

E C G A

EUROPEAN CARBON
AND
GRAPHITE ASSOCIATION

ANNUAL
REPORT

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Carbon and graphite - as innovative as ever



“FOREWORD BY THE PRESIDENT” – YEAR 2008

The year 2008 will be remembered by all of us as the year of the crisis, which made itself acute and wide ranging with the bankruptcy of Lehman Brothers in September 2008. This was the sign that the extent of the crisis was much wider than just a sub-prime, US based phenomenon. The subsequent intervention of Central Banks and Governments was aiming at giving to the financial system sufficient liquidity and confidence in order to convince banks to continue funding the economy. We are now in the middle of a reduction in commercial and manufacturing activity which has been impacting our main customer industries such as steel and aluminium, where sales and production volumes continue to be severely reduced. At this point of time, any forecast on the developments of GDP in the world economies is extremely difficult.

The activity of the ECGA in 2008 has been focused on the first implementation steps of the wide-ranging and important European Union REACH (Registration, Evaluation, Authorization of Chemicals) regulation, where the definition of the items subject to the regulation required a joint effort by the members of our Association, guided and monitored by the Secretary and her assistants. The first deadline set in the autumn of 2008 was met by all associated members and the further steps will be performed in a coordinated fashion, thanks to specific cooperation agreements signed by the ECGA members.

On the issue of Emission Trading Scheme (ETS), another stringent regulation introduced by the European Union in the framework of the reduction of greenhouse gases, the Association has been very active in contacting the EU Commission and explaining, in detailed documents, the position of the member industries and the risk of the so-called “carbon leakage”, i.e. that these industries might be forced, because of too high economic burdens deriving from ETS, to relocate their plants outside of the European Union.

In these difficult times, our Association is playing a vital role in ensuring the connection between its members and the European Union Commission in Brussels, where the needs and peculiarities of the carbon and graphite industries need to be presented and explained in a professional fashion.

I want to sincerely thank our Secretary, Mrs. Hebestreit, and her team for the work performed in this past year.

Dr B Toniolo, President
21.4.'09.

A handwritten signature in black ink, appearing to be 'B. Toniolo', written in a cursive style.

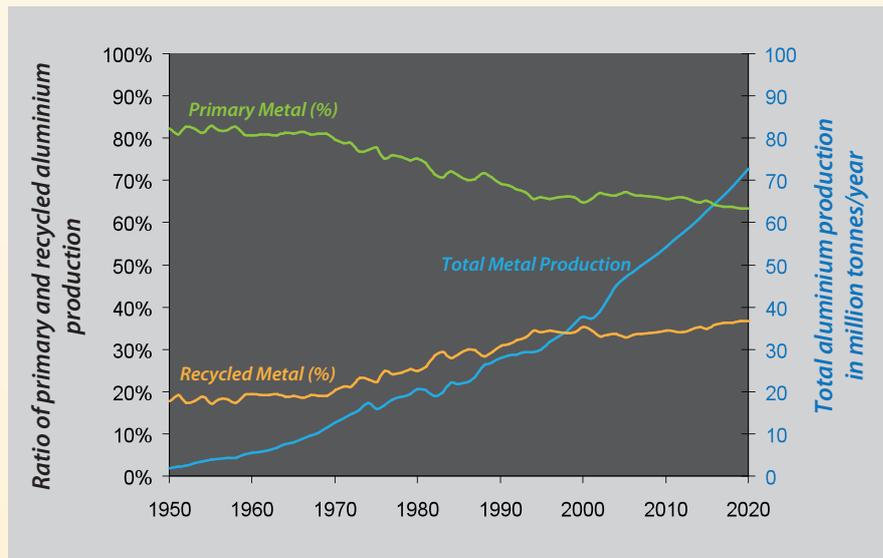
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The Aluminium Industry

