ECGA
European Carbon and Graphite Association

ECGA Annual Report 2021

Contents

Foreword

The European Carbon and Graphite Association (ECGA) is the representative association of EU carbon and graphite producers, including EU based graphite electrode producers going into Europe's steel and foundry industry, electrodes and cathodes for the aluminium and ferroalloy industry as well as a wide variety of specialty graphite and carbon products for applications ranging from electric motors to modern battery technology.

In 2021 the sector had a turnover of just over 3 billion Euro and by the end of 2021 the association had 23 members.

The association welcomed three new members Sangraf Italy, BGV Group Management Ukraine and Syrah Resources Australia/Mozambique.

Having welcomed Sangraf Italy to the association meant that the association is now representing 100% of Europe's synthetic graphite electrode producers supplying Europe's steelworks with a vital technical ingredient for the electric arc furnace steel scrap recycling contributing to Europe's circular economy concept.

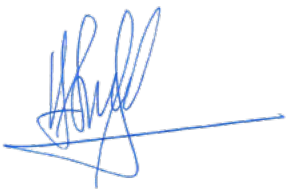
Association with the Ukrainian BGV Group Management will foster the cooperation with the Ukrainian natural graphite mining sector in the context of the EU-Ukrainian strategic partnership agreement signed in 2021. Discussions with other parts of the Ukrainian graphite industry are still ongoing.

Cooperation with Syrah Resources who has increased supply of natural graphite into the EU in the past year will also foster more global cooperation on sustainability and know-how and will help the association to grow.

Due to the pandemic 2021 was not an easy year for many sectors in terms of managing supplies and personnel but the sector managed to maintain its production and supply to customers.

However, the impact of the EU's climate change policies and the related increase of energy costs in the second half of the year and the outlook for 2022 started to be a serious challenge in particular for the synthetic graphite production and its related products. It is hoped that EU and Member States will find ways of providing competitively priced energy for industry and consumers and thus maintain one of the key enabling materials for the renewable, e-mobility and energy storage sectors in Europe.

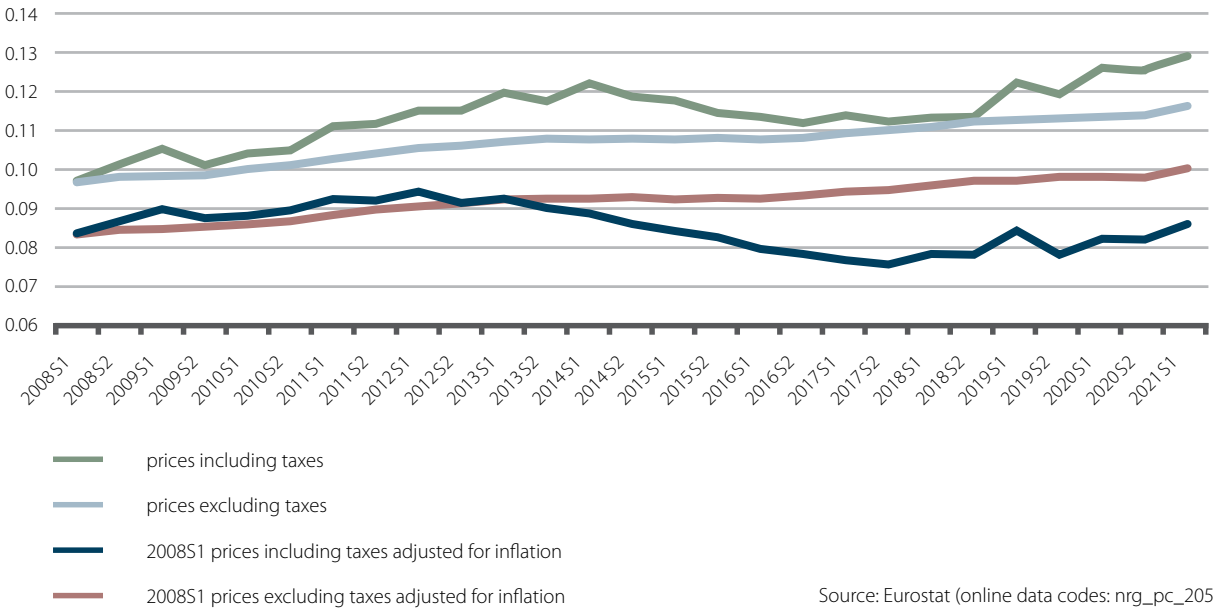
Juan Antonio Aranzabal
President



Contribution to EU's policies on Climate Change and Energy, Adaptation and Mitigation

The steep increase in energy prices and its negative impact on the European Carbon and Graphite Industry

Development of electricity prices for non-household consumers, EU27, 2008-2021 (EUR per kWh)



Source: Eurostat (online data codes: nrg_pc_205

After a slightly slow drop in 2020, global electricity demand grew by 6% in 2021 and that was the largest ever annual increase in absolute terms (over 1 500 TWh) and the largest percentage rise since 2010 after the financial crisis. Wholesale electricity prices in the fourth quarter of 2021 in France, Germany, Spain and the United Kingdom were three to more than four times higher than the fourth quarter 2016-2020 average. This was mainly caused by the steep rise in gas prices, alongside increased demand, and the EU ETS prices more than doubling in 2021 compared with 2020. Europe's Nordic region also saw a surge, wholesale prices rising in the fourth quarter of 2021 almost three times compared with the fourth quarter average of 2016-2020, and over seven times higher than the same period in 2020. However, average prices of EUR 96/MWh in the fourth quarter of 2021 were only about half as high as in Western Europe. (Source: IEA, Electricity Market Report)

The sharp increase in electricity prices overlapped with the European Union putting forward a wide range of reforms as part of its Fit for 55 Package, to align with the new 2030 EU emissions target, package including a more aggressive decline of the greenhouse emissions cap, reinforcement of the market stability reserve to strengthen resilience to future exogenous shocks, and more targeted carbon leakage rules.

ECGA is afraid that, if the current trend continues, without any support, the industry will lose its market share and profit margins to competitors who do not face the same costs abroad. At the same time, the electricity price-related constraints on the carbon and graphite sector will also negatively impact its above-mentioned downstream European industries whose resilience is equally at stake.

The future of global energy policies is still unpredictable and current measures around the world remain fragmented and vary significantly between different regions. Even more, in most countries beyond Europe, the competitors profit from regulated tariffs set by local authorities or from favourable electrical energy agreements which protect them against the recent price increases. In such an asymmetric world, the carbon and graphite sector cannot compete successfully.

In this context, ECGA calls upon the EU level and Member States decision makers to address the current electricity price emergency and take the necessary measures to set up the basis of a coherent, environmental, socio-economic support framework allowing the implementation of most efficient measures to reduce greenhouse gas emissions while ensuring that long-time goals the future and international competitiveness of the industry is not undermined.

The NEED for being included in the EU's Revision of the State Aid Guidelines for Environment and Energy (CEEAG)

In December 2021, the College of Commissioners endorsed the updated Guidelines on State aid for climate, environmental protection and energy ('CEEAG'), which have been published in the OJ and entered into force in January 2022. The updated rules include an alignment of the EU objectives and targets set out in the European Green Deal with other recent regulatory changes in the energy and environmental areas, they support projects for environmental protection, including climate protection and green energy generation and incorporate potential solutions for the decarbonisation of the economy in a broad and flexible manner.

