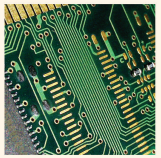
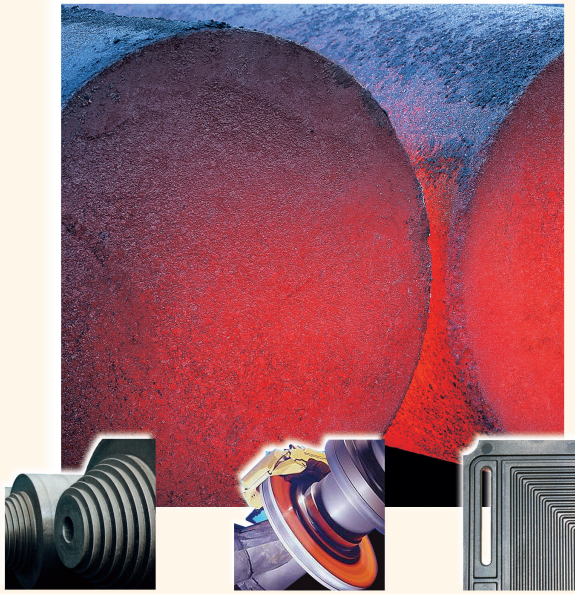
ECGA

EUROPEAN CARBON AND GRAPHITE ASSOCIATION



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ANNUAL REPORT

2003

1. The industry's competitiveness at stake

Following the European Union's enlargement in May 2004 the EU had started preparing new merger control rules for 21st century. This new merger control law would come into force in May 2004 at the same time as the enlargement.
The Merger Regulation was first adopted in 1989 and took effect on 21 December 1990. It created a one-stop shop where companies apply for regulatory clearance for mergers and acquisitions above certain worldwide and European turnover thresholds.
The new Regulation introduces some flexibility into the investigation timeframes while retaining the much praised predictability, reinforces the "one-stop shop" concept, and clarifies that the Commission has the power to investigate all types of harmful scenarios in a merger, from dominance by a single firm to the effects stemming from a situation of oligopoly that might harm the interests of European consumers.
The new legal text is part of a package of comprehensive reforms, launched in December 2001, for improving what was already a highly rated merger control regime. The package includes guidelines on the assessment of mergers between competing firms (so-called 'horizontal guidelines') which build on the experience acquired in the last 13 years as well as on court decisions. The objective is to provide guidance to companies and the legal community alike as to which mergers may be challenged.

1.1 EU energy policy

Kyoto Protocol

According to Commission statistics Sweden and UK are the only two EU countries on track to meet their target for cutting greenhouse gas emissions by 2012. At the current level of progress 13 out of the current 15 Member States will miss the reduction targets. The EU Environment Commissioner Wallström announced further actions under the European Climate Change Programme.

Energy efficiency

The European Commission has proposed that Member States should ensure 1 % energy savings annually from the private sector and 1,5 % from the public sector. This is part of a policy recommendation which also includes a proposal for a Directive on electricity infrastructure and security of energy supply, a revision of the Trans-European Networks of energy and a Regulation on cross-border trade in gas.

Emission trading

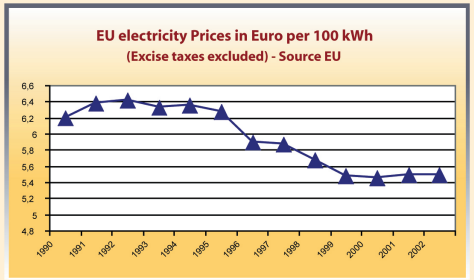
Within a year the EU emission trading scheme will come into effect. However, much still remains to be done. The European Commission is still expected to produce public guidelines for the Member States on how to draw up their national allocation plans. The format for monitoring and reporting should have been 3 months late, but has just been approved by the Member States in March 2004.

Seeking alternative energy sources: The hydrogen economy

The European Commission recently joined the "International Partnership for the Hydrogen Economy" (IPHE) alongside 14 nations (incl. France, Germany, and the UK). The aim of the IPHE is to stimulate research and development towards increased use of hydrogen in transport and other areas. It is now considering developing an action plan for a European Hydrogen and Fuel Cells Technology Partnership. A major research project on fuel cell technology was approved in 2003.

Energy prices

The secure supply of energy and the development of energy prices are a key factor for the carbon and graphite industry. Additional costs incurred by an emission trading scheme would not be welcome.



1.2 New European Chemicals Policy

In autumn 2003 the European Commission tabled its proposal for a new safer EU Chemicals Policy called REACH (Regulation of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restrictions of Chemicals (REACH), establishing a European Chemicals Agency and amending Directive 1999/45/EC and Regulation (EC) {on Persistent Organic Pollutants}).