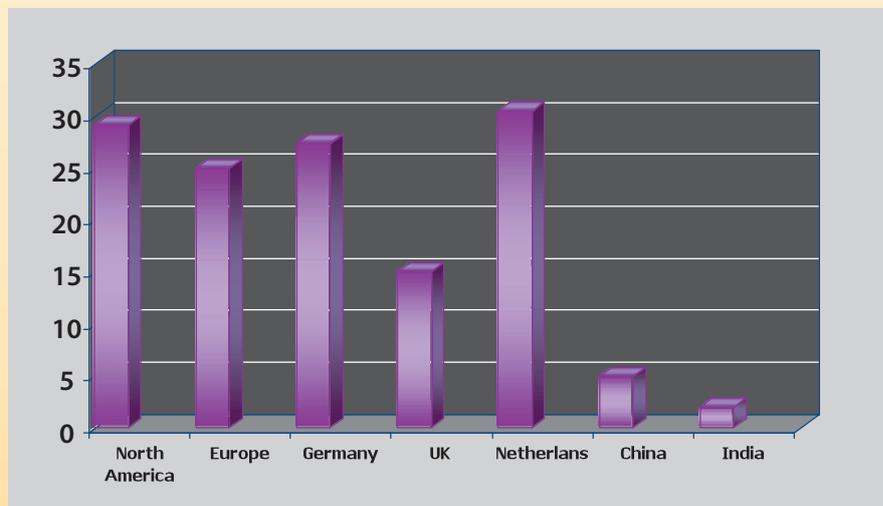
One of the major global markets for carbon and graphite products is the primary aluminium industry. Looking at the sector from a global perspective it is interesting to note that

- ▶ since 1888 over 760 million tonnes of aluminium have been produced;
- ▶ about three quarters of this metal is still in productive use,
- ▶ recycling the metal currently stored in use would equal 20 years' primary aluminium output.

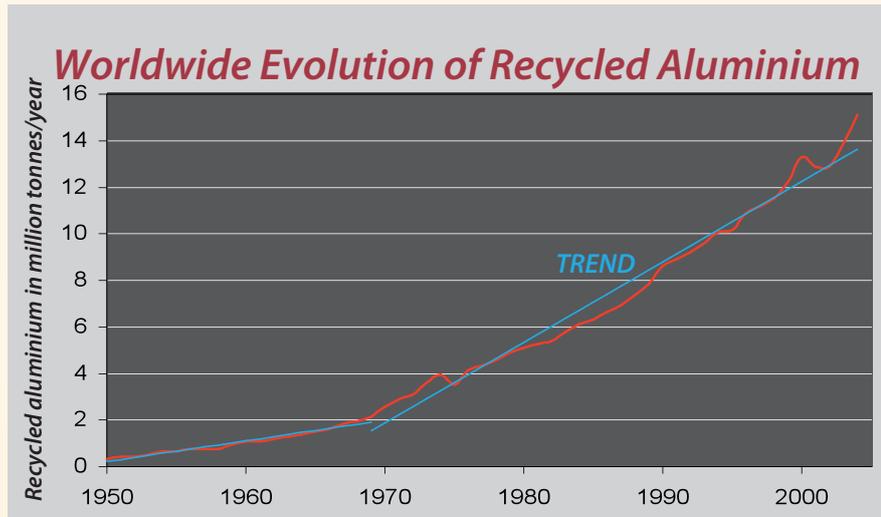


At the beginning of 2008 the global demand for aluminum was predicted to grow faster, however, the economic crisis in the second half of 2008 has of course halted the development temporarily.

Still, the main demand drivers for future development will be infrastructure and business construction in developing economies, particularly in China, but also in other emerging regions, such as India and the Middle East



At the same time, fully in line with the political goals of saving resources the recycling of aluminium has continued to grow.



The industry is undergoing substantial change in terms of expansion of capacity which is only temporarily on halt now. There is an estimation of a global capacity expansion potential up to 60 million tonnes by 2025. However, this will go hand in hand with the replacement of high cost production facilities (Europe, North America) by facilities in areas with low energy costs and in areas closer to the future end-user markets. And of course some of the older technology will have to be replaced.

As a consequence it is expected to see a strong expansion in the Middle East and in India. Iceland which has already a relative large concentration of aluminium smelters due to low energy cost does not expect any further expansion. Canada's energy cost are not so low anymore, labor cost is too expensive, and the environmental opposition is too high, hence no expansion, just upgrades are expected.

The same holds true for Scandinavia.

For the rest of Europe energy and labor costs are far too high, hence there might only be a few upgrades.

The Gulf area, however, still has low energy and labor costs, mainly because of Asian labor, no environmental pressures and provides a good future for new investments.