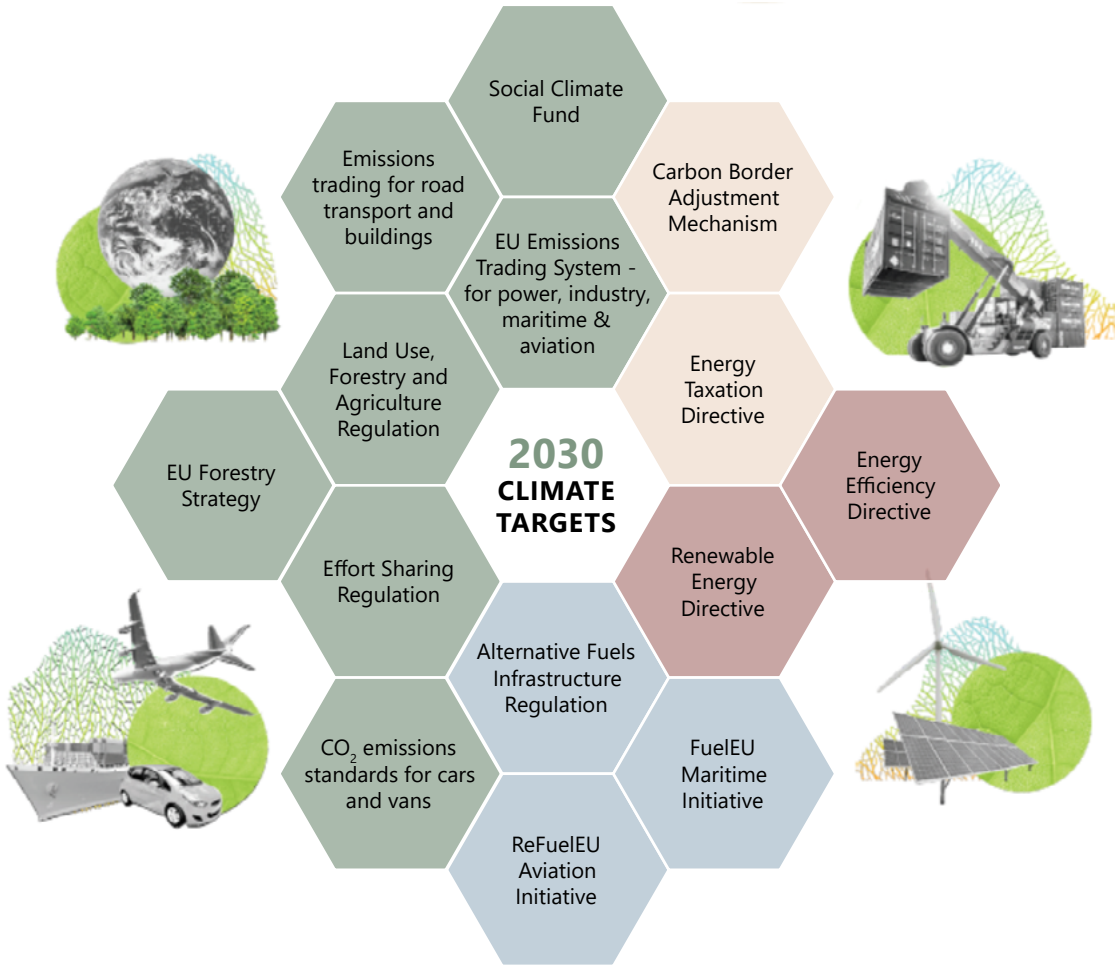
All throughout the CEEAG negotiation process, ECGA maintained its position, as follows:

- The assessment at NACE – code level is not always enough or representative for a particular industry; in particular if this industry is part of a NACE - code ending in xx.99 (99 = miscellaneous);
- The disaggregated PRODCOM level evaluation should be part of the eligibility assessments as to avoid discrimination between sectors and subsectors;
- Not allowing for a disaggregated assessment outside the NACE code or a qualitative evaluation beyond the quantitative ones disrupts the EU level climate change coherence and legal reasoning;
- Not allowing for a disaggregated PRODCOM level assessment would prevent the achievement of the main goal and objectives of the revised CEEAG;
- PRODCOM 23.99.14 - the artificial graphite, colloidal, semi-colloidal graphite, and preparations industry should be included on the list of eligible sectors under Section 4.11 - Aid in the form of reductions from electricity levies for energy-intensive users as it meets all necessary criteria;
- The CEEAG violate Article 5(4) of the Treaty on the European Union, and in Protocol No. 2 on the application of the principles of subsidiarity and proportionality annexed to the Treaties.

In October 2021, ECGA welcomed the European Parliament Joint Motion for a Resolution on the Climate, Energy and Environmental Aid Guidelines (CEEAG) calling on the Commission to support the ecological transformation of EU companies in the transition to a carbon-neutral economy, while safeguarding the recovery from the COVID-19 crisis, job creation in the EU and competitiveness. The Resolution also included a reference to the importance of keeping certain sectors amongst which non-metallic mineral products of the state aid eligibility list.

At the end of the negotiation process, through concerted efforts, ECGA managed to secure the state aid eligibility, so that the document published in January 2022 includes artificial graphite, colloidal, semi-colloidal graphite, and preparations as qualified to receive aid in the form of reductions from electricity levies for energy-intensive users as it meets all necessary criteria.

Climate Change: The EU's Fit for 55 Package and the carbon and graphite sector



On 14th July the European Commission adopted the Fit for 55 Package, consisting of a set of 13 inter-connected proposals, all driving towards the same goal of ensuring a fair, competitive and green transition by 2030 and beyond. Overall, the package strengthens eight existing pieces of legislation and presents five new initiatives, across a range policy areas and economic sectors: climate, energy and fuels, transport, buildings, land use and forestry.

Pricing	Targets	Rules
• Stronger Emissions Trading System including in aviation • Extending Emissions Trading to maritime, road transport and buildings • Updated Energy taxation Directive • New Carbon Border Adjustment Mechanism	• Update Effort Sharing Regulation • Updated Land Use Land Use change and Forestry Regulation • Updated Renewable Energy Directive • Updated Energy Efficiency Directive	• Stricter CO_2 performance for cars & vans • New infrastructure for alternative fuels • ReFuelEU: More sustainable aviation fuels • FuelEU: Cleaner maritime fuels

The European Carbon and Graphite Association (ECGA) acknowledged the publication of the Fit for 55 Package as the largest and probably the most significant cluster of measures the EU has ever published at the same time, towards the same goal. The carbon and graphite sector expressed its firm conviction that these measures should set up the basis of a coherent, environmental, socio-economic, and feasible policy framework allowing the implementation of most efficient measures to reduce greenhouse gas emissions while ensuring that long-time goals the future and international competitiveness of the industry is not undermined. In this context, ECGA believes that the overall package should ensure that:

- The Emissions Trading System (2021 – 2030) remains the main market instrument for Europe's industries to cost-effectively reduce their emissions.
- The European carbon and graphite industry, as one of the most electrified industries in the global industrial production, is eligible for indirect emission costs compensation;
- Non-ETS installations and their contribution to the reduction of GHG emissions are also taken into consideration;
- Carbon and graphite - related mineralogical processes, such as artificial graphite, colloidal, semi-colloidal graphite, and preparations industry outside the scope of the Energy Taxation Directive.
- Investments in low-carbon products and technologies continue to be available. It is essential that the new technologies are cost-effective, so to maintain the competitiveness of the carbon and graphite industry and its jobs. The financing instruments at EU and Member States level should continue to be present and to facilitate investments. Support for development, piloting, and up-scaling of key innovative decarbonisation and energy efficiency technologies is still needed.