This directive, replacing Directive 67/548/EEC on dangerous substances, would create a single regulatory system for existing and new substances, for the Registration, Evaluation and Authorisation and Restrictions of Chemicals (REACH). It would oblige downstream users as well as producers and manufacturers to undertake chemicals testing and shift responsibility for assessing chemicals on industry. Authorisation would be required for persistent, bio-accumulative and toxic (PBTs) and very persistent and very bio-accumulative (vPvBs) substances, carcinogens, mutagens and reproductive toxins and endocrine disruptors. The deadline for registration for existing substances would be set 3 years after adoption for substances of high concerns (PBTs, etc.) produced in amounts greater than 1000 tonnes, 6 years for production exceeding of 100 tonnes, and for those above 1 tonne, 11 years. Intermediates would be exempted depending on their use. Producers of articles would ensure that exposure to substances in articles would not have adverse affects. In order to administer REACH the EU will establish a central agency in Helsinki.

The European industry and many national governments have drawn the attention of the Commission to the fact that **the designed scheme will be a major burden to the competitiveness of the European industry** and have urged the Commission to reconsider their proposal. Some minor changes have been made, but it is still felt that the scope of the exercise is too wide. A new economic impact study including in its scope not only the chemicals industry but also the raw material suppliers is expected to be carried out in 2004.

The main substances of concern used in the carbon and graphite industry in this context are tar and pitch. These substances have already been classified under previous legislation and have undergone a risk assessment procedure, which is close to completion.

In the light of the Directive on marketing of dangerous substances and preparations (76/769/EEC) the EU had appointed The Netherlands as rapporteur to carry out the environmental risk assessment of high-temperature coal tar pitch (EC case no. 65996-93-2, EINECS no. 266-028-2 EU priority

chemical under 93/793/EEC, PCTHT). The RIVM (Rijksinstituut voor Volksgezondheid en Milieu) was specialized in research for environmental studies and was designated to act on behalf of the Dutch government.

In 2003 **the Coal Chemicals Sector Group (CCSG, established under the umbrella of CEFIC), the ECGA and the European Aluminium Association established a taskforce** in order to coordinate the industry's input within the ongoing assessment of pitch. Following the new EU chemicals policy the carbon and graphite industry has to be involved in the risk assessment as a downstream user.

By the end of 2003 the ECGA had collected the relevant data and supplied them to RIVM in January 2004. The task force will stay in close contact with RIVM throughout 2004 for further discussions.

It is expected that this risk assessment will be concluded before the new legislation will come into force and will then be integrated into the new requirements.

The ECGA will follow the developments closely.

1.3 The EU's Thematic Strategy on Sustainable use of Natural Resources

Following its Communications on Integrated Product Policy and on Waste Prevention and Recycling the European Commission in 2003 issued its Communication "Towards a thematic strategy on the sustainable use of natural resources". With this strategy the European Commission intends to reduce further the environmental impact of resource use and to decouple such impact from an increased resource use due to economic growth.

Unfortunately the Commission's approach in this case is **again unbalanced since economic and social issues are not taken into account** when considering the costs and benefits of a further reduction of environmental impacts in Europe. With a **growing international competition** in the area of natural resource production as well as demand in natural resources on a world scale it can be foreseen that in the not too distant future **Europe will have a shortage of raw materials** since other countries are willing to pay better prices for such raw materials since their environmental regulations and their social costs are far lower and provide them with better margins.
In some areas already today European installations have difficulties in obtaining their feedstock. In the future more international resource suppliers will find it more lucrative to supply to China than to Europe.

It should be noted that at the same time DG Enterprise is developing new strategies for the competitiveness of the European industry. In 2004 it will present to a special Competitiveness Council of the Ministers of the Member States concepts and an action programme. However, it seems at this stage that again the service and communications industry will be considered the area of the most growth potential.

It should be stressed that Europe will not be able to maintain its industrial base long-term if raw materials for industrial manufacturing which provides the materials and the basis for a major part of the service industry are not secured. **This is a key question also for the carbon and graphite industry** which turns raw materials into a large variety of products that are either serving the steel, aluminium and silicon industry for their production and thus serve vital markets such as the transport and infrastructure, building and construction, packaging and catering services, or which are providing new energy sources in the form of the fuel cell, electrical and electronic appliances and a large variety of highly specialised technical products for the machinery and tool market.

2. Environment, Health & Safety performance

Mr M Rouy,
GrafTech International
(Ucar S.N.C.), chairman

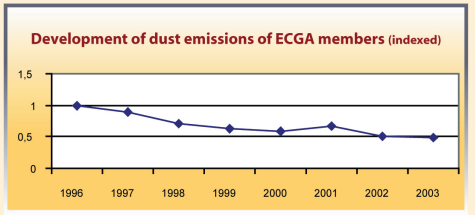
Participating members: Mr T Akyel (ERFTCARBON GmbH & Co KG), Dr EG Astrup (Elkem Carbon/ Elkem ASA SS), Dr R Neuert (SGL Carbon)

The ECGA members carry on with their efforts to improve their environmental and safety performance.