For Asia energy cost are relatively high, but labor cost are low, there are still hardly any environmental restrictions, hence there is a very good outlook for India and Indonesia as well as an opportunity for China to upgrade its old technology and to restructure.

The fact that many expansions will take place outside of Europe and North America also means for the European carbon and graphite business delivering into this industry that it needs to become even more global than today.

Providing the basic elements for the aluminium reduction cells

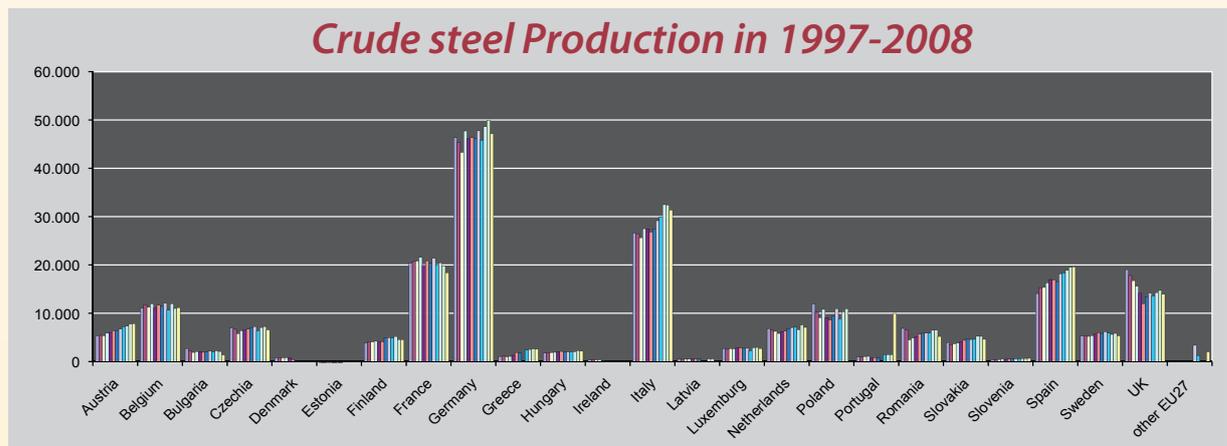
The carbon and graphite industry supplies furnace linings for the primary aluminium industry in the form of cathode blocks with which the floor of the electrolytic reduction cells are lined as well as pieces for the surrounding sidewalls. Both types of blocks are manufactured in a number of different fired qualities. Carbon ramming pastes are used to seal the joints between the fired blocks.

The Steel industry

Whilst the beginning of 2008 still gave rise to a rather solid prediction with regard to steel demand by mid of the year already a slow down was noticeable.

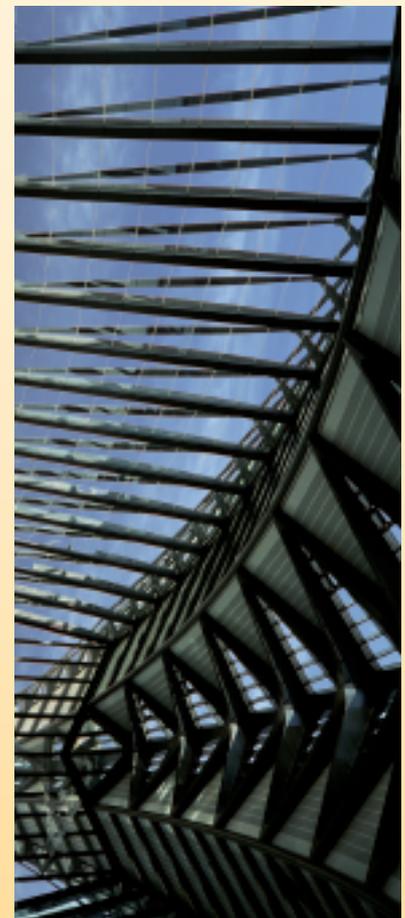
With the financial crisis and the following economic downturn however, the steel industry saw itself faced with a considerable production cut-back in Europe and around the world which reached 50 % towards the end of the year 2008.

As a consequence also the graphite industry producing electrodes for the steel industry had to face a considerable drop in demand.



