feed from Ukraine in mid-term

**180 mln tons** potential demand growth for DR-grade feed globally in 2030, according to announced projects, about 90 mln tons in OECD countries
VISION BY GMK CENTER

THE FUTURE OF UKRAINIAN STEEL INDUSTRY IS IN LOW-CARBON PRODUCTION

Potential routes for decarbonization of iron & steel sector of Ukraine

<table>
<thead>
<tr>
<th>Company</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metinvest</td>
<td>2 DRI modules × 2.5 mln tons</td>
</tr>
<tr>
<td>Zaporizhstal</td>
<td>2 EAFs</td>
</tr>
<tr>
<td>Kametsteel</td>
<td>EAF + slab casting, + bloom casting</td>
</tr>
<tr>
<td>ArcelorMittal Kryvyi Rih</td>
<td>DRI-EAF facilities</td>
</tr>
<tr>
<td>Dnipro Metallurgical Plant</td>
<td>could be decommissioned</td>
</tr>
</tbody>
</table>
# VISION BY GMK CENTER

## UKRAINIAN IRON & STEEL INDUSTRY IN 2035

<table>
<thead>
<tr>
<th></th>
<th>2021</th>
<th>2023</th>
<th>2035</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal steelmaking capacities, mln tons</td>
<td>27.0</td>
<td>17.8</td>
<td>15.0</td>
</tr>
<tr>
<td>Steel output, mln tons</td>
<td>21.4</td>
<td>6.2</td>
<td>12.0</td>
</tr>
<tr>
<td>Capacities utilization, mln tons</td>
<td>79%</td>
<td>35%</td>
<td>80%</td>
</tr>
<tr>
<td>Low carbon steel output, mln tons</td>
<td>1.0</td>
<td>0.8</td>
<td>6.0</td>
</tr>
<tr>
<td>Domestic market (finished), mln tons</td>
<td>4.6</td>
<td>3.5</td>
<td>5.0</td>
</tr>
<tr>
<td>Steel export (finished), mln tons</td>
<td>15.1</td>
<td>3.3</td>
<td>7.1</td>
</tr>
<tr>
<td>Pig iron export, mln tons</td>
<td>3.2</td>
<td>1.2</td>
<td>-</td>
</tr>
<tr>
<td>HBI export, mln tons</td>
<td>-</td>
<td>-</td>
<td>2.0</td>
</tr>
</tbody>
</table>

*Assuming the actual front-line*
Our expertise:

- Market studies and global trends
- Impact analysis, analysis of regulatory documents
- Modelling and business valuation
- Global trade issues
- Concept of reforms and policy papers
- Decarbonization and green energy transition issues
- Sustainability, ESG activities and reporting

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