The continuous improvement of existing best available technologies as described in the IPPC Bref-Note related with our industrial activities and the development of emerging techniques of pollution abatement systems allow a reduction of the environmental impact of carbon and graphite production. Air emission is one of the main issues of concern for the ECGA members.

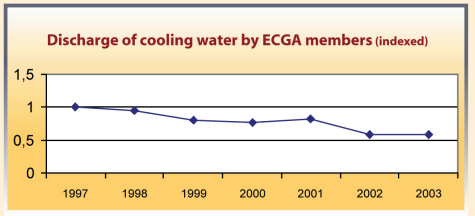
AIR EMISSION

The next graph, showing the evolution of the dust emission, illustrates the global downward trend observed for many years in the field of air emissions.



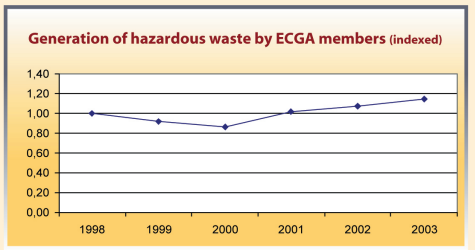
WATER CONSUMPTION AND DISCHARGE

The volume of cooling water has also been significantly decreased and stabilized thanks to a systematic recycling policy inducing water resource conservation.

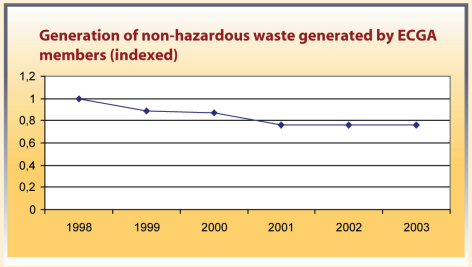


WASTE

Production of waste classified as "Hazardous Waste" is still slightly increasing, mainly because of changes in the EU regulation and of their enforcement in the EU Member States.

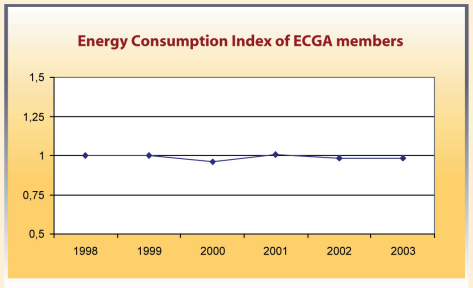


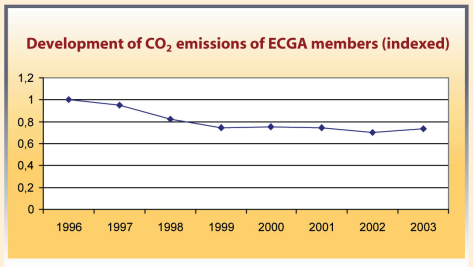
At the same time the next graph shows that the production of waste classified as "Non-hazardous Waste" has significantly decreased since the year of reference and is now stabilized thanks to a better reuse and/or recycling of non hazardous waste and carbonaceous by-products.



ENERGY CONSUMPTION and CO_2 EMISSION

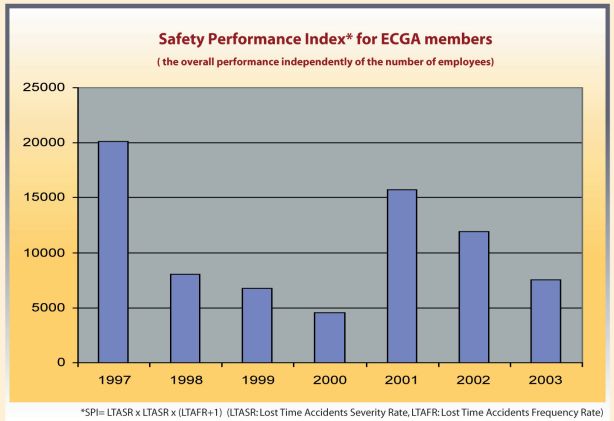
The two next indexes display that for the last years there were no significant increases of Energy Consumption and CO_2 Emission in spite of a necessary evolution of the product standards related with the technical requirements of the carbon and graphite users.





SAFETY PERFORMANCE

After the temporary deterioration of the Safety Performance Index observed two years ago related to some company acquisition, the improvement of this index has been confirmed last year, thanks to a continued strong Health and Safety policy conducted by the ECGA members.



OTHER TOPICS

During the year 2003, the EHSA Committee continued with sharing information on the monitoring and the understanding of adopted and/or draft EHS regulation.