Updating the EU Emissions Trading System (ETS) and the need for free allowances for the sector

Considering the proposed increased climate ambition for 2030, the levels of reductions under the EU ETS also needed to be increased to contribute to achieving at least 55% net greenhouse gas reductions for the EU by 2030 compared to 1990. In addition, to achieve climate neutrality by 2050, over the coming decade energy-intensive industries and not only will have to implement several measures to ensure decarbonsiation. The deployment and scaling up of existing innovative low-carbon technologies will need support, as will research into further innovative solutions.

Carbon and graphite products are commodities traded worldwide with major producers headquartered in China, Japan, and the USA and, while companies in the EU face both direct and indirect carbon costs, such costs are not faced by their other major international competitors. This situation means that European companies must absorb costs or lose competitiveness, neither of which the companies are positioned to do.

Also, carbon emissions related to the sector's production process occur both on-site from the combustion of fuels (direct emissions) and through electricity use due to the use of carbon-bearing raw material at the location of electricity production (indirect emissions). For example, feedstock production requires heating up to 3,000 °C during the high temperature graphitisation process step – much of which is done by electrical heating. Graphite production therefore is highly energy-intensive, but also inherently an electricity-intensive production process.

In this context, during the last year, ECGA has concentrated its efforts in raising the industry's interests vis-a-vis the Commission, Parliament as Council, by underlining the following elements essential to achieving the ETS as well as the Fit for 55 Package objectives:

- Free allocation should continue to be the key tool for sectors exposed to carbon leakage alongside financial compensation for CO2 costs and electricity prices (electricity represents a substantial share of the carbon and graphite industry operating expenses);
- The draft Revised ETS should include a clear definition of the "decarbonisation" concept that ensures its coherent use across legislation (The Climate Law, ETS, Energy Efficiency, The European Industrial Strategy);
- The process emissions allocation factor should be kept at 97%, without distortions;
- Given the latest trade and competition policy developments, the other Union policies and legislation currently being revised (CBAM, EED, State Aid for environment and energy, etc.), the international commitments and material market developments, as well as the ETS State Aid Guidelines should also be updated to maintain a level playing field.

A new proposal of an EU Energy Taxation Directive (ETD) – increasing electricity costs?

The ETD proposal presented by the Commission as part of the Fit for 55 package aims at adjusting the way in which energy products are taxed in the EU. The new rules will address the negative effects of energy tax competition, will help secure revenues for Member States from green taxes, will remove outdated exemptions and incentives for the use of fossil fuels, and help foster investment in new and innovative green industry by making rules clearer so that investors and innovators can plan their long-term investment in green technology and renewables more securely.

On 27th October, European industry associations dealing with mineralogical processes have jointly raised a concern with regards to Article 3(1) of the Energy Taxation Directive proposal, where the current tax exemption for such processes has been removed from both the article itself as well as from the preamble. They requested the EU to retain the tax exemption for mineralogical processes.

ECGA is legitimately concerned that including mineralogical processes in the scope of the directive will only lead to additional costs. Mineralogical processes are subject to thermodynamic energy requirements that cannot be reduced. Even more, energy costs, primarily due to electricity consumption, represent an important part our sector's operating cost and thus, increasing them by adding the energy tax would slow down the investments ensuring the transition to a low carbon economy and implicitly lead to an investment leakage, fewer jobs, less production, and less innovation.

In this context, during the last year, ECGA has concentrated its efforts in raising the industry's interests vis-a-vis the Commission, Parliament as Council, by underlining the following elements:

- The Energy Taxation Directive should avoid overlapping with other EU measures while ensuring the legal certainty, long-term goals as well as the international competitiveness of the industry
- Including mineralogical processes in the scope of the Directive would lead to a severe cost burden for the industry. Increasing the cost burden on selected industrial sectors will hinder not only the capital-intensive investments into new low-carbon technologies but also the achievement of the Fit for 55 Package main objectives.
- Including mineralogical process in the scope of the Directive will distort the level playing field in the single market.
- The criteria and methodology based on which the mineralogical processes have been excluded from the exemption list are missing from both the revised directive as well as from the Impact Assessment accompanying it.

Joint Industry Position on Revision of the Energy Taxation Directive

Policy Amendment Request: Keep mineralogical processes outside the scope of the Energy Taxation Directive, by including them in the list of exemptions to which the Directive shall not apply, as per Article 3.1 (b).

The EU's revision of the Energy Efficiency Directive and technological limitations

The European Commission published as part of the Fit for 55 Package a proposal for recasting the EU Directive on Energy Efficiency, aimed at further stimulating EU efforts to promote energy efficiency and achieve energy savings in the fight against climate change. It seeks to introduce a higher target for reducing primary (39%) and final (36%) energy consumption by 2030 now binding at EU level, in line with the Climate Target Plan, up from the current target of 32.5% (for both primary and final consumption). It also introduces a benchmarking system for Member States to set their national indicative contributions to the binding EU target. The new directive also proposes to nearly double Member State annual energy savings obligations in end use.

ECGA contributed to the public consultation which concluded on 19th November 2021. In its input, the European carbon and graphite industry expressed its belief that an energy efficient economy is key to reaching the ambitious EU 2030 and 2050 climate targets, while ensuring growth and prosperity in Europe. However, the industry believes that the main objective of the energy efficiency directive should be to ensure an integrated approach to consistency, stability, and predictability along the whole value chain by taking into consideration the following suggestions:

- Introducing an absolute value-cap on energy consumption should be avoided. Future needs considering the potential trade-offs between decarbonisation and energy consumption should be considered instead.
- The scope and application of the "Energy efficiency first" principle should be clarified and always taken into consideration when applied to energy intense sectors, such as the carbon and graphite one.
- Ensure that energy savings are both technically and economically feasible when raising the annual energy savings obligation to be applied on Member States between 2024 – 2030, from 0.8% to 1.5%.
- The Energy Efficiency should avoid overlapping with other EU Fit for 55 Package elements, such as ETS, CBAM or ETD.

Markets

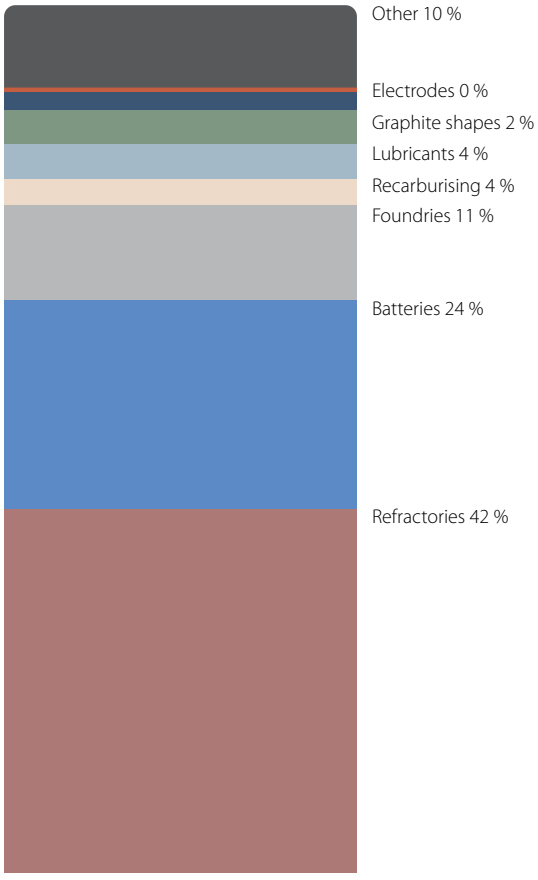
The global graphite market is predicted to grow considerably

The markets for carbon and graphite products are very diverse, and in many applications and sectors carbon and graphite products are essential. Natural and synthetic graphite are sometimes used for specific applications, but also mixed to obtain best possible product performance. They sometimes can substitute each other, but often specific purities and technical specifications determine the uses.