Unfortunately, so far the situation at the beginning of 2009 did not improve. The main markets for the steel industry had collapsed considerably as could be seen in the slow markets in the construction and transportation sectors. It remains to be seen whether the governmental interventions with regard to the automotive industries will yield any positive results.

It is hoped that the steel markets would recover at least slightly for the second half of 2009 and would stipulate a recovery in the steel industry as well. Stocks have been reduced overall and hence even a slightly increasing demand should trigger an uptake of production even if at lower levels.



Contributing to sustainable resource management

Resource and energy efficiency through carbon and graphite products

The carbon and graphite industry's products contribute actively to the saving of resources and energy.

For example in the steel industry the graphite electrodes and the continuously having increased efficiency in the specific graphite electrode consumption the industry has actively contributed to a saving in resources and energy consumption.

Graphite electrodes also contribute to creating that cycle economy that makes optimal use of the resource iron and steel by being used to an ever growing extent in Electric Arc Furnace which is operated to recycle steel scrap.

The product quality improvement in the area of cathodes and anodes used for the aluminium industry have seen similar improvements and therefore - also here -contribute to resource and energy savings.

In other areas such as new developments in the fuel cell technology or in wind power generators for example, graphite contributes to the generation of new and cleaner energy generation which will in the long term save fossil fuels and reduce emissions.

Energy savings are also achieved when applying carbon fibres in transportation since its light-weight factor reduces fuel consumption whilst at the same time providing strength and performance.



The operations

But not only the carbon and graphite products are contributing to resource and energy savings, the operations itself have also made a continuous strive to improve their EHS and energy management in order to become more sustainable and more competitive in an international context.

In fact, the carbon and graphite industry has for years been actively contributing to the efficient resource management by making for example best possible use of wastes and by-products from the coal and oil industry and turning them into valuable carbon and graphite products, some of them substituting the use of natural graphite.

Since ECGA members operate manufacturing sites across Europe and outside of Europe their performance improvement is based on a global approach and very often international standards whilst respecting the local legislative requirements.

Amongst the performance highlights are a reduction of various environmental parameter over the past decade:

- ECGA members have reduced CO₂ emissions per produced tonne of material from their factories by more than 20% over the last ten years;
- the emission of non-hazardous wastes was reduced by 20% over a ten-year period;
- the reduction of cooling water consumption per tonne of produced material over ten years amounted to 45%;
- dust emissions were reduced by 50% over the same period of ten years.

The capital expenditure of ECGA members for environmental protection and improvement of the working and safety conditions will amount to more than 50 million € within the next few years, the first projects have almost been started. To protect the environment and meet future legal requirements based on EU directives, the carbon and graphite industry is investing significantly in environmental protection installations to prevent air pollution in the coming years.

In 2008 the EHSA Committee has continued to monitor the development of further EU and national EHS legislation.

Two major pieces of legislation occupied the sector in 2008: the preparations for the new Chemicals Legislation (REACH) and the revision of the Integrated Prevention Pollution and Control Directive (IPPC) as well as the related updating of the so-called BREF note for Non-ferrous metals which also covers a part of the carbon and graphite sector.

REACH

According to this regulation all chemical substances and their different applications have to be registered, evaluated and finally authorised.

The ECGA as a representative of the European carbon and graphite industry got involved in various activities.

First of all the industry had to cooperate in the completion of the risk assessment on coal tar pitch as a downstream user. This risk assessment had been ongoing for several years and in light of the new Chemicals Policy had to be finalised and turned into a transitional dossier in order to be forwarded to the European Chemicals Agency (ECHA) where it would be assessed for possible prioritisation for authorisation or restrictions in use under REACH. The dossier was completed at the end of 2008 and handed over to ECHA. In this context the ECGA had collected downstream user exposure data which will be useful for the further progress of the dossier.

However, in light of the other substances that ECGA member are producing or using, the ECGA got actively involved in the technical debate and lobbying with regard to the substances graphite and carbon. Till beginning of 2008 these substances were still exempt from REACH. However, by February 2008 these substances were removed from one of the REACH Regulation annexes and therefore became part of the REACH pre-registration and registration process. Despite many technical interventions and discussion it was not possible to this date to place carbon for example back on one of the Annexes which would grant exemption.

Intensive discussions on how to address this critical issue for the ECGA membership lead to the setting up of a special working structure with a Steering group and a technical working group in addition to the classical EHSA Committee in the ECGA.