The main subjects in 2003 were:

- Chemicals Policy and future implementation of the new REACH system :
  The EHSA Committee joined a task force of the Coal Chemicals Sector Group and the European Aluminum Association to participate to the Coal Tar Pitch High Temperature Risk Assessment and under the umbrella of CEFIC. The committee had notably to provide data to the RIVM, Netherlands, which is the official institution in charge of this Risk Assessment.

- Greenhouse Gases regulation and CO_2 emission trading:
  The Carbon and Graphite industry is not concerned by the first step of the implementation of the CO_2 emission trading which is planned for January 2005. Nevertheless ECGA members agreed that Carbon and Graphite producers already have to be able to provide data on CO_2 emissions to their national authorities and that they have to be ready to enter this market, probably in 2008.

- European Pollution Emission Register
  This is also one of the subjects particularly followed by the ECGA members because of the publication of this register at the beginning of year 2004.

Dr H Jäger,
SGL Carbon,
chairman as of October 2003

3.1 Steel

Participating members: Mr G Baust (ERFTCARBON GmbH), Mr P Heinrich (SGL Carbon Group), Mr PN Higgins (ConocoPhilips Ltd), Mr St Paege (GrafTech), Mr R Thomsen (ERFTCARBON GmbH)

China's soaring demand for steel is raising hopes for a longer lasting era of increasing profitability within the global producers of steel. With an average demand growth rate of above 15 % since 2001 (compared to less than 2 % for the rest of the world) China seems to be the global engine. A further sustainable average growth rate at 8 % is foreseen until 2010 thus raising the country demand up to around 170 mio t annually. Thereof between 20 and 50 mio t is estimated to be imported depending on the installation of own new production capacities.

The existing overcapacities in Europe, Japan and North America are widely used to currently satisfy the global steel demand increase thus indicating indirectly a continuous global demand growth. However economically a further consolidation and rationalization outside China seems necessary to recover the existing cost gap of 40 to 60 €/mt for Japan and Western Europe vs China, Brazil and Russia / Ukraine. The costs for North American steel are in addition around 40 €/mt higher.

TOTAL STEEL PRODUCTION 1990 ... 2003

		1990	1995	2000	2001	2002	2003
TOTAL CRUDE	[mio t]	771	750	847	840	902	960
TOTAL ELECTRIC	[mio t]	215	245	283	296	304	315
SHARE ELECTRIC	[%]	27,9	32,7	33,4	35,2	33,7	32,8
W. EUROPE CRUDE *	[mio t]	178	182	189	187	183	189
W. EUROPE ELECTRIC *	[mio t]	56	67	76	79	81	83
SHARE ELECTRIC	[%]	31,3	36,7	41,5	42,2	43,1	43.6

* incl. Poland

Again after 2002 the year 2003 reached a record production level of 960 mio t of global crude steel (+ 6,4 %) with a share of 315 mio t electric steel exceeding the last year's high by 3,6 %. Due to these global record productions certain shortages like metallurgical coke, scrap or transportation capacities impacted the overall costs of steelmaking. The scrap prices rose by 50 % eating up the majority of the price increases. The transportation bottlenecks resulted in cost increases up to 100 % negatively impacting in addition raw material prices of graphite electrode producers.

Furthermore increasing energy costs and the potential implementation of CO_2 emission trading within Europe will continue impacting negatively the European steel producer competitiveness. Unfavourable exchange rates $ vs € even will reduce the European electric steel cost advantages vs blast furnace technology. First consequences are already visible in individual closures of electric arc furnaces in some bigger steel groups.

SPECIFIC GRAPHITE ELECTRODE CONSUMPTION

		1990	1995	2000	2001	2002	2003
Specific Consumption *	[kg/mt]	3,65	2,76	2,08	2,00	1,93	1,93

* incl. Poland

Even with the productivity increases in electric steel furnaces the average specific net graphite electrode consumption remained comparable to last year. One influencing factor can be seen in the necessary usage of all grades and types of scrap to control the steel costs to a minimum (scrap costs reflect roughly 50 % of steel costs). In addition in years of highest required productivities process improvements and investments were kept on a just acceptable low level to run the available capacities full and to recover last years losses.

With the successful market introduction of graphite electrodes up to 800 mm for big size furnaces productivity targets of 2 mio t of annual steel production are nowadays reachable. This step enables steel producers to replace mid size blast furnaces by the more flexible electric arc furnaces and can be regarded as an important contribution of graphite electrode producers to reduced CO_2 emissions.

