

Annex 8.3 Elements on verification activities under the Industrial Processes Sector

1 EU-ETS versus National GHG Inventory activity data

For the Industrial processes the comparison between the NGHGI list and EU-ETS list it was done based on raw material consumption (eg. limestone and dolomite use) and production (eg. cement, lime, glass, iron and steel production).

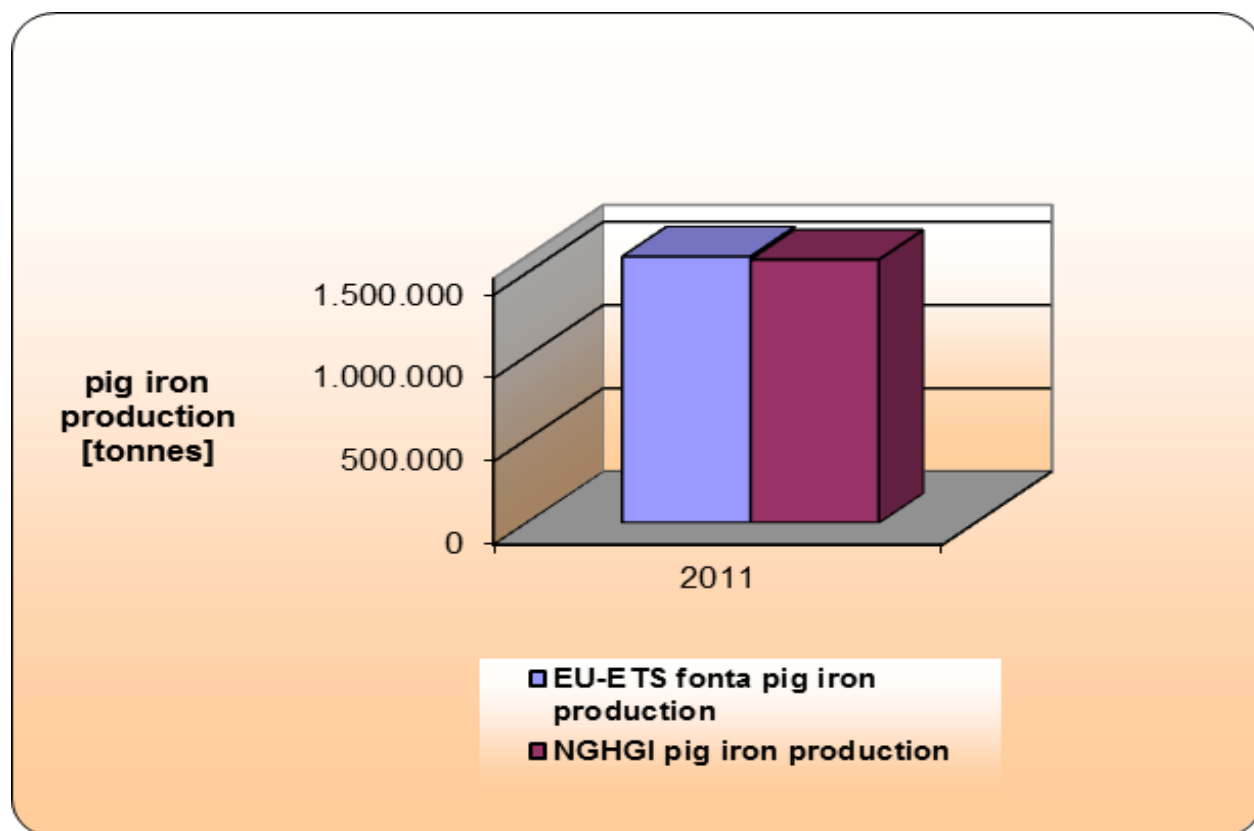
1.1 Iron and Steel Production

- ◆ In accordance with EU-ETS methodology, the data used are coming from the installations with a production capacity exceeding 2.5 tonnes of pig iron or steel /hour. CO₂ emissions are calculated based on mass balance (inputs minus outputs);
- ◆ For NGHGI the data regarding the national production of iron and steel was used, provided directly by the companies. CO₂ emissions are calculated based on iron and steel production.

Table 1.1 The Pig Iron Production in the NGHGI and EU-ETS industrial Sector for the 2011 year

Pig Iron Production (tonnes)	2011
EU - ETS data	1,607,875.26
NGHGI data	1,581,250.53

***Figure 1.1 The Pig Iron Production in the NGHGI and EU-ETS industrial Sector
for the 2011 year***



***Table 1.2 The Steel Production in the NGHGI and EU-ETS industrial Sector
for the 2011 year***

Steel Production (tonnes)	2011
EU - ETS data	3,648,816.00
GHGI - data	3,808,402.41

Figure 1.2 The Steel Production in the NGHGI and EU-ETS industrial Sector for the 2011 year