In 2021 the consumption of natural graphite worldwide amounted to 1147 kt and is expected to raise till 2025 up to 1452 kt which would amount to an increase by 26 %. The biggest increase of its use is expected in batteries where the consumption would double.

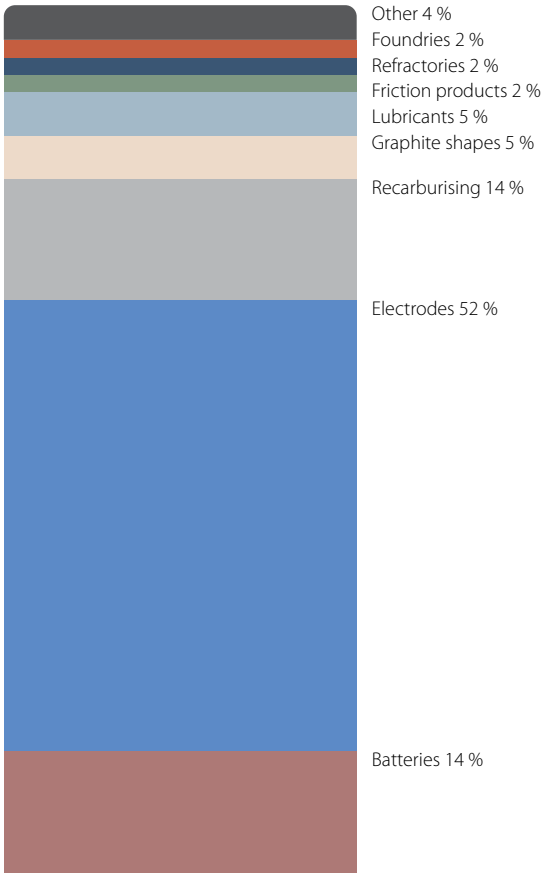
The worldwide consumption of synthetic graphite in 2021 amounted to 2256 kt and is expected to grow to 3041 kt in 2025. Electrode consumption is expected to rise by 20% and for batteries by more than 100%.

Natural graphite by application in 2021



Source: Wood Mackenzie, 2022

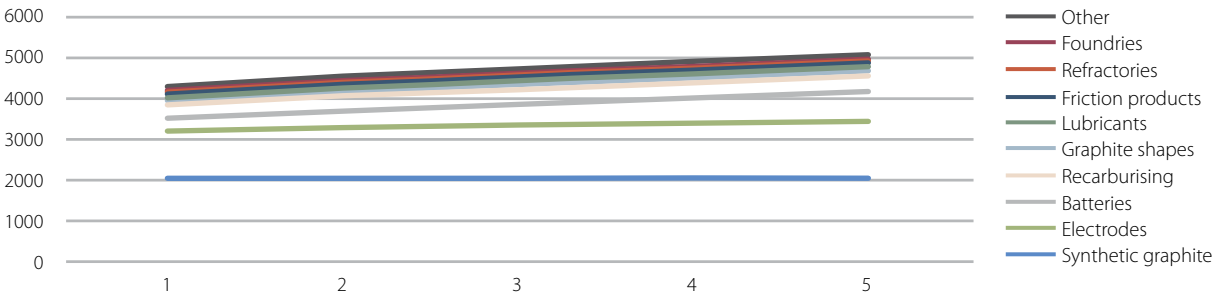
Synthetic graphite by application in 2021



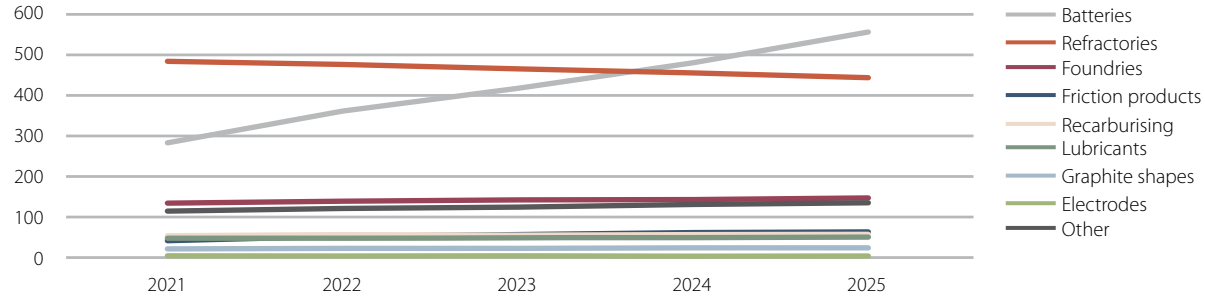
Source: Wood Mackenzie, 2022

In light of the growth expectations for various market segments EU policy makers need to ensure that the framework conditions for investments and permits of existing and new plants are such that European producers can ensure a solid market share to protect the EU's economy and the resilience of EU supply chains.

Synthetic Graphite Demand Forecast (kt)



Natural Graphite Demand Forecast (kt)



Source: World Demand Forecast by application for natural and synthetic graphite, Wood McKenzie 2022

EU's policies and actions to facilitate access to raw materials including natural graphite

Access to natural graphite in Europe – opening and reopening of new mines

Up to now, China provided about 50 % of the EU's supplies of natural graphite, Brazil provided about 12%. Europe currently has two small graphite mines operating in Austria and Germany, but both do not deliver into the battery market because the mined grades are not suitable for batteries.

Europe's wish to improve its economic resilience and to decrease dependency has led to new exploration, mine development projects and investments into processing. With modern exploration technologies new results are expected. Worldwide a significant number of exploration projects are under development. At the end of December 2018 there were 157 known projects globally, 10 of which were located in Europe. New graphite deposits and previously operated have been identified in the Czech Republic, Finland, Norway, and Sweden.

The extractive industry has repeated called for improvements in the permitting processes and a higher public acceptance of extraction of minerals which are needed for renewable energies and energy storage as well as e-mobility.

Access to natural graphite – increasing international cooperation and diversifying supply

The European policy maker is furthermore trying to secure alternative access to critical raw materials via its strategic partnerships with Canada, the Ukraine as well as the African countries. Extensive work is carried out under these partnership agreements to secure sustainable supply of such minerals into the EU in the future. ECGA has new members in the Ukraine and Mozambique and has been discussing with other mining companies in Sri Lanka, Madagascar and Brazil to foster a larger worldwide cooperation.

EU and Canada set up a strategic partnership on raw materials with special focus on Rare Earth

On 21st June, the framework setting the ground for the EU-Canada strategic partnership on raw materials was formally adopted, following political endorsement at the EU-Canada Summit on 15th June. The strategic partnership will focus on the integration of EU-Canada raw material value chains while specifically enhancing collaboration on science, technology and innovation collaboration; as well as environmental, social, and governance (ESG) criteria and standards.

The EU is pursuing strategic international partnerships with third countries to diversify and strengthen the resilience of supply chains, in line with the Commission's critical raw materials action plan published in September 2020, and the updated industrial strategy adopted in May 2021 and with the objectives of the Commission's trade policy review issued in February.

EU and Ukraine set up a strategic partnership on raw materials including graphite

On 13th July, the EU and Ukraine have launched a strategic partnership on raw materials, achieving Vice-President Maroš Šefčovič and Prime Minister of Ukraine Denys Shmyhal signed a Memorandum of Understanding underpinning the partnership on a closer integration of raw materials and batteries value chains. The strategic partnership with Ukraine will include activities along the entire value chain of both primary and secondary critical raw materials (including graphite) and batteries?