Dr D John,
Vesuvius UK Ltd,
chairman

3.2 Aluminium

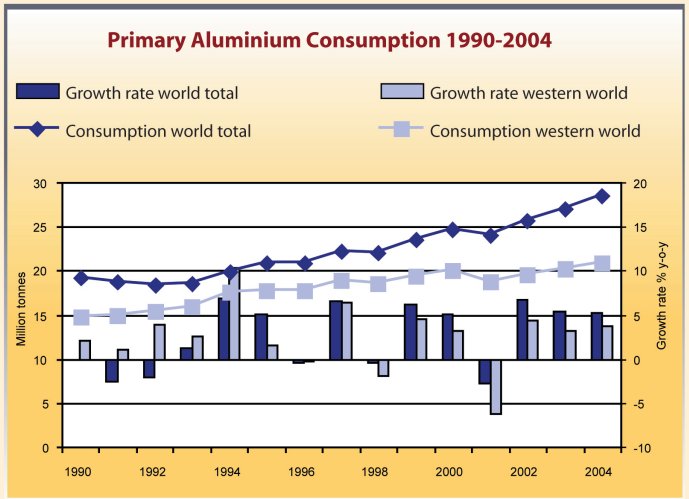
Participating members: Dr R Becker (Aluminium Rheinfelden GmbH), Mr J Cibulec (DEZA a.s.), Mr J A Johansen (Elkem ASA Carbon), Dr J Köhler (SGL Carbon GmbH), Mr H Nawrocki (ERFTCARBON Gmbh & CO KG)

Primary Aluminium

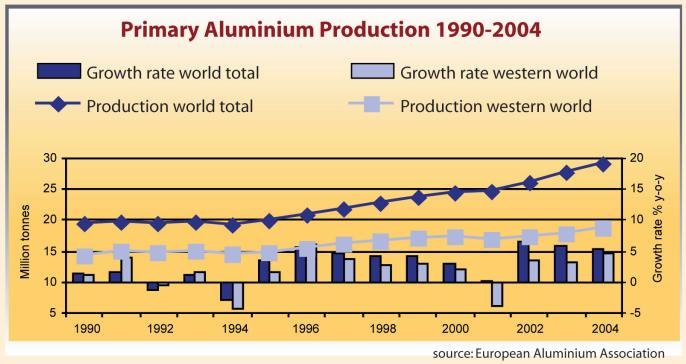
Carbon cathode blocks and sidewall pieces form the floor and sides respectively of the aluminium reduction cell, whilst carbon ramming pastes seal the joints between the various blocks. The aluminium industry is thus a key market for the carbon and graphite industry and will remain so for the foreseeable future.

Aluminium consumption is widely expected to increase in the long term, although the worldwide economic recovery previously predicted for 2002-3 has not been as strong as expected. Data has been collated for world, western world and European production and consumption. China is increasingly important as both a consumer and producer of metal, accounting for more than 50% of the recent increase in world output. In 2002 China was a net importer of metal but changed to a net exporter in 2003. China's output rose from 1.6 million tonnes in 1995 to 5.3 million tonnes in 2003, whilst forecasted capacity amounts to 7 million tonnes in 2005 and possibly 10 million tonnes in 2010.

The committee has maintained the database covering aluminium industry activity with details of metal production and capacity, consumption and stocks, plus shut down, idled and restarted capacity. Green-field and brown-field projects are monitored. The database has also been upgraded to cover more technological information.



source: European Aluminium Association



source: European Aluminium Association

Carbon Products

The aggregated data collated by the secretariat indicates stable demand for fired products with only minor variations from year to year in future. The trend towards graphite continues at a slow rate.

Technology

The aluminium reduction cell is presently the only available process for the large-scale economic production of aluminium. Several alternatives have been examined in recent decades, only to be rejected due to various technical and economic problems. Dr. Pal Runde of Elkem ASA Research made a presentation on their current research in to a carbothermic approach to metal production, taking into account technical, environmental, energy and economic aspects of their work. It was noted that the furnaces in their present design still require graphite electrodes.

Other issues that are kept under review include the spent pot lining generated when old furnaces are demolished and the development of alternative anode technologies.

Mr D Damiotti,
SGL Carbon,
chairman

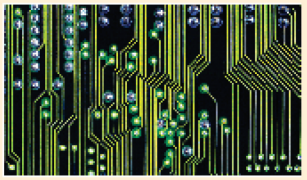
3.3 Silicon

Participating members: Dr R Becker (Aluminium Rheinfelden GmbH), Mr K Lenda (Elkem ASA Carbon), Mr S Sawatzki (ERFTCARBON GmbH)

Carbon Electrodes are used for the production of silicon metal, phosphorous and special alloys. Søderberg paste is mainly used for the production of electrodes for ferro-alloy production.

Silicon Metal Market (SIMET)

The main uses of the silicon metals are :



- Chemical uses: silicon is the raw material for the production of chlorosilanes and their derivatives and the basis for silicone chemistry;
- Metallurgical uses: silicon increases castability of aluminum, making it a key alloy for the production of complex automotive parts;
- Electronic uses: polycrystalline and monocrystalline silicon are used for the production of semi-conductors and processors.

During the year 2003 the committee has discussed the silicon metal prices, the market and the players.