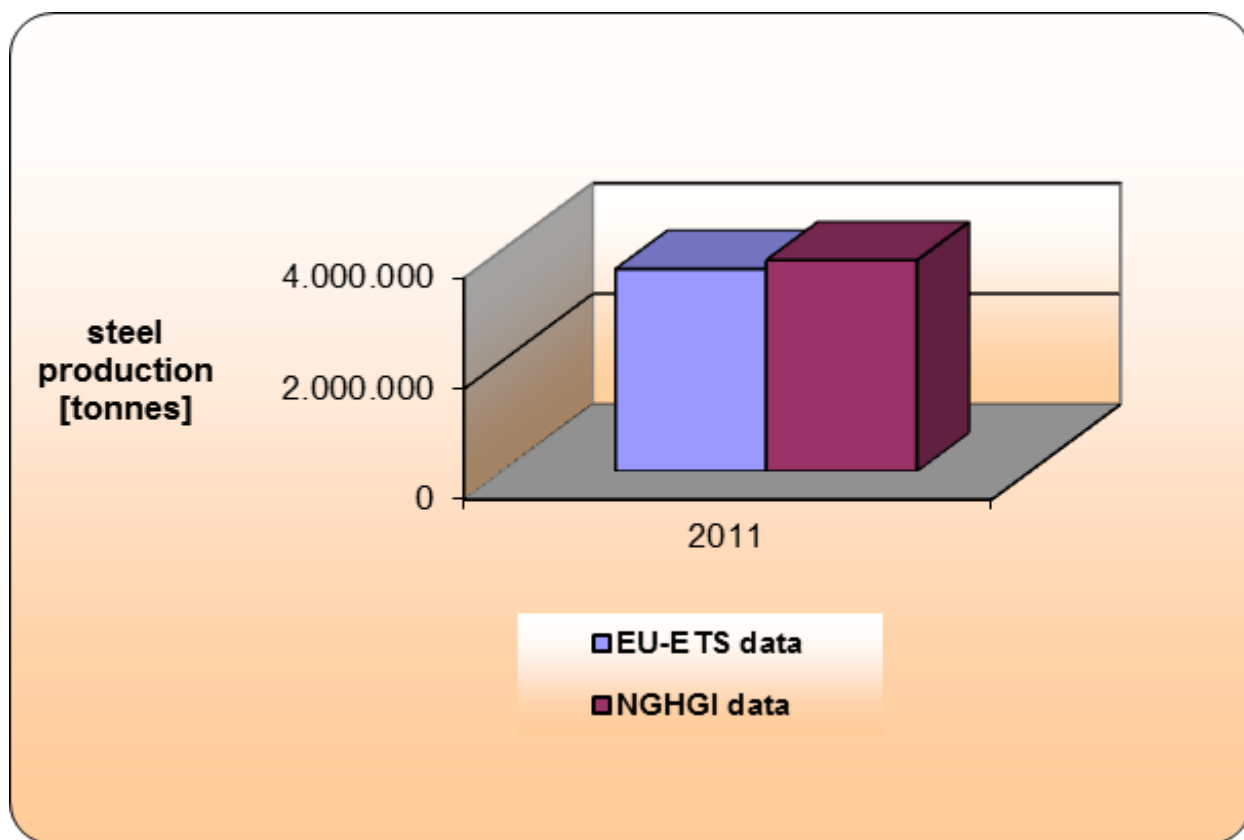
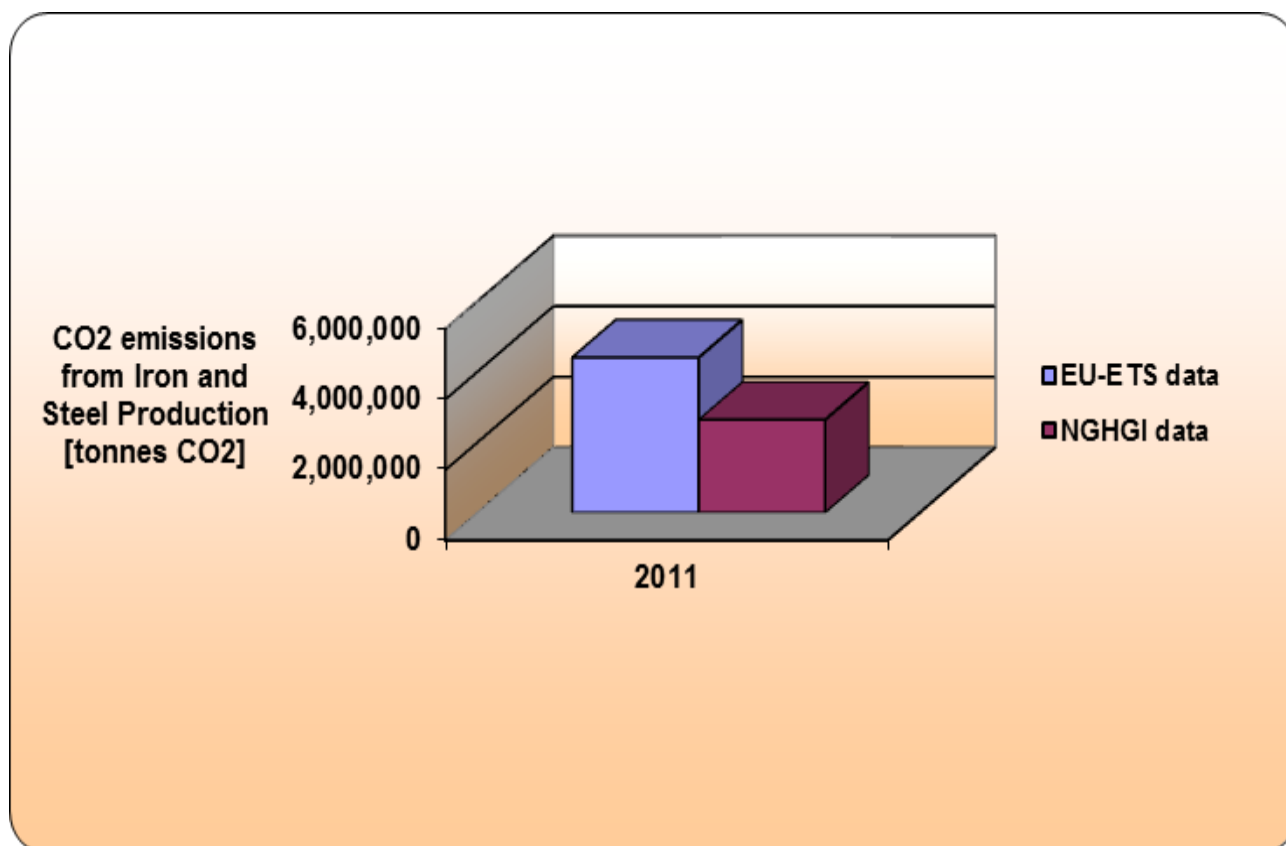


Table 1.3 The CO₂ emissions from Iron and steel production in the NGHGI and EU-ETS industrial Sector for the 2011 year

Iron and Steel Production (tonnes CO ₂)	2011
EU - ETS data	4,395,611.94
NGHGI data	2,632,079.00

Figure 1.3 The CO₂ emissions from Iron and steel Production in the NGHGI and EU-ETS industrial Sector for the 2011 year



1.2 Lime Production

- ◆ In accordance with EU-ETS methodology, the data used are coming from the installations with a production capacity exceeding 50 tonnes of lime /day. CO₂ emissions are calculated based on consumption of row materials (one operator reported CO₂ emissions by production of lime);
- ◆ For NGHGI the data regarding the national production of lime was used, provided by the National Institute for Statistics (including captive lime production). CO₂ emissions are calculated based on production of lime.