Access to synthetic graphite in Europe – maintaining resilient and sustainable manufacturing

As mentioned before, synthetic graphite is a viable substitute for natural graphite in batteries, at least to a certain degree and at the same time enhancing the performance of the battery. Improving sustainability of manufacturing synthetic graphite is closely linked to know-how in managing high temperatures, chemicals, closed production processing systems, lower energy consumption and increased use of renewable energy in European grids. The greening of the synthetic graphite production will go hand in hand with the greening of Europe's energy networks. In addition, in terms of other environmental criteria the European carbon and graphite producers, whether producing natural or synthetic graphite, are strictly regulated by EU and national legislation, are permitted according to the EU's BAT under the IED and are actively contributing to the UN's SDGs.

Brand-new processing plants are currently being built in Sweden and Finland as well as in Norway and Germany and other parts of the EU which will provide state-of-the-art processing and manufacturing facilities. For example:

- Vianode is investing in new facilities including a sophisticated laboratory and development center and an industrial pilot facility at the Heroya Industrial Park in Porsgrunn, Norway, for new large-scale industrial production.
- SGL Carbon, one of the manufacturers of synthetic graphite for anode materials in Europe will develop materials with increased performance, energy-efficient and sustainable manufacturing processes to novel recycling concepts (IPCEI project).
- Leading Edge Materials is working on a graphite-processing plant that would produce spherical graphite, battery-grade graphite and other forms of processed graphite at the company's Woxna mine site in Sweden.
- Talga Resources is constructing a scalable battery anode production facility and integrated graphite-mining operation in Northern Sweden, which is expected to start production in 2023. New patents are being developed as well in order to process mining materials, such is the case at Talga Resources and its innovative technologies for the industrial scale production of micro-graphite, nano-carbon and graphene dispersions and powders for functionalisation into various applications.
- Imerys Graphite and Carbon just opened in 2020 a brand-new research centre in Switzerland, mainly dedicated to developing new synthetic graphite grades specific for Li-ion batteries.

EU policy events and positions in 2021

EU Raw Materials Week 2021

The sixth edition of the "Raw Materials Week" took place from 15th to 19th November 2021 gathering a wide range of stakeholders discussing policies and initiatives in the field of raw materials addressing critical raw materials, trends in innovation and skills for raw materials, EU Horizon technology success stories, the EU-Canada Partnership, the UNECE Resource management. During the week the Commission presented its 3rd Raw Materials Scoreboard which provides an in-depth analysis of Europe's raw material supply chains, their competitiveness and trade flows. ECGA had provided information on natural graphite in this context.

Adoption of Report on Critical Raw Materials by European Parliament : Securing and diversifying supply of critical raw materials

On 24th November, the EP adopted the report on "a European Strategy for critical raw materials" covering issues such as challenges and opportunities for critical raw materials, the EU's strategic autonomy and resilience, the need for closing mineral loops, questions of sourcing from the EU and supply diversification. ECGA had made a presentation at the CCMI meeting and participated in the preparation of the report. Critical raw materials are essential for the EU's twin transitions.

The expansion of green technologies, such as those underpinning wind and solar power, domestic energy storage, and the production of batteries for electric vehicles will drive up demand for raw materials such as cobalt, lithium, graphite, manganese and nickel in the next two decades. However, the challenge goes beyond green technologies. The increase in demand for critical raw materials is expected to coincide with an upturn in the major suppliers' readiness to impose export restrictions.

The report reaffirms that the transition towards a digital, energy-efficient and climate-neutral economy will lead to a significant higher demand for metals and minerals and the need to support a circular economy approach. But focusing on recycling will not be sufficient to meet the surging demand for metals and minerals, and the report also wants the EU to enable the European mining industry to contribute to the green and digital transitions. A smart mix of industrial, research and trade policies with international partnerships could ensure sustainable and diverse supply.

ECGA had joined the Critical Raw Minerals Alliance as a full member, an alliance created by industry to advocate the importance of critical raw materials (CRM) for the European economy and to promote a strong European CRM policy. Through its membership, the CRM Alliance represents almost all of the 30 listed critical raw materials and is steadily growing.

EU Strategic Foresight Report

The European Commission's second annual Strategic Foresight Report, "The EU's capacity and freedom to act" was published on 8th September 2021. It presents a forward-looking and multidisciplinary perspective on important trends affecting the EU's capacity and freedom to act in the coming decades, including climate change and other environmental challenges, digital hyperconnectivity and technological transformations, pressure on democracy and values, as well as shifts in the global order and demography. It addresses emerging issues, uncertainties and choices that will shape the future of Europe and the world, and sheds light on possible policy responses for the EU's open strategic autonomy. The 2021 Strategic Foresight Report has also identified 10 strategic areas where the EU can strengthen its capacity and freedom to act. 10 areas were identified including decarbonised and affordable energy, capacity in data management, artificial intelligence and cutting-edge technologies, securing and diversifying supply of critical raw materials, security and defence capacities and access to space.

ECGA welcomed the report which highlights among other materials the role of graphite in the future technologies.

The EESC: EU industrial policy assessment of critical dependencies of the EU - development of EU paper on eco-systems

On 13th July the European Economic and Social Committee held a webinar in preparation for its opinion on the EU eco-systems. ECGA was represented on the panel and Mrs Hebestreit addressed the question of complementarity of natural and synthetic graphite in achieving the low-carbon economy by providing essential materials for circular economy, mobility and other applications.

EU Principles for sustainable raw materials

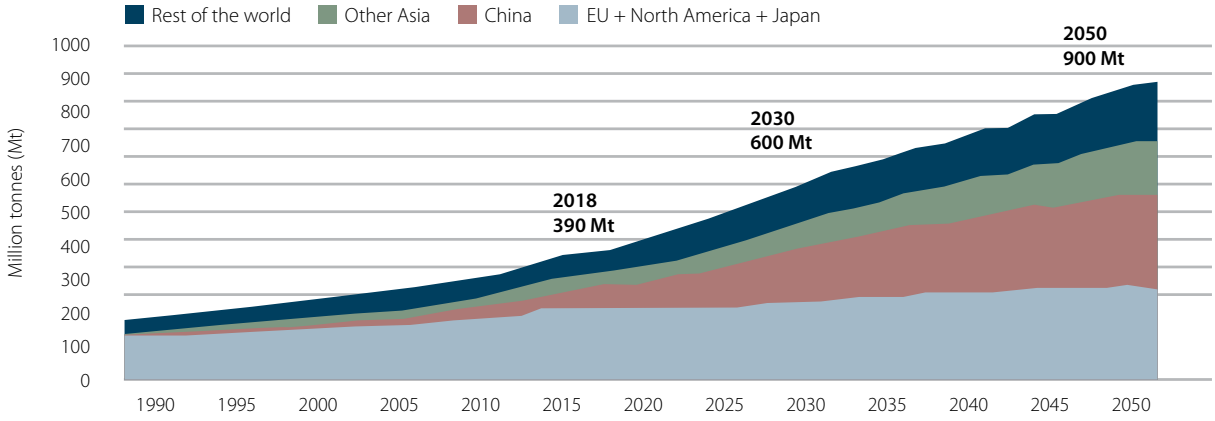
The objective of the EU principles for sustainable raw materials, is to align the understanding of sustainable raw materials extraction (from exploration to post-closure) and processing operations in the EU amongst Member States and define the general direction towards the SDGs. The EU principles for sustainable raw materials are applicable in the EU to the extraction and processing stages of non-energy raw materials and to the entire minerals value chains lifecycle from exploration to post-closure, as well as to the production of secondary raw materials from extractive waste streams such as waste rocks, processing wastes/tailings.

