

# ENERGY EFFICIENCY IN STEEL AND MACHINE BUILDING SECTORS

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**Kiev**

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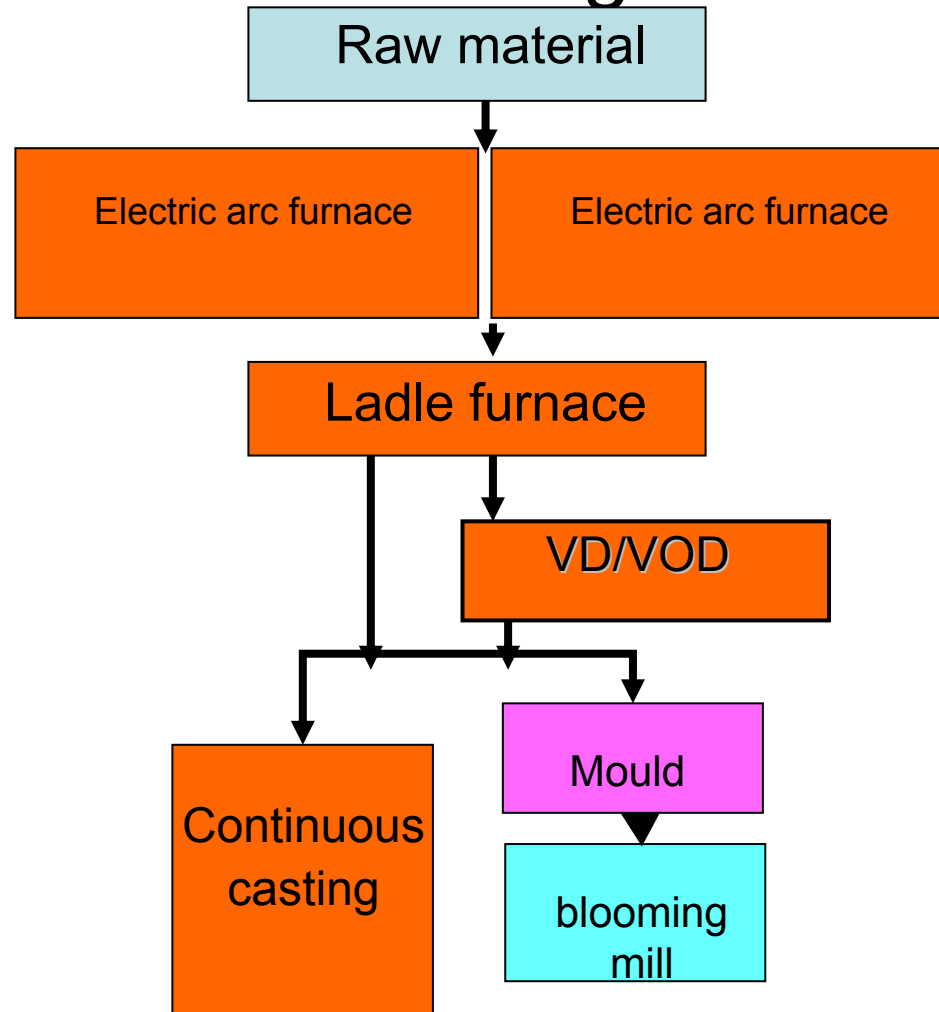
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# Global Carbon BV

- Global Carbon is a leading expert on **environmental consultancy** and **financial brokerage services** in the international emissions trading market under the Kyoto Protocol.
- The company focuses on Joint Implementation (JI) project development in Bulgaria, Ukraine, and Russia, and the EU Emissions Trading Scheme (ETS) in Bulgaria.
- Offices in **Kiev, Donetsk, Sofia, Hague, Moscow**
- Global Carbon is managing a growing portfolio of currently 20 JI projects with a reduction potential of **35 million tonnes CO<sub>2</sub> e**
- Global Carbon have developed and managing **first and only one** JI project that has been registered at the UNFCCC
- Global Carbon have developed emissions factors for the Ukrainian electricity grid.

# JI Project at ISTIL manufacturing method



# JI project at ISTIL (2)

## 1. New transformer for EAF

Decreasing of specific energy sources consumption from **1.96 GJ/t** to **1.85 GJ/t**

## 2. New Steam Generator

Energy losses decrease from **75%** to **3%**

## 3. Soaking pits control system

NG consumption decrease from **54 m<sup>3</sup>/t** to **40 m<sup>3</sup>/t**

# JI project at ISTIL (3)

<b>INTERVENTION</b>	<b>EMISSIONS REDUCTION, tons</b>
New Transformer	59 864
New Steam Generator	89841
Soaking Pits Control System	90149
<b>Total</b>	<b>239 854</b>

# JI project at EMSS

manufacturing method



# JI project at EMSS (2)

- 1. Reconstruction of 19 thermal and heating furnaces**  
NG consumption decrease in **1.9 times**
- 2. Ladle furnace installation**  
Electricity consumption decrease from **950 kWh/t** to **852 kWh/t**
- 3. Decrease of the time of thermal treatment of the forged details**  
NG consumption decrease from **160m<sup>3</sup>/t** до **80m<sup>3</sup>/t**.
- 4. Vacuum Degasser reconstruction**  
Energy resources consumption before reconstruction – **1.16MWh/t** (steam), **0.81kWh/t** (electricity); after reconstruction – **1.92 kWh/t** (electricity)
- 5. New heating system**  
Heat energy consumption decrease from **115 137 MWh/a** to **8 336 MWh/a**
- 6. Modernization of press equipment**  
Replacement of 27 pumps (**500kW**) to 22 pumps (**440kW**)

# JI project at EMSS (3)

<b>INTERVENTION</b>	<b>EMISSIONS REDUCTION, tons</b>
Furnaces Reconstruction	52 571
Ladle furnace instalation	108 561
Thermal treatment time decreasing	127 670
Degasser reconstruction	280 732
New heating system	230 405
Press equipment modernization	130 992
<b>Total</b>	<b>930 931</b>

# JI opportunities for steel and machine building enterprises

The following projects could be approved as a JI Projects:

- Utilization of Blast furnace gas, Oxygen Steel Furnace gas and natural gas through CHP units
- Oxygen Unit reconstruction
- Control systems of production process implementation
- Heat recovery from waste gases

# JI opportunities for steel and machine building enterprises (2)

- Installation of Blast Furnace Gas turbine
- Substitution of OHF by OSF or by EAF
- Continuous casting machine installation
- Ladle furnace installation

# JI opportunities for steel and machine building enterprises (3)

- Burners replacement
- EAF's transformers replacement
- Compressor house replacement
- Substitution of the DHS by local heating systems
- Other energy efficiency measures

# JI potential of the steel sector in Ukraine

<b>2006</b>		<b>Ukraine</b>	<b>EU</b>
Steel production	mln. t	40.9	198.4
Continuous casting process, share	%	30	96
OHF steel production, share	%	45.2	-

# JI potential of the steel sector in Ukraine (2)

		<b>Ukraine</b>
OHF steel production	mln. T	18.5
GHG emissions (OHF steel)	t CO <sub>2</sub> /t steel	0,28
GHG emissions (OSF steel)	t CO <sub>2</sub> /t steel	0,128
GHG emissions (EAF steel)	t CO <sub>2</sub> /t steel	0,028

# JI potential of the steel sector in Ukraine (3)

GHG emissions reduction (OHF - OSF)	mln. t CO <sub>2</sub>	2.8
GHG emissions reduction (OHF - EAF)	mln. t CO <sub>2</sub>	4.7

# Contacts

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