Table 1.4 The Lime Production in the NGHGI and EU-ETS industrial Sector for the 2011 year

Lime Production (tonnes)	2011
EU-ETS data	514,256.38
NGHGI data	1,680,349.00

Figure 1.4 The Lime Production in the NGHGI and EU-ETS industrial Sector for the 2011 year

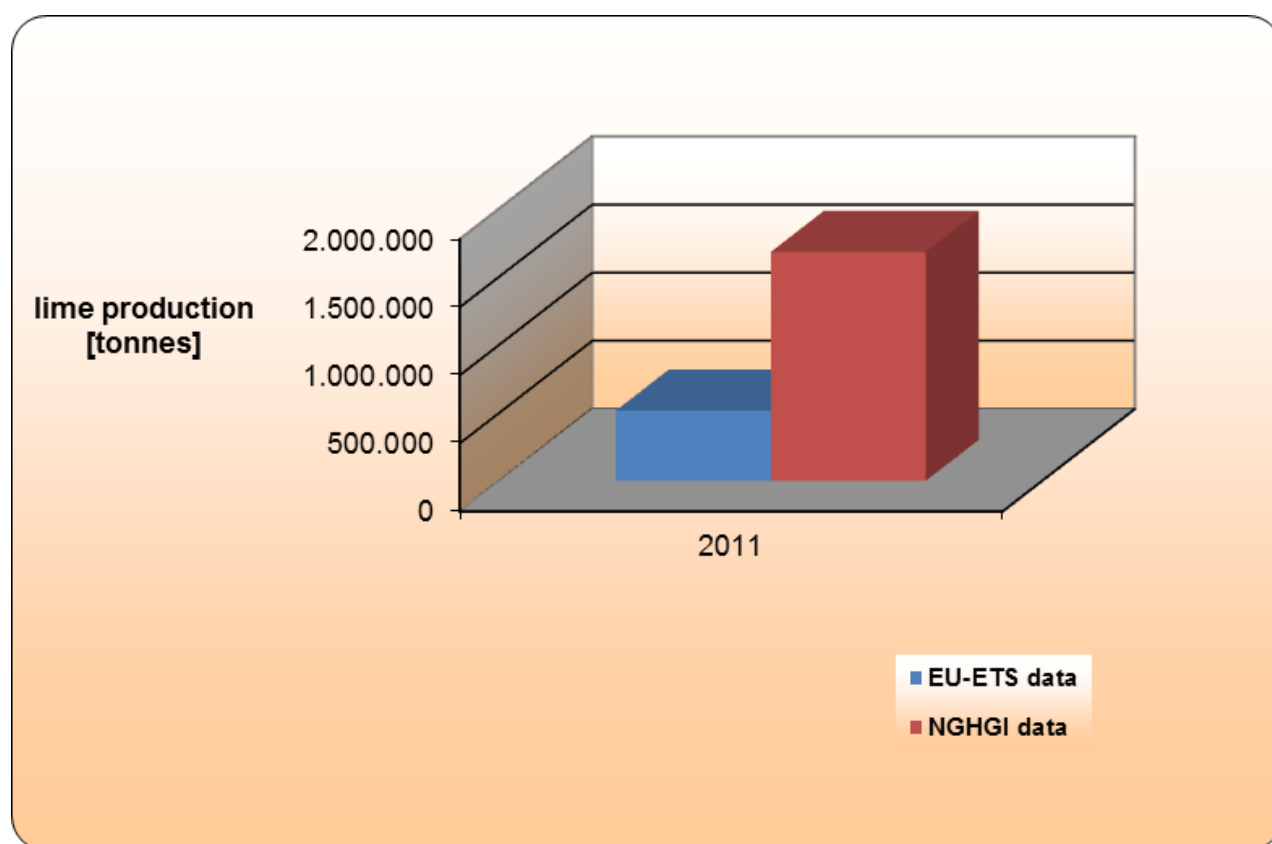
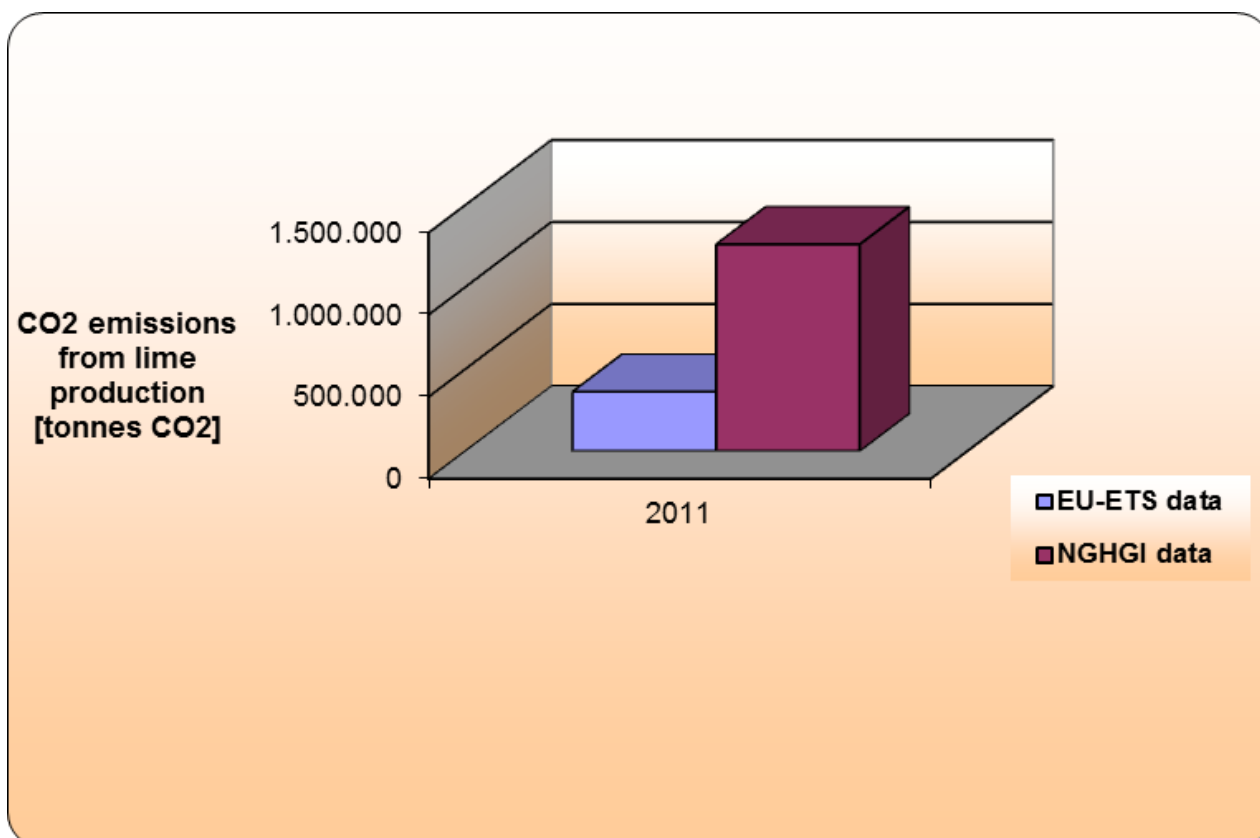