Graphite electrodes – key to Circular Steel

Market outlook – the rise of EAFs

The World Steel Association reported that global steel demand grew to 1.951.432,252 Mt in 2021. For 2022, steel demand is expected to see a further increase of about 2.2%. Today, it is estimated that the global steel industry uses about 2 billion tonnes of iron ore, 1 billion tonnes of metallurgical coal and 575 million tonnes of steel scrap to produce about 1.7 billion tonnes of crude steel. Every steel plant is also a recycling plant, and all steel production uses scrap, up to 100% in the electric arc furnace (EAF) and up to 30% in the blast furnace (BF) route. Scrap plays a key role in reducing industry emissions and resource consumption. Every tonne of scrap used for steel production avoids the emission of 1.5 tonnes of carbon dioxide, and the consumption of 1.4 tonnes of iron ore, 740 kg of coal and 120 kg of limestone. Forecasts of scrap availability indicated that the recycling of scrap will grow in its importance and with it also the production of the Electric Arc Furnace route which requires graphite electrodes. This is a result of the life-span of steel products and their return to society after use.

End-of-life scrap availability

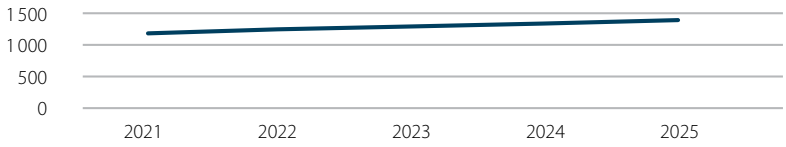


Source: World Steel Association, Dr Baris Bekir Çiftçi, 2022

As a consequence there will be a need to increase the number of Electric Arc Furnaces , also in Europe, and with it the need for graphite electrodes will rise.

Expected growth in graphite electrodes (synth. only) (kton)

Source: Wood Mackenzie 2022



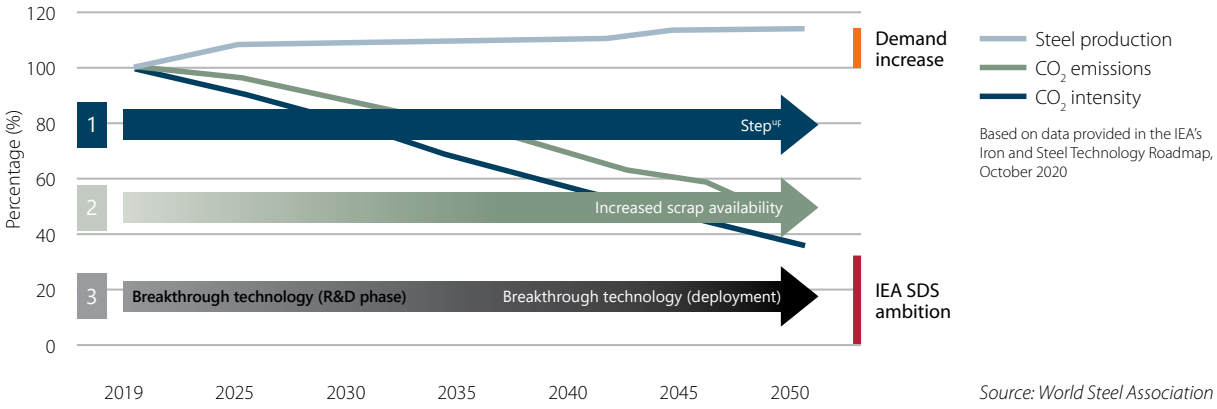
This will require investments in new installations and increasing the production capacity of graphite electrodes in existing installations and possible permitting new manufacturing sites. Whether such investments can be done in Europe depends largely on the supply of competitively prices electricity and lean permitting processes.

High Level Group on Energy Intensive Industries – transition pathways

In September the European Commission published a staff working document on the Energy Intensive Industries which included considerations already developed in the documents on Strategic Dependencies and the Competitive Clean European Steel. The Commission announced the development of Ecosystem Transition Pathway documents for the sectors of energy intensive industries (incl. steel), mobility and construction. The documents lay out the strategic development options and requirements for these industries to become carbon neutral highlighting the innovative developments required including what is called the "clean steel initiative". For the graphite electrode business this means that even with the new hydrogen technology applied in the future graphite electrodes will still be required.

Reducing our impact

Steel production. total CO_2 emissions and CO_2 intensity, 2019–2050 under the International Energy Agency (IEA) Sustainable Development Scenario (SDS)



Source: World Steel Association

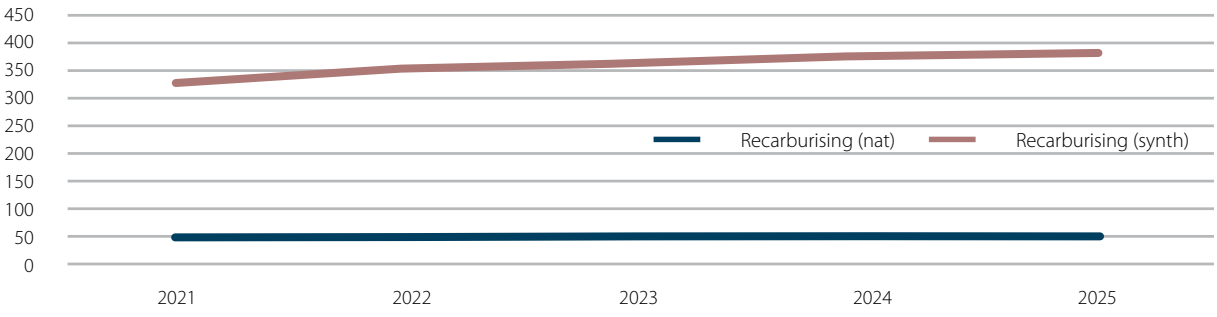
At the annual meeting of the World Steel Association Mr Edwin Basson, Director General, explained the expected future developments as follows:

- Step1: Increased efficiency to be achieved till 2030. However, even if the best practice from the 15 % best performing operators was extended, this would only provide a potential reduction in CO2 emissions of 15-20%.
- Step2: Increased use of scrap till 2040. Globally, the World Steel Association predicted a 40-45% increase in EAF by 2040. Due to limited by scrap availability the steel production via the blast furnace route will therefore still be there until the end of the century. A scrap usage growth is predicted in the order of 22-30% (from current~10% scrap usage) which would mean a similar growth rate for the graphite electrode business.
- Step3: Breakthrough technologies like carbon capture, utilisation and storage (CCUS), sustainable biomass, substituting hydrogen for carbon as a reductant can be expected after 2040 but will then still be required for the production of final steel products.
- Step4: Extension of life cycles of steel. Across all steel products, the current average lifecycle is 40 years. For every year that this can be extended by, an entire year of CO2 emissions can be saved.

Apart from the electrodes the steel industry furthermore requires recarburisers (milled graphite) for carburization of steel and cast iron. The global graphite recarburiser market size is projected to reach US$ 234.9 million by 2027, from US$ 179.8 million in 2020, at a CAGR of 3.6% during 2021-2027. However, currently the Asia-Pacific is the major consumption region of the global market, which takes about 70% market share and market competition is intense.

