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as for the non-ferrous metals industry, with worldwide activities. CRM is

located in Liège and in Ghent with two teams working in close collaboration on basis of several unique world-class pilot lines

In the steel industry, the main CRM activities are aiming at the innovation in the fields of new generic steel grades, advanced surface engineering and new eco-friendly steel processes. Among all its research activities. the most recent innovations of CRM, it can be mentioned:

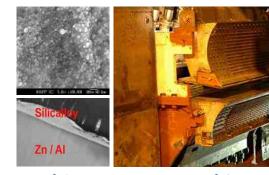
- development of new (low cost and environmental friendly) passivation/ conversion protection layer (Silicalloy) for galvanized steels (fig. 1),
- in hot mills, pure oil lubrication which is much more efficient than conventional emulsion, plus innovative high turbulence low pressure cooling (fig. 2),
- development of new blast furnace process to reduce CO<sub>2</sub>

Thanks to its transversal competences, CRM is increasingly involved with guidance and technology transfer towards the

CRM is a collective Research Centre SME's. Also CRM has consolidated its partnership with other for the Iron and Steel industry as well collective research centers and developed new competences, participating actively in the Walloon Plan Marshall.

> The CRM researches are financed by contributions from the Active Members (ARCELORMITTAL and CORUS) and the Associate Members as well as by subsidies from the Public Authorities (Belgian Regions and European Union).

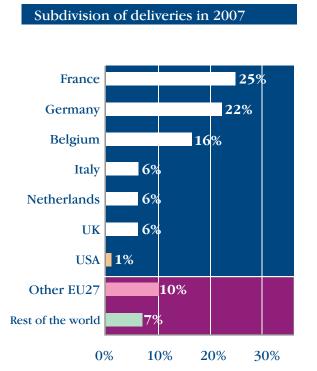
Since early January 2007, CRM has been ISO 9001 certified for



# BELGIAN STEEL IN FIGURES

2007	2007/06					
10692	-8%					
7147	-13%					
3545	2%					
1521	0%					
9458	-12%					
752	-3%					
4893	-15%					
4588	-5%					
970	-1%					
Other key figures of the sector in 2007						
2007e	2007/06					
16960	-1%					
12000	9%					
2550	8%					
	10692 7147 3545 1521 9458 752 4893 4588 970 2007e 16960 12000					

Exports (M€)



wenue Ariane 5 - 1200 Brussels • Tel.: +32 (0) 2 509 14 11 • Fax +32 (0) 2 509 14 00

**GSV** is the professional organization representing the Belgian steel industry

		on 31.12.2/
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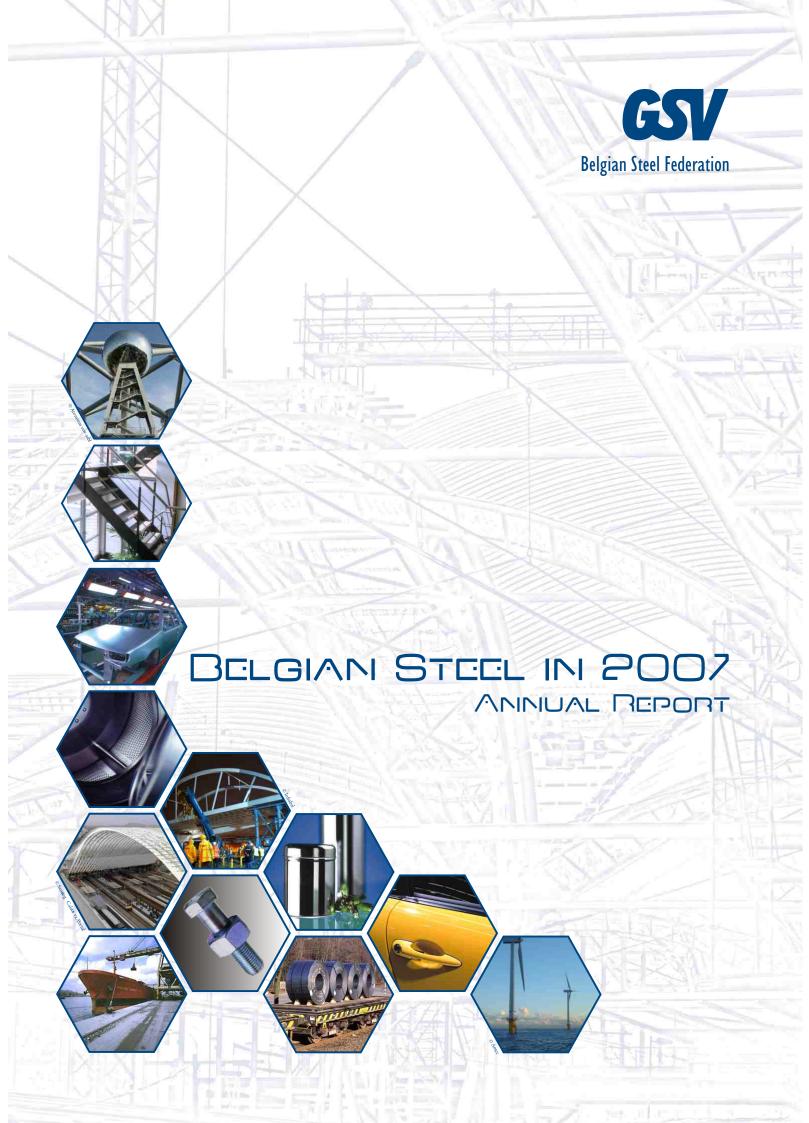
## **Member Companies**