In the year 2003 silicon metal has shown a price increase, it has been reported that this development was mainly the result of two factors:

- Europe and USA had imposed anti-dumping measures against silicon metal from Russia;

- USA has closed down several production facilities due to high electricity costs.

No new capacity was planned for 2003 as the industry still suffered from higher production costs and overcapacity.

Due to the more balanced supply/demand situation, the SiMet industry was able to re-introduce price differentials for different qualities.

China is the main player in the SIMET industry

China has been the no. 1 supplier for the last three to four years, but is continually facing power supply disruptions especially in the wintertime. The increase of SIMET demand in the domestic market (automobile and secondary aluminium) will in the longer term reduce the quantity of material available for export.

The combination of these two factors (energy shortage and high domestic demand) will end in declining Chinese shipments. The shortage will strongly impact the Japanese market (secondary aluminium and chemical industry) since they depend on Chinese supply by more than 90 %.

Our Committee expects that this impact will change the Japanese strategy on SiMet by increasing Russian exports to Japan. We do not expect the Japanese to start SiMet furnaces in Japan to meet the shortage of material mainly for the time being.

New and old players

In former times the silicon producers were mainly small players, now they had turned into big ones driven by a backward-integration of the downstream industries like: Alcan-Pechiney (Invensil), Elkem-Alcoa, and Dow Corning purchasing Simcala.

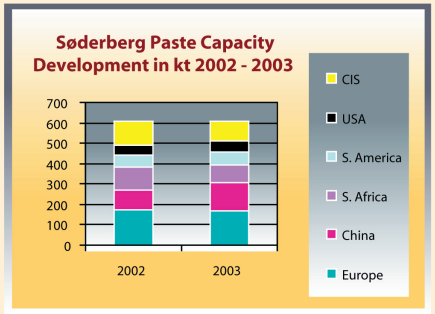
Energy

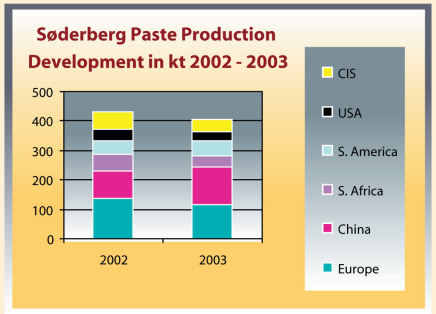
Our committee has analysed and agreed that the cost of energy is a key factor in the Silicon production. In order to produce one ton of silicon metal 13.000 kW are consumed. No new technology has been developed to reduce this high-energy consumption. The US has already decreased silicon metal production due to high-energy costs. Europe is facing now the same problem; we do not expect new furnaces to start-up in these two areas.
Despite the relatively stable demand no new projects (furnaces) had been established for the last five years. Saudi Arabia was the last Country with a new production in 1997 but was forced to shut down almost immediately due to high-energy cost. Power shortages in Scandinavia and other areas like China will continue to impact both Ferro-alloys and Si-Met production output.

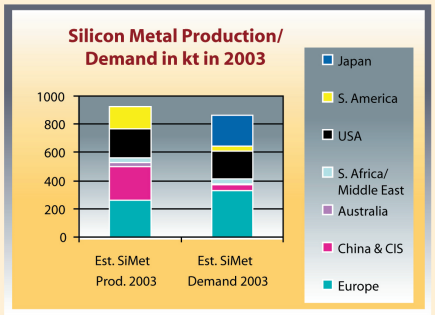
Once again, energy cost and availability are the key factors in this industry, therefore one of the main objectives of our committee in the year 2004 will be to analyse the world wide energy cost divided by country and application.

Søderberg paste

The Søderberg paste consists of calcined anthracite mixed with liquid pitch as a binder. The Søderberg paste is mainly used in the ferro-alloys, phosphorus, and SiMet productions. The invention of the so-called "self-baking electrodes" using paste has been named after Carl Wilhelm Søderberg, who first had the idea of this kind of electrodes in the year 1910.
The main function of the Søderberg electrodes is to serve as an electric conductor from the transformer to the melting area in the furnace. The current flow is forming an electrical arc at the tip of the electrodes, which creates the necessary heat needed for the metallurgical reaction. Each ferro-alloy has a different heat reaction. To be able to form the self-backing electrodes on the furnaces, the Søderberg paste is introduced into a cylindrical steel casing and using the heat coming from the melting bath inside the furnace the Søderberg paste can be baked and become a solid carbon electrode. This process starts at the temperature of 500°C and is completed at approx. 900°C.
The invention of the Søderberg paste, followed by technical improvements, has created the basis for the modern ferro-alloys industry. Ferro-silicon, silicon-manganese, silicon metal, ferro-chrome, ferro-molybdenum, ferro-nickel are a few examples of the alloys produced with the Søderberg paste.
During the year 2003 our silicon committee has analysed the worldwide market of the Søderberg paste in terms of production/capacity (see chart).