Expected growth for graphite in recarburisers (kton)

Source: Wood Mackenzie 2022



Batteries – key to climate change mitigation

Contributing to climate change mitigation through energy storage

Energy storage is a key technology for battling carbon dioxide emissions from the transport, power, and industry sectors. Therefore, in October 2017, European Commission Vice-President Maroš Šefčovič launched the European Battery Alliance (EBA) to support the battery industry in Europe throughout its whole value chain. Since the EBA launch, a European Strategic Action Plan on Batteries was published in March 2018, setting the direction for the development of a competitive battery industry in Europe.

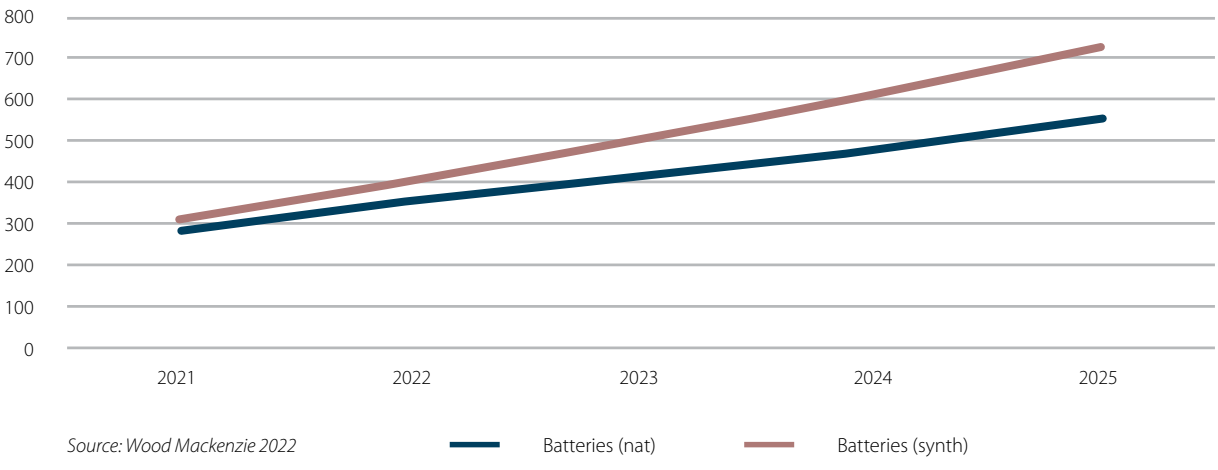
Batteries are key to e-mobility as well as digititisation and all electric and electronic appliances. One of the key developments is that the battery packs from mobile applications can be used at the end of their life for other energy storage applications which require less high-performance levels.

Natural and synthetic graphite needed by EV sector for e-mobility

In the coming years, exponential growth from the EV sector will propel the industry's graphite demand beyond that of the traditional consuming sectors. A new analysis by Fastmarkets Research looked into the future of graphite mining, paying special attention to the relative advantages and disadvantages of synthetic graphite versus natural graphite: "From a performance perspective, EV automakers prefer synthetic graphite, citing its superior fast charge turnaround and battery longevity. EV automakers are targeting a 10-year battery lifespan, with synthetic graphite better suited to longevity," the report reads. "The manufactured nature of synthetic graphite also gives the material an advantage in terms of consistency of supply quality relative to natural graphite."

According to the report, although natural graphite supply is also dominated by China, with approximately 62% of total supply in 2020, new natural graphite projects are more diverse, with numerous projects in Africa helping to diversify the supply base, and potential projects in North America and Europe helping to provide the localization of supply to major automakers.

Expected growth for graphite in batteries (kton)



Source: Wood Mackenzie 2022

Today on average 50% in weight of a lithium-ion battery is graphite, the varying degrees of use of synthetic and natural graphite depending on the application of the battery. A batter for an electric vehicle or for stationary applications contains on average 65 % synthetic, 35% natural graphite. Batteries for electronics contain both at varying ratios, but roughly 50%/50% of both.

Already today processing and manufacturing scraps and residues are being treated and reintroduced into the processing or are sold for other applications. Whilst reuse of batteries is already happening the recovery and recycling of graphite from batteries will depend on dismantling economy of scale and additional research into reconditioning of the material for further use. Europe has a well-established recycling culture and infrastructure when it comes to cars and batteries. Already today electric vehicles are dismantled and batteries from electric vehicles are reused for energy storage, they are recycled and reprocessed as were/are the lead-acid batteries. With the increased volume of these batteries in the market and at the end-of life stage these activities will also grow, and new systems will emerge. Currently, graphite from these batteries can be utilised to recover the metal components of the batteries or can be reprocessed and used in other graphite applications such as electrodes, friction, powder metallurgy, carbon raisers, refractories, etc. and is therefore not wasted. Whether in the future, if completely separated, the graphite anode material can be re-utilized for the same application will depend on successful research in this area. Direct recovery of graphite materials for the same application is still at the initial stage of development.

ECGA joins BEPA

In addition to the EU Battery Alliance, ECGA also joined BEPA, the Batteries European Partnership Association (BEPA) in July, confirming its commitment to improve the competitiveness of the European battery industry. Counting more than 165 members, BEPA is a leading association dedicated creating a competitive, sustainable and circular European industrial battery value chain for stationary applications and e-mobility through RTD. The BEPA members will work together to prepare Europe to manufacture and commercialise by 2030 the next-generation battery technologies that will enable the rollout of the zero-emission mobility and renewable energy storage.

BATT4EU: Achieving a more competitive and sustainable EU battery value chain

The European Commission and BEPA had signed the Memorandum of Understanding, signifying the launch of BATT4EU, the co-programmed partnership under Horizon Europe – the next Framework Programme for Research and Innovation of the European Union – for the creation of a competitive and sustainable European industrial battery value chain. BATT4EU is a public-private partnership seeking to create a world-class European research and innovation ecosystem for batteries with both stationary and mobile uses. This novel project is largely inspired by the necessity for an enduring and organised effort involving industry, research, and the public sector in order to meet the challenge of developing this ecosystem and bringing predictability to European battery stakeholders. The core objective of BATT4EU is to create a world class innovation ecosystem in Europe by 2030, boosting a competitive, sustainable, and circular European battery value chain and to fuel the transformation towards a carbon-neutral society.

Specialties – the versatility of products – indispensable for Europe's economy

A wide range of graphite specialties are use in industrial manufacturing and their growth rate is closely linked to European production. They range from small carbon brushes for a wide range of electrical and electronic equipment to highly specialized applications in the production of solar panels or semi-conductors.

The European Chips Act: No semi-conductors without graphite tooling

The applications of special graphite products in the electronics industry include the manufacturing of silicon semiconductor, compound semi-conductor, LED chips, lithium-ion batteries, LCD panels, hard disk, etc. The special graphite components, such as heaters, crucibles, reflectors, and heat shields, are also used for crystal growing units. The high-temperature zone of the furnace consists of heat-resistant graphite components. Special graphite is mostly used in the semiconductor and LED industries, for the production of polysilicon. The products made from special graphite include cleaned electrodes for polysilicon separation, heat shields, thermal insulation components, and gas ducts for converters. The finished semiconductor product is manufactured after silicon epitaxy process, in which wafers are passed on graphite susceptors. These susceptors are generally made from high-strength isostatic graphite.