Table 1.5 The CO₂ emissions from Lime Production in the NGHGI and EU-ETS industrial Sector for the 2011 year

CO₂ emissions from Lime production (tonnes)	2011
EU-ETS data	362,224.67
NGHGI data	1,260,410.14

Figure 1.5 The CO₂ emissions from lime production in the NGHGI and EU-ETS industrial Sector for the 2011 year



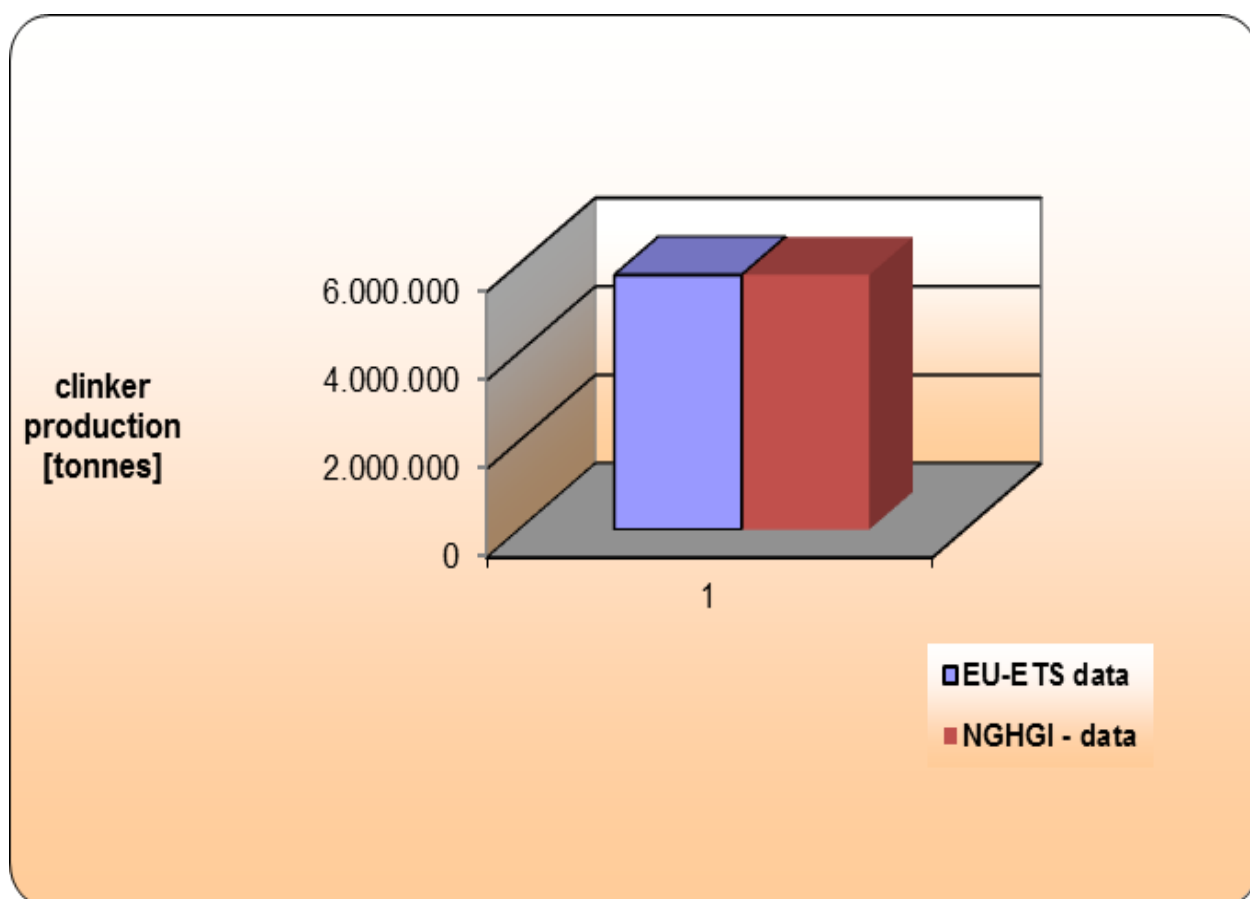
1.3 Clincker production

- ◆ In accordance with EU-ETS methodology, the data used are coming from the installations with a production capacity exceeding > 500 tonnes of clinker /day. CO₂ emissions are calculated based on clinker production;
- ◆ For NGHGI the data regarding the national production of clinker was used, provided directly by the companies. CO₂ emissions are calculated based on clinker production.