4.1 Enlargement of EU: steel and aluminium

On May 1st, 2004 ten countries - Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, the Slovak Republic, and Slovenia, will join the European Union. These countries are currently known by the term "acceding countries". Bulgaria and Romania hope to join by 2007.
The EU enlargement is of great interest to the European Carbon and Graphite industry since there are pitch and graphite producers in these countries as well as major steel works.

In order to join the Union, these countries needed to fulfil on the one hand the economic and political conditions known as the 'Copenhagen criteria'. The criteria encompass having a stable democracy, respecting human rights, the rule of law, and the protection of minorities as well as having a functioning market economy and adopting the common rules, standards and policies that make up the body of EU law. The EU assists these countries in taking on EU laws, and provides a range of financial assistance to improve their infrastructure and economy and their environmental, health and safety protection on the other hand.

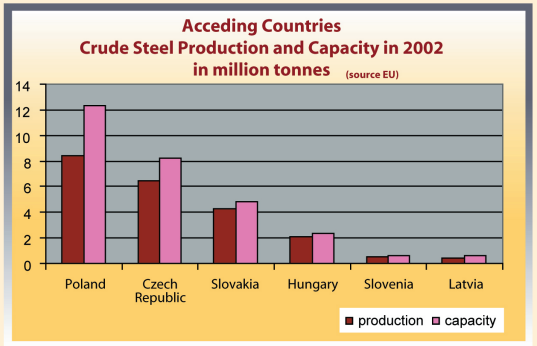
Steel

Most accession countries and acceding states have an important steel industry, originally based on geographical advantages of domestic raw material and energy sources. In the meantime, factors such as qualifications and cost of manpower, or even the proximity to steel markets, continue to justify the presence of domestic steel production. Raw steel production in these states reached 46 million tons in 2002 i.e. 5% of world production, compared to the EU's share of world production of 15%.

During the last decade an important restructuring process took place in this region involving all companies, which resulted in the closure of many inefficient facilities and a workforce reduction of some 65%. The privatisation process has been launched for most of the remaining publicly owned companies and the conclusion of this step will hopefully accelerate the finalisation of the restructuring process in the steel industry.

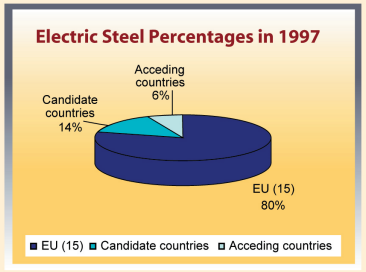
Based upon its own experience in the steel sector, in the early nineties the EU negotiated specific agreements on steel restructuring with all accession countries, which were enshrined in the Europe Agreements (http://europa.eu.int/comm/enlargement/pas/europe_agr.htm). These specify the so-called grace period, during which governments could grant necessary restructuring aid only if certain conditions were met. One of these conditions is the adoption of a national restructuring programme, such as the Czech Republic and Poland adopted in 2002 and 2003.

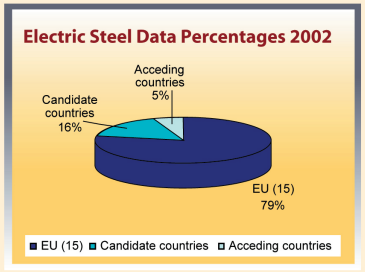
In 2002, transitional regimes were negotiated with the Czech Republic, Poland and Slovakia in order to allow these countries to finalise the financial, social and technical restructuring of their steel industry. The specific conditions, which include precise monitoring obligations, are outlined in the Treaty of Accession. Bulgaria, Romania and Turkey are currently preparing their national restructuring programmes and will present these to the Commissions services before the end of 2003.



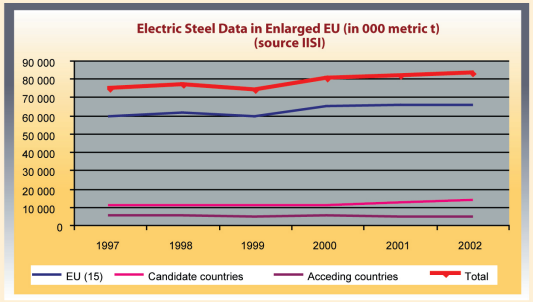
Six of the ten countries acceding to the EU in 2004 have cumulative steel capacity of up to 28.9 million tonnes; total production in 2002 reached 22.2 million tonnes. The two major producers (Poland and Czech Republic) account for 71% of the total capacity and 67% of total production of the acceding countries. There is very limited to no production in Cyprus, Estonia, Lithuania or Malta.

ECGA had invited Mr Jacques Woeldgen, DG Enterprise, Steel Division, at its General Assembly in October 2003 to make a detailed report on the steel market in these acceding countries. The data shown is based upon EU and IISI data.