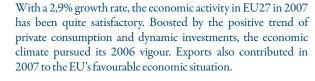
ARCELORMITTAL Group		
ArcelorMittal Gent nv	Gent (09) 347 31 11	www.arcelormittal.com/gent
sa ArcelorMittal Liège	Flémalle (04) 236 11 11	www.arcelormittal.com/liege
sa ArcelorMittal Packaging Belgium	Tilleur (04) 236 18 37	www.arcelormittal.com/liege
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ArcelorMittal Genk- Stainless Europe nv	Genk (089) 30 21 11	www.ugine-alz.com
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sa Carsid	Marcinelle (071) 60 52 21	www.dufercobelgium.com
Gruppo RIVA		
sa Thy-Marcinelle	Charleroi (071) 27 01 11	www.rivagroup.com
ELLWOOD Group Inc.		
Ellwood Steel Belgium (Division of EGI)	Seraing (04) 338 85 50	www.elwd.com
CORUS Group		
sa Segal	Ivoz-Ramet (04) 273 73 73	www.corusgroup.com
Gruppo BELTRAME		
sa Laminoirs du Ruau	Monceau s/Sambre (071) 27 09 12	www.beltrame.it

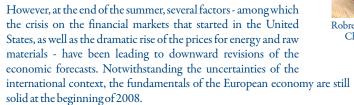
# **GSV Management**

**Robert JOOS** General Director Luc BRAET Director

Responsible editor: Robert JOOS







In this context, the 2007 steel market has been booking nice performances. The trend in the construction sector stayed positive for the 4th year in a row, in spite of the first signs of a slowdown in the course of the year. Intense investments, in the EU as well as on the export markets, have been lifting the sectors of metallic and mechanical construction to new heights. The automotive sector picked up again after the weakening of 2005-2006.

As for the offer side, the steel producers have had to face during the second half destockings, among others by traders, as well as further considerable import volumes. To guarantee a market in equilibrium, it is necessary that the offer - internal as well as external supply - keeps pace with the evolution of

In 2007, the EU27 has imported 32 million tonnes of steel products (semis excluded) - for a consumption level of some 192 million tonnes - i.e. a 100% rise in 2 years' time. Imports from China, now the first third country supplier of the EU, have gone up from 1 million tonne to nearly 10 million tonnes in the same period. Faced with this extreme expansion, the European steel producers have been undertaken the necessary interventions with the European authorities in order to safeguard their legitimate interests and respect for the international rules for global fair competition. The EU's cautious application of the WTO's rulings on trade defence makes it the most open region in the world. It is therefore important that all suppliers of the EU market follow the same regulations.

Taken into account the magnitude of the new economies' boom, their swift industrialisation and their population growth, the demand and by consequence the production of steel will continue to rise at world level, with different intensities by zone.

The raw materials' and energy markets will continue to stay under pressure, at least at the short term and even for the medium range. The successive price rises for iron ore - up to a level 4 times the 2003 one - are clearly demonstrating this issue. Only the exploitation of new mines will lead to a stabilisation of the ore prices. The projected alliance between two major mining groups - BHP and Rio Tinto - which would create a group controlling 70% of the iron ore market, would seriously jeopardize the functioning of the market due to over-concentration of the offer side.