*Table 1.6 The Clinker Production in the NGHGI and EU-ETS industrial Sector
for the 2011 year*

Clinker Production (tonnes)	2011
EU-ETS data	5,751,213.90
GHGI data	5,751,213.90

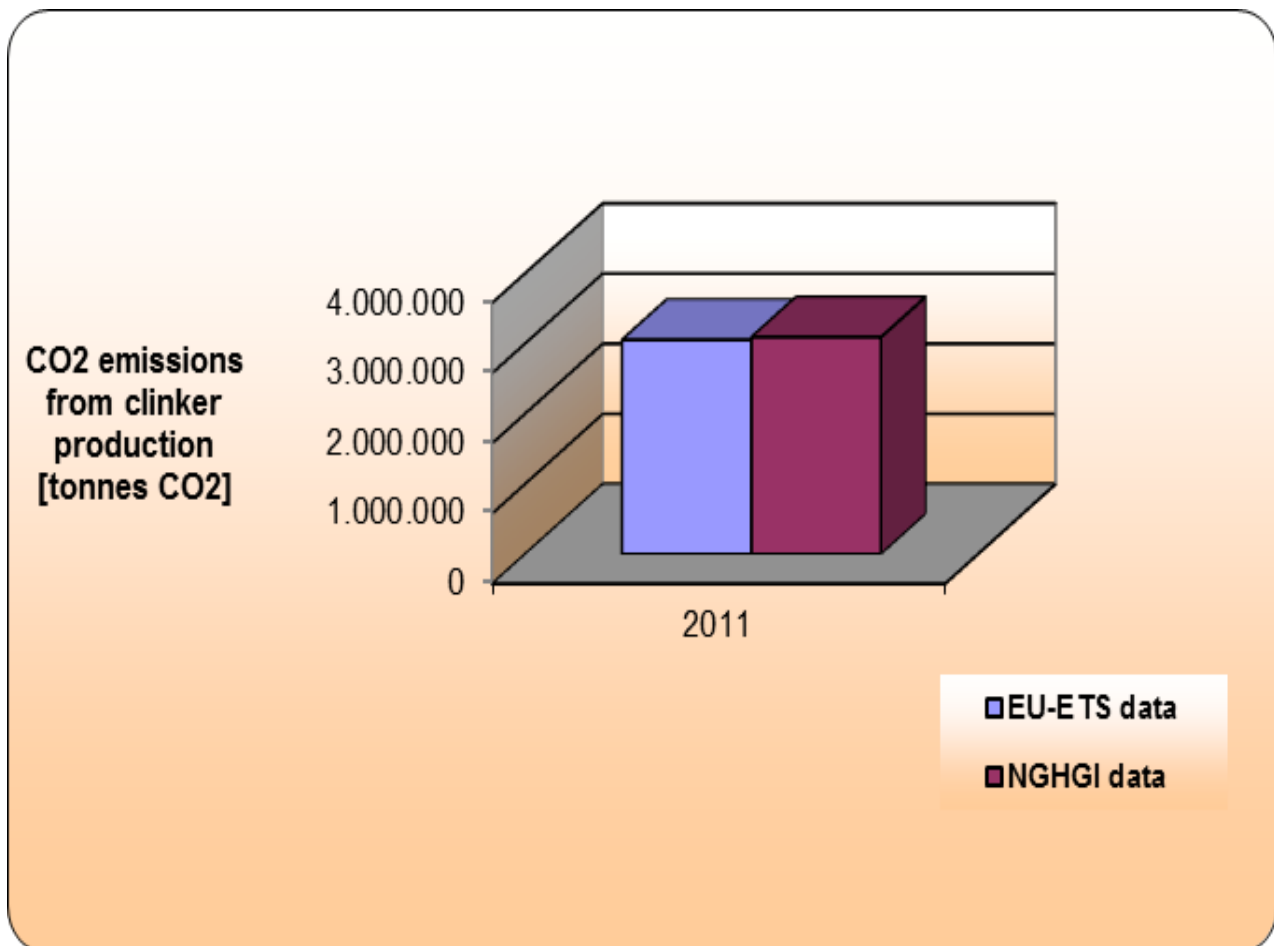
***Figure 1.6 The Clinker Production in the NGHGI and EU-ETS industrial Sector
for 2011 year***



***Table 1.7 The CO₂ emissions from Clinker Production in the NGHGI and EU-ETS industrial
Sector for the 2011 year***

CO ₂ emissions from Clinker Production (tonnes CO ₂)	2011
EU-ETS data	3,050,921.00
NGHGI data	3,088,841.09

Figure 1.7 The CO₂ emissions from Clinker Production in the NGHGI and EU-ETS industrial Sector for the 2011 year



1.4 Glass Production

- ◆ In accordance with EU-ETS methodology, the data used are coming from the installations with a production capacity exceeding 20 tonnes of glass /day. CO₂ emissions are calculated based on the consumption of raw materials (limestone, dolomite, soda ash);
- ◆ For NGHGI the data regarding the national production of glass was used, provided by the National Institute for Statistics. CO₂ emissions are calculated based on the production of glass.