Hence, throughout the summer 2008 the ECGA members decided to set up different consortia for preparing the pre-registration of their substances as well as starting with the preparatory work for registration. At the end of 2008 different consortia for amorphous carbon, graphite, calcined anthracite, acid-treated and sulphuric acid treated graphite. Having managed the pre-registration phase these newly formed consortia started to prepare the first SIEF meetings for 2009.

The registration dossiers under REACH as well as the cooperation with the coal tar pitch producers will be a substantial part of the work in ECGA till 2010.

IPPC Directive

The revision of the IPPC Directive in its current form could have substantial effects on this sector, like on many other industrial sectors.

The merging of several directives into one new Industrial Emissions Directive is leading to a series of complications in the procedures for implementing the directive as well as updating the BREF notes. In particular the discussion about turning BAT related Emission Limit Values into maximum Emission Limit Values is of course causing major concern in the industrial sectors. The ECGA therefore joined an alliance of other industrial sectors to increase its political weight in the discussion with Commission, Parliament and Council. It became active in visiting various national representations in Brussels to represent the alliance's point of view.

The negotiations in the Council are expected to be concluded in summer 2009.

At the same time, the BREF note (Best Reference Document for BATs) for the non-ferrous metals sector was under review. This BREF document also covers the carbon and graphite industry in as much as it supplies to the non-ferrous metals industry. The EHSA Committee provided input for the revision by collecting up-to-date data and held several discussions with the desk officer in Seville. The final discussion on the new BAT documents will be held in Seville in 2009.

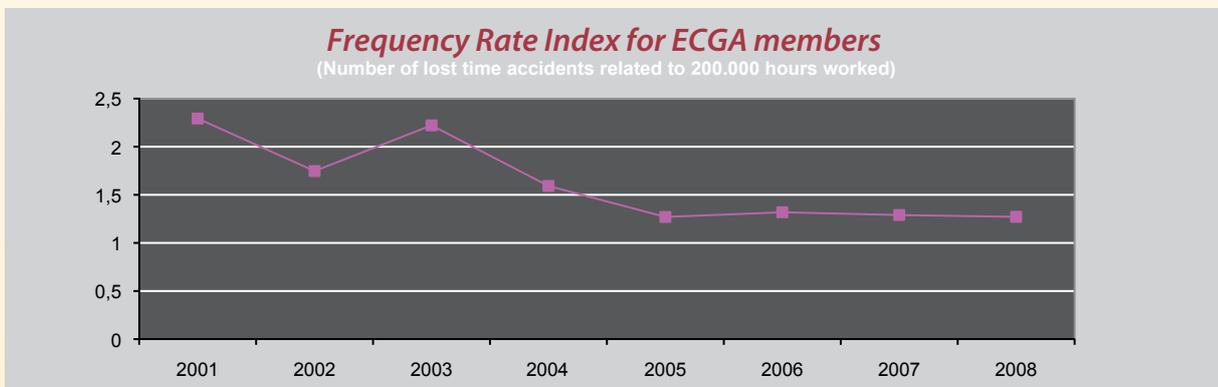
The upcoming discussions on a new NOx/SOx trading scheme – similar to the CO₂ trading scheme - to be covering all IPPC installations is also on the radar screen for the sector. Together with alliance partners and Business Europe many position papers had been produced, however, so far without the desired success to change the politicians' mind that such proposals come at the wrong time.

Safety Performance

Thanks to the continuous and sustainable application of highly developed Health and Safety practices by the ECGA members in the last years a successful improvement of the Safety Performance Index and a significant regression of the key accident indicators could be attained.