The iron ore case is not an isolated one: alloys, scrap, cokes, energy and last but not least freight, all have been booking during recent years dramatic price rises, which have only been partially passed on by the steel producers in their

For the Belgian and European steel companies, long-term security of supply is the more necessary as the countries which are rich in raw materials are ever more tending towards a policy of retention in favour of their domestic

Confronted with this preoccupying evolution, the European authorities have to provide as soon as possible the definition of a coherent geostrategic policy to guarantee our companies have free access to raw materials and



The forecasted world crude steel production growth will lead to a rise of CO<sub>2</sub> emissions of the sector, the more as the new capacities will essentially be based on the blast furnace process and will be set up in countries where less efficient production units - which in our regions have been dismantled long ago - are still operational.

Concerning climate change and other environmental issues, the Belgian steel producers and their European colleagues have been booking important performances since many years. Therefore, they insist the European authorities should succeed in the

conclusion of a global agreement with all major producing countries, because of the worldwide dimension of the challenge, the globalisation of the steel market and the risks of distortions of competition.

If not, every unilateral EU engagement risks to stay ineffective, taken into account the capacity expansion in the emerging countries, among which China, where further development of production is taking place. China is representing already today nearly 50% of the CO<sub>2</sub> emissions of the steel sector worldwide, compared to a 36% part in global production.

In the implementation of its climate change policy, the EU has to integrate

not only the companies' numerous efforts of the past, but also has to consider that

- 1°) the European steel companies among which the Belgian ones are at the optimum of their technical possibilities within the best available
- 2°) legal certainty has to be guaranteed so that investments and research efforts can pay off
- 3°) considerable resources have to be made available to come to a technological breakthrough

The Belgian steel industry, which is actively engaged in the ULCOS-project (Ultra Low CO<sub>2</sub> Steelmaking) - aiming at a substantial reduction of CO<sub>2</sub> emissions - and in carbon capture and storage studies, is thus taking up the environmental challenge and stresses its determination in being "part of the

In 2007, the steel companies have been setting up important investment programmes concerning energy, environment, process, product innovation and valorisation of by-products. This demonstrates the confidence of the international groups in their Belgian production sites and knowledge centres. These efforts are the driving force of progress, growth and stronger competitiveness towards other producers and materials.

In connection with technological developments, the steel companies are pursuing their training efforts in order to update knowledge, competence and know-how of the personnel, and to optimize their qualifications.

When drafting their training programmes, the steel companies make sure the available means are equally divided. The evaluation reports and financial surveys confirm the excellent scores of the sector, in terms of costs as well as

The Belgian steel industry has also set itself the priority objective to watch closely over health and safety of all its people. On the basis of an accurate inventory of the risks, prevention plans are being worked out which repeat campaigns for sensibilisation, instruction and control, also intended for subcontractors. The goal is: "zero accident".

Within an international economic context which is slowing down, highly competitive and more tense, it is necessary on the one hand to further develop flexibility in terms of volume and, on the other hand, to be able to make an appeal to all the forces. Hence the crucial importance of pragmatic consultations and a constructive social dialogue.





In the context of the interprofessional negotiations, the social partners of the steel sector have concluded in Spring 2007 a sectoral agreement for the years 2007-2008.

This general agreement is contributing to a sectoral social culture, without devaluating the negotiations at company level, which are a tradition in the steel sector. It emphasizes the pursuit of the policy of competence development and professional training, as well as the absolute priority the Belgian steel sector gives to health and safety at work, for all personnel and following the highest standards.

Keeping a good atmosphere and respect for the usual consultation practices are recognized by all actors as a conditio sine qua non for a performant and harmonious functioning within an extremely competitive international



## Health & Safety at work

For the steel companies, health and safety at work are not only a priority goal but above all a social and ethical engagement.

In this context, the prevention policy is being evaluated on a regular basis and goal-oriented action plans are being set up aiming at the establishment of a safety culture at all levels, including the personnel of external companies. Risk limitation is being 2 achieved through motivation, training of good practices, and attitude correction with a particular attention for strict respect of safety rules.