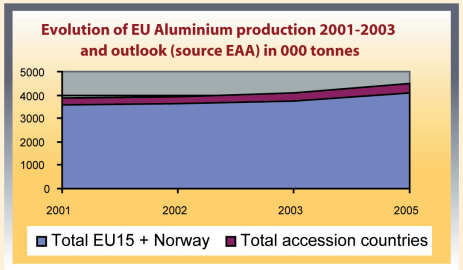
The electric steel production percentages have shifted slightly over the last six years; the candidate countries have increased their share while the acceding countries and the EU(15) have slightly decreased their shares. The overall production amounted to 74.418 thousand metric tons in 1997 and increased in 2002 to 82.994 thousand metric tons.

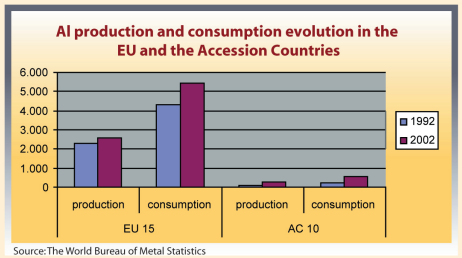


Aluminium

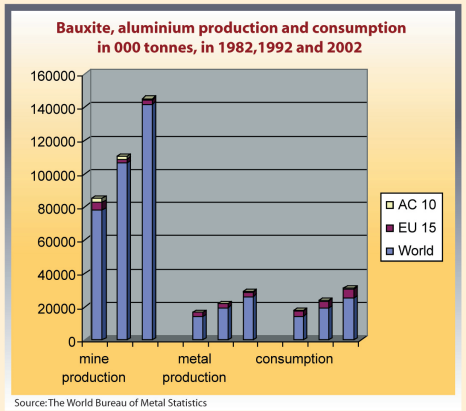
Aluminium production figures for 2003 illustrate that Europe (EU15 + Norway) is a moderate player (13,59%) in the worldwide production of aluminium. The part of the accession countries in the total production is quite low with 1,18%. Their total production figures however show an increase from about 276 thousand tonnes in 2001 to about 330 thousand tonnes in 2003. This raise is predicted to continue in the next years and the share of the accession countries in the Enlarged Europe is predicted to increase from 7% in 2001 to 9% by 2005. After May 2004 the enlarged Europe would account for about 15,50 % of the world-wide aluminium production with an estimated production of about 4500 thousand tonnes of aluminium.

A closer look into the accession countries shows that Slovakia is the bigger producer, followed by Slovenia. Last year the production levels increased from about 110 thousand tonnes in Slovakia to about 130 thousand tonnes and from about 107 thousand tonnes in Slovenia to about 109 thousand tonnes. For 2005 further increases in production levels are predicted. The Polish production has shown increases for the last three years to a total production of about 60 thousand tonnes in 2002. However in 2003 the production fell, back to about 53 thousand tonnes. No real increases are foreseen for the near future. Production in Hungary is stable at about 35 thousand tonnes per year.





Source: The World Bureau of Metal Statistics



Source: The World Bureau of Metal Statistics

4.2 A versatile material: carbon and graphite

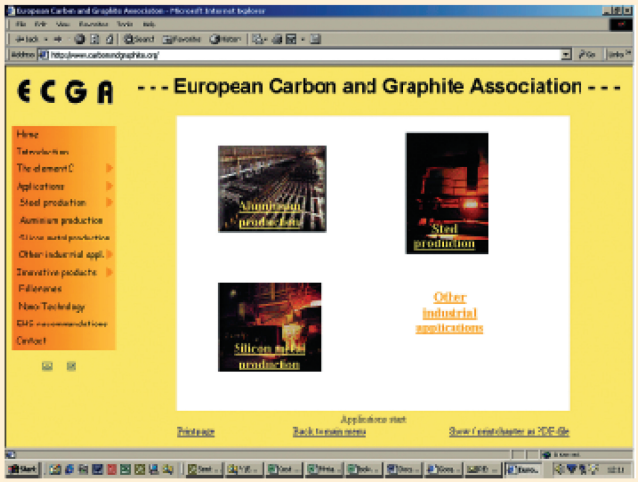
For two years now the industry has jointly worked on a promotion tool for the materials carbon and graphite. In 2003, together with the experts from GraphTech International (Ucar) and SGL Carbon the Association had continued its work on developing a unique tool for supplying information about carbon and graphite, its production, technical properties and existing and potential product applications and finalised its first test version.

Target audience
The website was not only intended for students, but also for current and potential professional users of the material who had questions such as what are carbon and graphite. What are they applied for? What are their properties? What are their current and future applications?

Contents
The website will contain chapters on:

- The element C
- Applications
- Innovative products
- EHS recommendations

The website
The data would be online at www.carbonandgraphite.org early 2004.



The industry looks forward to an increased number of industrial and product solutions using carbon and graphite as a high-performance material.

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