***Table 1.8 The Glass Production in the NGHGI and EU-ETS industrial Sector
for the 2011 year***

Glass Production (tonnes)	2011
EU-ETS data	381,970.98
NGHGI data	379,124.00

***Figure 1.8 The Glass Production in the NGHGI and EU-ETS industrial Sector
for the 2011 year***

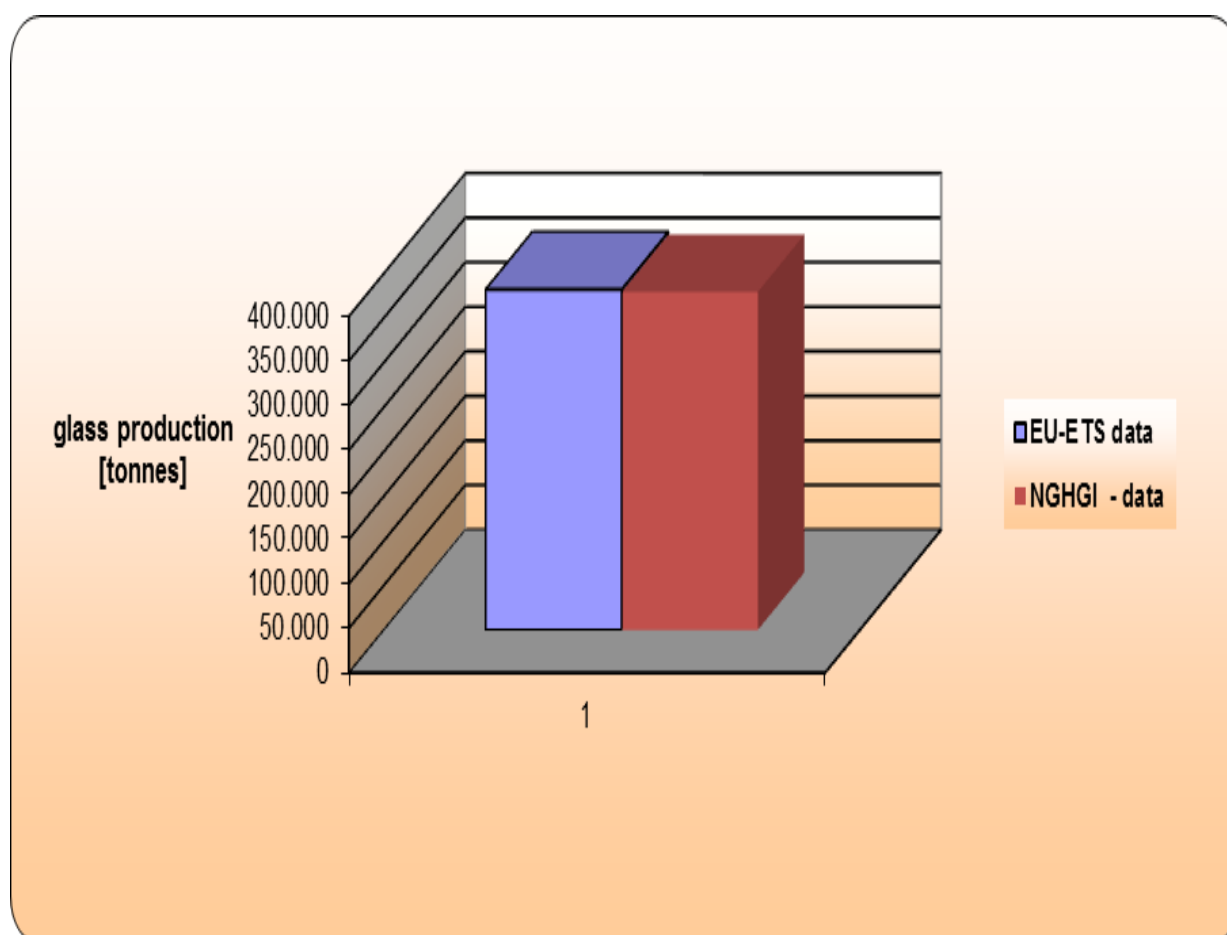
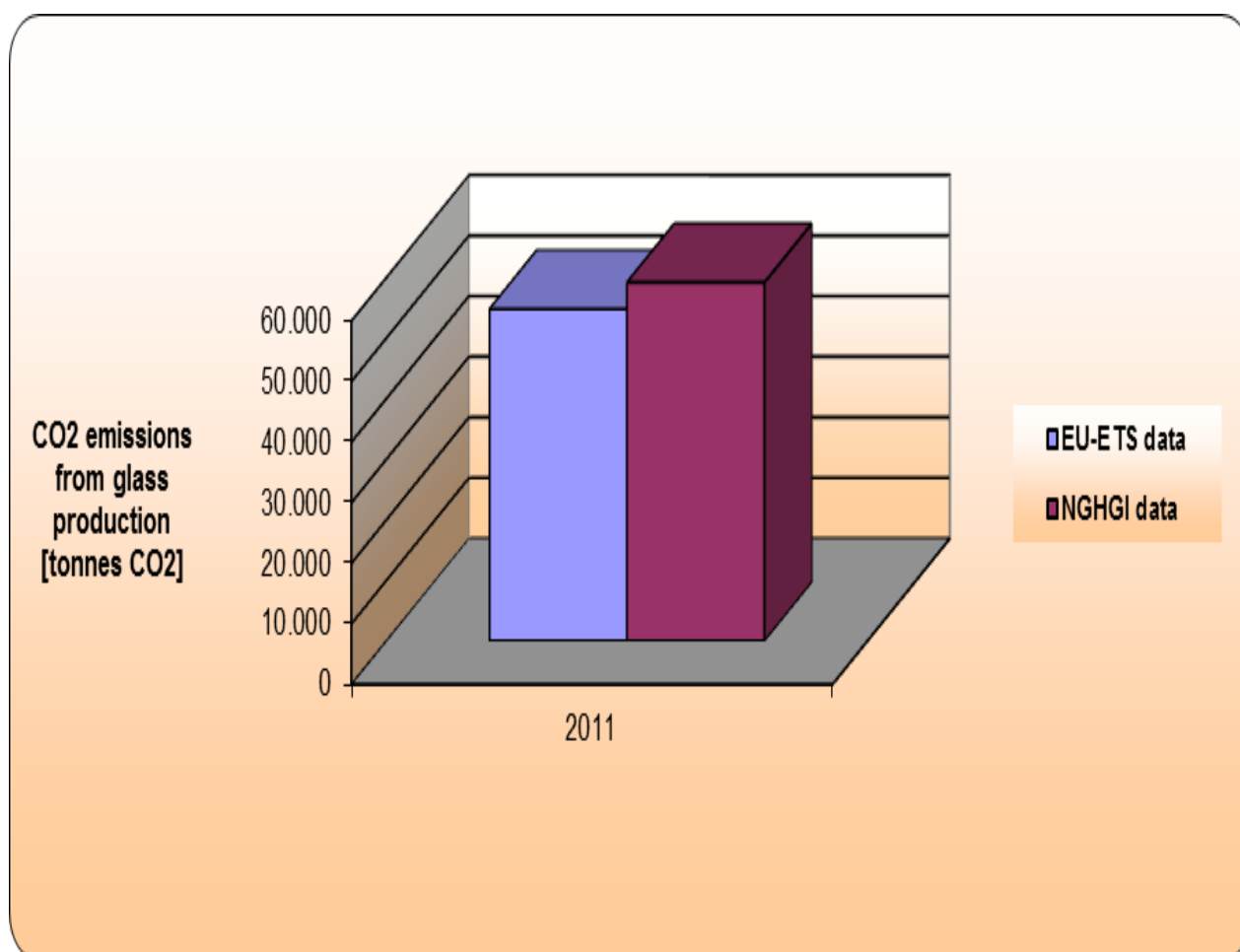