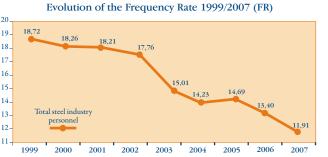
# Competence development and professional training

Competence is the key project of the steel companies. Competence development and management are being promoted and mean an essential progress for the companies and their personnel.

Programmes for professional training intend the personnel to reach a competence and qualification level corresponding to the evolving needs of activity in the steel sector. They are being debated in the works' council and regular communication on their implementation and evaluation is

On the basis of enquiry data and social reports, one can say that over the last six years, the steel companies have more than fulfilled the interprofessional objective (i.e. an overall effort of 1,9% of the total wages): indeed, in 2001-2006, the steel industry has spent on average the equivalent of 2,92% of the labour costs for training of the workers. In 2006, the participation rate of the personnel in training measures was of 68%, i.e. a performance index well over the EU Lisbon objectives (50% participation rate).





 $FR = \frac{\text{Number of accidents with at least one day incapacity to work}}{x \cdot 10}$ 





RODUCTION - CONSUMPTION

# 5th Year of growth, over 7,5%

The world crude steel production of 2007 went up by nearly 8% to 1.344 million tonnes, a further considerable growth attesting the extent of the demand for steel, especially in the emerging countries. China, with a production of 489 million tonnes, has been consolidating its number 1 world rank, in terms of production as well as consumption. Important growth rates have also been booked in India, Russia, Turkey, Brazil and the Middle East; the BRICcountries' (Brazil, Russia, India, China) share in world production passing from 30% in 2000 to 48% in 2007.

	Mt	2007/2006	2007/1998
J27	210	1%	10%
iina	489	16%	327%
an	120	3%	29%
SA	98	0%	-1%
ssia	72	2%	65%
lia	53	7%	126%
uth Korea	51	6%	29%
azil	34	9%	31%
orld	1 344	8%	73%

In Belgium, the crude steel production of 2007 has gone down by 8% to 10,7 million tonnes, mainly due to refurbishment works at the Charleroi blast furnace. On the other hand, the necessary preparations had been engaged for the relighting - with actual restart in February 2008 - of the blast furnace at Seraing (Liège).

Over 31% of world production, i.e. over 420 million tonnes have been generated in electric arc furnaces, on the basis of recuperated scrap, which highlights the recyclability of steel. This process, which is sparing more CO<sub>2</sub> emissions, has however its limitations due to a short supply of scrap, particularly in the emerging countries. For comparison: the part of electrical crude steel production reaches 40% in EU27 but only 22% in Asia, and even a mere 11% in China. The high demand for iron ore is thus mainly caused by the vigour of production in countries relying essentially on the blast furnace / oxygen steel mill process.



# Concentration and globalisation

The world steel sector still has a relatively low concentration rate. In 2007, the share of the ten largest producers was 27% (22% in 1997), i.e. a largely lower figure than in sectors like ores, automotive, appliances. The advance of China is also illustrated by the presence of four Chinese producers in the Top 10, whereas there was none at all 10 years ago.

Globalisation is still accelerating, with a 350 million tonnes cross-border steel trade. China, traditionally a steel importing country, has become a net exporter two years ago. Chinese steel exports to EU27 have passed from 1,1 million tonnes finished products in 2005 to 9,5 million tonnes in 2007 (+740%). The deficit on the EU27 steel trade balance has gone up to 9,4 million tonnes of finished products in 2007. Given the openness of the EU market there aren't even custom duties on the EU import of steel products - the steel producers have been alerting the European authorities to the necessity that WTO rules be respected by all, in order to avoid competition distortions at the expense of the steel industry in Europe.



#### Continuous buoyant demand in 2007

In 2007, world steel consumption has grown by 6,6%, and by over 13% in the BRIC countries, which are highly dynamic because of their huge needs for infrastructure. In EU27, the demand for steel, in pursuit of its 2006 vigour, stayed favourable during the first half, but was slowing down at the end of the year. At mid-2007, an economic reversal showed up, although the fundamentals stay positive with healthy activity levels. In general, throughout the year, steel consumption in EU27 has been progressing by 3,4% (2,1% in EU15). Although the world economic situation is being overshadowed by several threats and uncertainties, 2008 should be a positive year for the steel





### SUSTAINABLE DEVELOPMENT



### Climate change

#### Emission Trading System in its effectual period The year 2007 has ended the trial period 2005-2007 of the

EU emission trading system. On 1 February 2008, Belgium reached a policy agreement concerning the allocation plans for CO, emission rights

during the 2008-2012 period, during which the Member States have to realize their commitments.