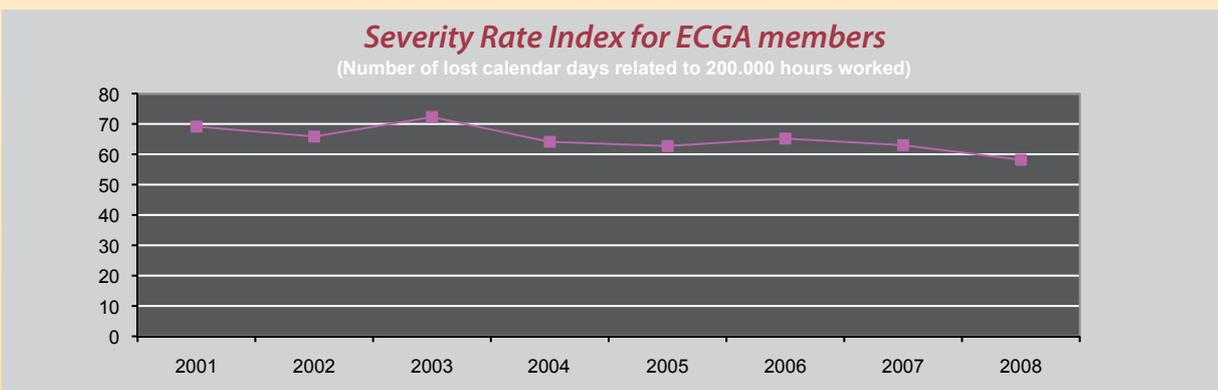
Also, the review of the exposure data in the sector with regard to PAHs has lead to even stricter risk management measures in many a plant across Europe.

The sector expects that as a result of the REACH registration exercise after 2010 many more reviews of health and safety practices in the plants will be due, although already much effort has been put into making work places in the carbon and graphite industry safe.



By the means of plant modernisation and streamlining, specific process instructions, consistent internal auditing and detailed accident and incident investigations this improvement could be made possible. As it can be seen in the presented charts not only the number of accidents (frequency rate) declined but also the absence of the job - time (severity rate) caused by accidents.

Although the efforts and measures of the ECGA members to establish and maintain high-levelled environmental standards during the last years as a result of stringent legislative requirements the future requirements might hamper the industrial activities and the global competition.



Raw materials and energy

The European Carbon and Graphite industry full-heartedly supports EU Vice-President Verheugen's initiative on the sustainable access to resources which was published in 2008 and which will address five basic pillars:

- ▶ increasing access to resources from European sources;
- ▶ improving the transparency and level playing field with regard to resource inputs from outside of Europe;
- ▶ improving the efficiency of resource use in the EU;
- ▶ improving the capacity in and outside of Europe in order to deal with resource management in a sustainable manner; and
- ▶ increasing the knowledge base about our resources.

The expectation is that this will give a boost to the development of raw materials and will for example also address the shortage of coke worldwide which is needed by the carbon and graphite industry.

Raw material prices have increased substantially in the past years and have an impact on the competitiveness of the carbon and graphite, but also the downstream user industries.

The working group that has been established to look at the "criticality" of raw materials for Europe's industrial fabric and the economic growth will have considerable impact on the EU's policy for securing future supplies of vital raw materials.



Energy issues

Of equal importance is securing energy at competitive prices for European industries. In this context in particular the sector, itself also a user of substantial amounts of energy, has been monitoring the rising costs in the past years which have threatened its competitiveness in comparison to its global competitors.

Parts of the carbon and graphite industry can be considered energy intensive due to the fact that for example the graphite electrode which is an integral part of all types of steel making requires substantial amounts of energy in order to achieve higher longevity of the electrode in the steel furnace.

Hence, whilst the specific consumption of electrodes in furnaces per ton of steel has decreased over the past decades and continues to decrease the improved quality of the

graphite electrode and the abatement techniques for the environmental protection overall have increased the energy consumption per tonne of product, only partly offsetting process efficiency.

However, the new proposal for the European Emission trading scheme post 2013 will be another constraint on the competitiveness of the European graphite industry by imposing further costs on the enterprises which competing producers worldwide do not have to reckon with.

It is therefore crucial that energy intensive industries which face fierce competition are given special allowances in this new scheme.

In 2008 the ECGA actively engaged in the political process of establishing criteria for selecting EU industries which are energy intensive and with a high risk of carbon leakage. The ECGA organised meetings with respective Commission officials and the data gathering within the sector provided the basis for arguments and evidence of this carbon leakage.

The potential impact of the legislation after 2013 is immense and hence the sector will continue to argue its case vis-à-vis the authorities.

It is expected that in 2009 a list of sectors will be agreed upon by Member States that will be eligible for free allowances based on a benchmarking system.

This leaves the members of ECGA still with a major task in the first half of 2009 to establish the benchmark for the European producers.



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