Table 1.9 The CO₂ emissions from Glass Production in the NGHGI and EU-ETS industrial Sector for the 2011 year

CO₂ emissions from Glass Production (tonnes CO₂)	2011
EU-ETS data	54,755.90
NGHGI data	59,148.90

Figure 1.9 The CO₂ emissions from Glass Production in the NGHGI and EU-ETS industrial Sector for the 2011 year



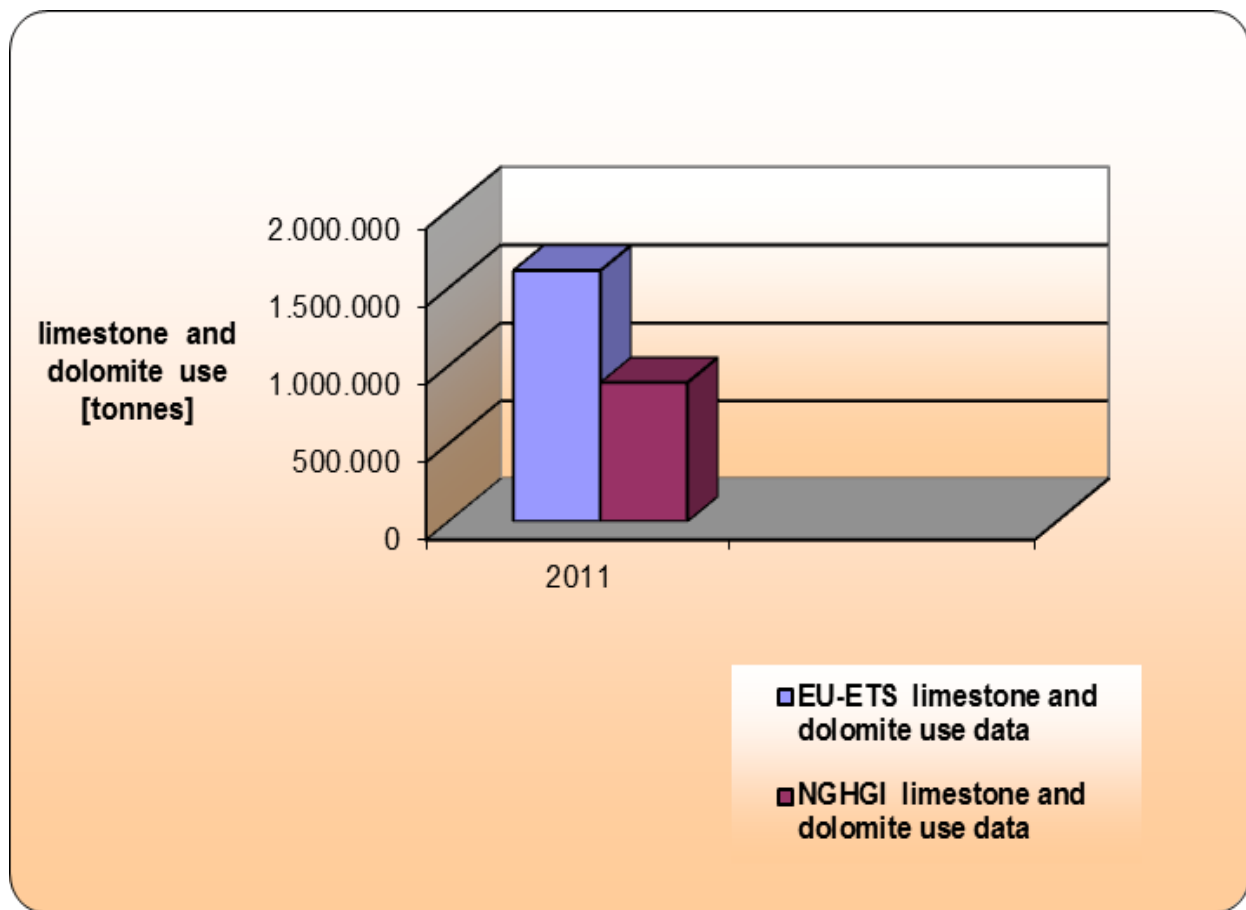
1.5 Limestone and Dolomite Use

- ◆ In accordance with EU-ETS methodology, the data regarding the limestone and dolomite use are coming from the cement, lime, paper, sugar, ceramics, iron and steel production;
- ◆ For NGHGI the data provide from iron and steel producers, pulp and paper producers, sugar mills producers, ceramics plants.