### After 2012, the EU's ambitious objectives will require a global approach.

By 2020, the EU aims to optimize energy efficiency by 20%, reach a 20% share of renewables in final energy consumption and reduce greenhouse gas emissions by 20% compared to 1990 and even 30% in the event of an international

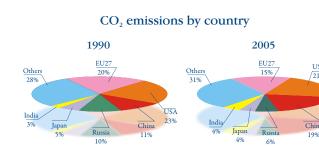
An unilateral EU commitment would heavily burden the competitiveness of the European industry, particularly of the steel sector. In 2007, nearly two thirds of world steel production have been realized in countries without reduction engagements in the context of the Kyoto Protocol; moreover, 90% of capacity expansions is taking place in these

### Steel contributes to sustainability in various areas.

Through scrap recycling, the steel sector contributes to the saving of primary raw materials: at world level, the consumption of 500 million tonnes of scrap a year equates with the non exploitation of some 1.500 million tonnes of

Concerning production processes, the major steel groups are participating in the ULCOS-project (Ultra Low CO, Steelmaking). This new generation of blast furnaces aims - at medium/long term - to reduce CO<sub>2</sub> emissions considerably, by some 50%.

In terms of product innovation, new steel applications are being developed which offer CO<sub>2</sub> mitigation potentials for example for energy efficient housing, higher efficiency for electricity generation, lightweight vehicles and wind power



### **REACH: Implementation - A pragmatic** approach is necessary.

The European REACH - Registration, Evaluation, Authorisation of Chemicals - regulation has come into force on 1 June 2007. It requires from producers, importers and downstream consumers a compulsory registration of substances, with description of the risks linked to their use.

Within Eurofer, the steel producers are coordinating their efforts and are preparing to participate voluntarily in the non compulsory pre-registration period, planned as from June

#### **Energy: Optimize security of supply**

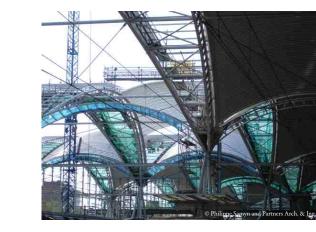
The objective imposed on Belgium to realize 13% renewable energy by 2020 is particularly constraining.

Concerning security of supply, all options for electricity production have to stay open, including alternative production methods whose possibilities have to be evaluated on the basis of their technical and economic feasibility, including nuclear energy. The choices to be made have to guarantee in the first place stability and continuity, which are essential to satisfy the basic needs of the industry and of the steel industry in particular.



Sustainable Construction),

Steel Promotion - Information



the Steel Information Centre has organized a teachers' day, to show how to make the "designers of tomorrow" aware of the new applications and possibilities of steel products in their

Sustainable construction implies in the first place that the building techniques are irreproachable. Apart from new publications of examples of calculations for steel constructions, according to Eurocode 3 and Eurocode 4, the Steel Information Centre is setting up in 2008 two large projects pursuing that

The first one involves, in the years to come, the publication of manuals to explain a correct engineering of steel materials. A second one will be presenting technical construction details that satisfy all new standards: thermal, acoustic and energetic ones, as well as concerning fire safety.



In construction projects, sustainability is ever Sustainable construction also means fireproof building. more involved. The Steel Information Centre is

The Steel Information Centre is organizing special events meeting this concern by focusing on qualitative, about this subject. The issue has also been broadly debated i.e. sustainable, applications of steel as a material. during the 2007 edition (12th September) of the Steel Construction Day in Luxemburg. On this occasion, the In collaboration with CeDuBo (Centre for Luxemburg innovative contributions to the Steel Construction Contest have been awarded.

The same day, the Steel Information Centre has taken the initiative to sign a collaboration agreement with several similar centres in Europe, for a larger, optimized and quicker diffusion of knowledge about steel use.

The Steel Information Centre has also been visiting construction projects, in Belgium and abroad, to put the spotlights on their performances regarding the optimal combination of fast realisation, efficiency, safety and



The magazine Staal\_Acier and the website www.infosteel.be are the tools for up-to-date media communication and knowledge transfer towards a wide interested public.