Table 1.10 The Limestone and Dolomite Use in the NGHGI and EU-ETS industrial Sector for the 2011 year

Limestone and Dolomite Use (tonnes)	2011
EU-ETS data	1,611,286.78
NGHGI data	891,863.16

***Figure 1.10 The Limestone and Dolomite Use in the NGHGI and EU-ETS industrial Sector
for the 2011 year***



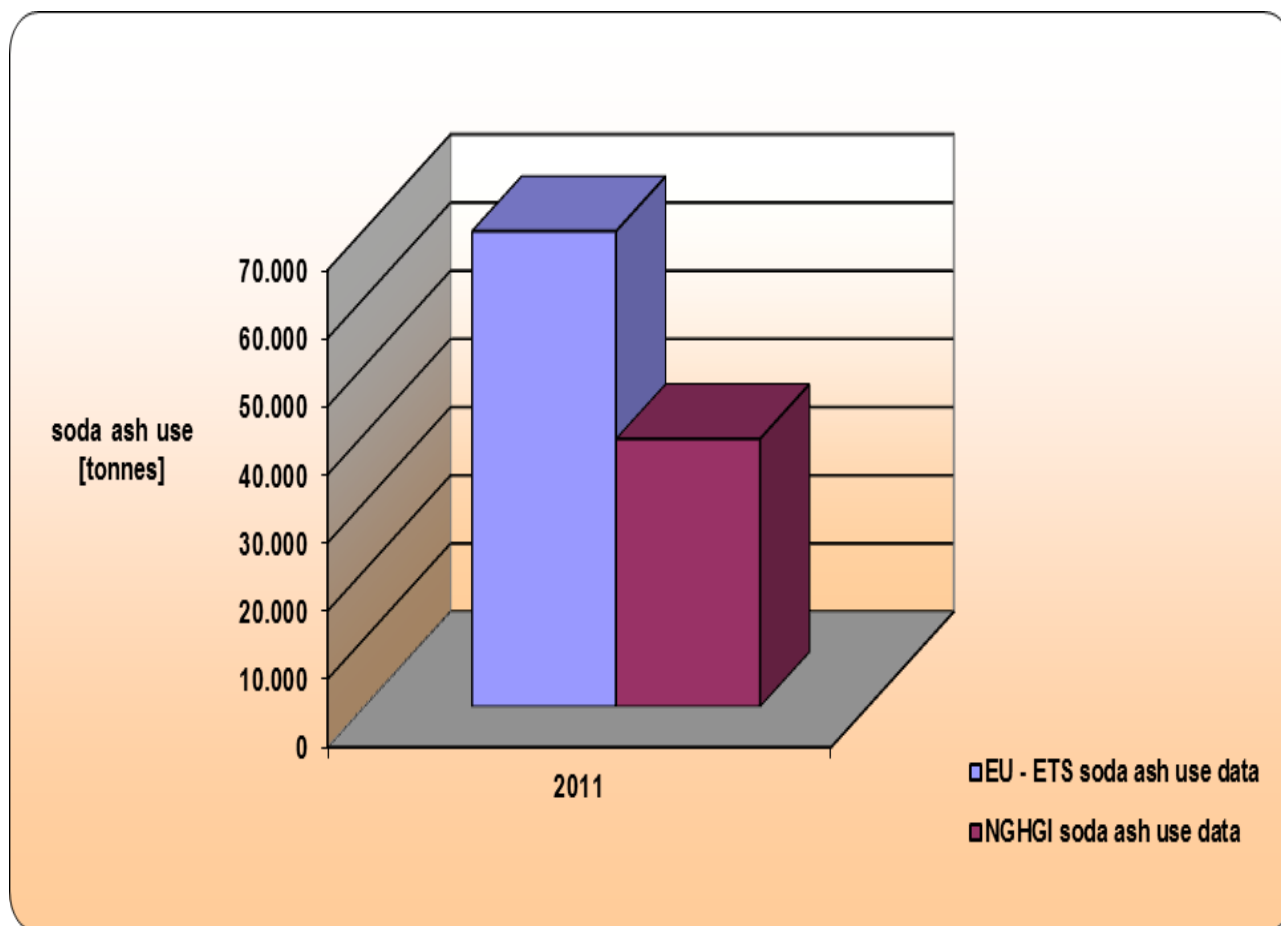
1.6 Soda Ash Use

- ◆ In accordance with EU-ETS methodology , the data regarding soda ash use, are coming from the installations who produce the glass with a production capacity exceeding 20 tonnes of glass /day;
- ◆ For NGHGI the data regarding the soda ash use are provide from pulp and paper producers, chemicals producers, flue gas desulphurization, water treatment, soap and detergents producers.






***Table 1.11 The Soda Ash Use in the NGHGI and EU-ETS industrial Sector
for the 2011 year***

Soda Ash Use (tonnes)	2011
EU-ETS data	69,737.56
NGHGI data	39,280.80

***Figure 1.11 The Soda Ash Use in the NGHGI and EU-ETS industrial Sector
for the 2011 year***



2 Comments on the comparison between EU-ETS and NGHGI

-  For the **Clinker Production**, the activity data (AD) and CO₂ emissions are similar (NGHGI list and EU-ETS list) because in both cases are calculated based on clinker production.
-  For the **Iron and Steel Production**, the AD are similar and the CO₂ emissions are different (NGHGI list and EU-ETS list) because in the EU-ETS methodology case the production capacity was applied and CO₂ emissions are calculated based on mass balance (inputs minus outputs) and for NGHGI CO₂ emissions are calculated based on iron and steel production (provided directly by the companies).
-  For the **Glass Production**, the AD are similar and the CO₂ emissions are different (NGHGI list and EU-ETS list) because in the EU-ETS methodology case the production capacity was applied and CO₂ emissions are calculated based on the consumption of raw materials (limestone, dolomite, soda ash) and for NGHGI CO₂ emissions are calculated based on the production of glass.
-  For the **Lime Production**, the AD and the CO₂ emissions are different (NGHGI list and EU-ETS list) because in the EU-ETS methodology case the production capacity was applied. For NGHGI CO₂ emissions are calculated based on production of lime.
-  For the **Limestone and Dolomite Use**, AD are different (NGHGI list and EU-ETS list) because in the EU-ETS methodology case the limestone and dolomite consumption was used, the AD coming from the lime, paper, sugar, iron and steel production. For NGHGI the data provide from iron and steel producers, pulp and paper producers, sugar mills producers, ceramics plants.

✚ For the **Soda Ash Use**, the AD are different (NGHGI list and EU-ETS list) because in the EU-ETS methodology case the production capacity of glass was applied. For NGHGI the data regarding the soda ash use are provide from pulp and paper producers, chemicals producers, flue gas desulphurization, water treatment, soap and detergents producers.