Specialty graphite products are imperative in the silicon-based PV value chain. Specialty graphite is instrumental in providing the required high purity and precision, for the applications that operate at very high temperatures, and in an extremely corrosive environment. The capacity of specialty graphite applied to electric semi-conductive and solar energy has increased from 25,000 metric ton to 50,000 metric ton, over the last five years, thereby augmenting the growth of the market. With the European Commission's commitment to increase its market share up to 20 % of world production, the increase in graphite used for this application will have to increase by the same percentage. Commissioner Breton also announced setting up a European Semiconductor Fund, which would complement existing financing opportunities at the EU and national levels, as well as the Important Projects of Common European Interest (IPCEI), the Commission's instrument for strategic industrial investments. The new financial instrument might be a way to fill in the current investment gap, as chips are very advanced technologies that require years of research and expensive production facilities. The ECGA therefore welcomed the intention and preparation for a European initiative as announced on 15th September 2022.

EU lightweighting strategy and carbon fibres and composites

In September 2021 the Austrian government (Austrian Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK)) hosted the 2nd meeting of the European Lightweighting Network in Vienna which ECGA attended. The scope of this meeting is to set up and foster a political exchange of views on the lightweighting technology contribution towards the European Green Deal objectives. The overall objective of the European Lightweighting Network meetings is to develop such a common view on the European lightweight potential and the framework requirements to exploit it for serving best the Green Deal Goals. Thus, we need a broad range of minds from industry, research, and governments willing to develop ideas for co-operations and activities on project, network and intergovernmental level making the lightweighting potential better tangible for stakeholders, the overall economy and European citizens.

ECGA welcomes the Austrian, German and Swedish governments' proposal for a European lightweight strategy with Research and Innovation at its center and is looking forward to the next conference to be held in Sweden in 2023.

Workshop on Lightweighting as a Contribution to the EU's Green Deal

Continuing the strategic discussions, the European Multi-material Lightweight Alliance with support of ECGA and Composites United hosted a workshop on "Lightweighting as a Contribution to the EU's Green Deal" in November 2021. The webinar was moderated by Mrs Corina Hebestreit who was joined by the European company experts in the field. The demand for raw materials is continuously increasing in Europe and globally, lightweighting materials and design are a promising way to reduce both, the demand for energy and resources. In this respect, lightweighting can contribute to the European Green Deal which strives for a climate neutral economy by 2050. Europe's carbon and composites sector are key to several ecosystems such as e-mobility, aerospace, defense, renewables, digital economy and general engineering and manufacturing

Sustainability of industrial carbon and graphite

The Carbon and Graphite industry's contribution to Sustainable Development Goals

The UN Sustainable Development Goals were established in 2015 by all the United Nations member states with the intention of working towards a more sustainable and equal world. It calls on companies to use innovation, technology, and creativity to address developmental challenges and opportunities that the companies can impact.

The carbon and graphite industry recognises the responsibility and impact we have in our business activities. We have a responsibility to develop products and processes that improve the quality of life and enable a sustainable low-carbon world, and minimise the negative impact of our activities, both environmental and social.

Demand for graphite is accelerating and so too is the demand for suppliers that can meet the highest international standards of quality, safety and environmental performance. Good product quality and sustainability is integral to Carbon and Graphite industry's drive to bring high standards of supply chain governance and product stewardship to the carbon and graphite market.

The carbon and graphite industry is committed to conduct business in support of the United Nations Sustainable Development Goals (SDGs).

SDG 1 - No poverty

While widespread poverty is not a major problem in Europe, the carbon and graphite industry's role in fostering positive economic growth, job creation and skills development helps ensuring this will continue in Europe.

SDG 2 - Zero hunger

Widespread hunger is not currently a major problem in Europe, but a growing population will soon require increased food production. Most of the machinery used requires carbon and graphite components in one way or another.

SDG 3 - Good health and well-being

Safe and healthy working conditions are a top priority in the European carbon and graphite industry. Companies also frequently extend workforce health and wellbeing programmes to local communities and contractors, ensuring positive effects on people in the surrounding areas.

Mineral raw materials such as graphite have always contributed decisively to human evolution and well-being and will continue to do so in the future.

SDG 4 - Quality education

While quality education is accessible to all European citizens, there is a need for wider society learning about the importance of carbon and graphite products. The sector provides a range of employment opportunities, invests in local trainings or extends workforce education and training to local communities and contractors.

SDG 5 - Gender equality

Most carbon and graphite companies in Europe have clear statements supporting gender equality, women filling visible leadership roles, cprocesses for ensuring a safe workplace for women, as well as official processes for recruiting and retaining female employees.

SDG 6 - Clean water and sanitation

Carbon and graphite companies have a responsibility to ensure their operations do not result in contaminated water supplies or inhibit access to clean water. Sound water practices are regulated at the EU and national levels, and companies collaborate with local experts to accurately measure, analyse and test water supplies.

SDG 7 - Affordable and clean energy

European carbon and graphite are raw materials needed for the products that produce clean energy, either as a direct component such as in batteries in cars or carbon brushes and carbon fibres in wind turbines for example, or as a constituent of other industrial processes, such as the production of silicon wafers or solar panels. Carbon and graphite companies across Europe are also working to run their operations more efficiently, using more clean energy sources and reducing their overall energy consumption.

SDG 8 - Decent work and economic growth

Carbon and graphite companies collaborate with governments and their supply chains to enhance broader economic development opportunities and invest in various ways to become economically productive.

SDG 9 - Industry innovation and infrastructure

Carbon and graphite producers in Europe and their parent companies are global leaders in innovation. The sector is constantly developing stronger, more durable and more efficient materials for these purposes.The European raw materials industry innovation and high-tech developments also contribute to very important positive impacts on the European continent and globally.

SDG 10 - Reduced inequalities

The European Carbon and Graphite industry promotes diversity and is committed to achieving and maintaining a diverse and inclusive workplace.

SDG 11 - Sustainable cities and communities

The industry contributes to sustainable cities by supporting development of infrastructure.

SDG 12 - Responsible consumption and production

The European carbon and graphite industry has been contributing substantially for decades to the Circular Economy goals by providing industrial goods to recycle steel.

SDG 13 - Climate Action

Carbon and graphite will be decisive for a transition to a Low-Carbon society.

The European carbon and graphite industry has adopted ambitious carbon management policies and targets and is providing products to reduce, eliminate and offset emissions in our daily lives.

SDG 14 - Life below water

The European carbon and graphite industry sector contributes to the oceans' sustainability by understanding and limiting its potential impacts and contributing to the protection and conservation of the oceans and seas.

SDG 15 - Life on land

The European carbon and graphite sector is working to improve operations so that land is disturbed as little as possible by its operations.

SDG 16 - Peace, justice and strong institutions

The European carbon and graphite industry is a sector complying to the jurisdictions it is operating in. It is internationally trading and in transparent dialogue with its supply chains and customers creating trust and confidence. The European carbon and graphite industry is also supplying critical raw materials and products for the defense industry which is sometimes needed to keep peace.

SDG 17 - Partnership for the goals

The European carbon and graphite industry is a very international sector and through its companies and associations is engaged in many partnerships to achieve collaborative progress on the SDGs.

More concrete examples of industry's contribution to the SDGs will be gathered by the association and presented in 2022.

EU's Sustainable Finance Initiative

In 2021 the European Commission published a renewed Sustainable Finance initiative addressing the redirecting of finance and investments to sectors that would comply with Climate Change Adaptation and Mitigation as well as Environmental issue criteria. This initiative comprises (1) a new Sustainable Finance Strategy, (2) a proposal for a standard for European green bonds, and (3) a Delegated Act on the information to be disclosed by financial and non-financial companies based on the EU Taxonomy Regulation.

The new strategy identifies four main areas for action for the financial system to fully support the transition to a sustainable economy:

- Financing the transition: tools and policies to finance transition plans and reach climate and other environmental goals,
- Inclusiveness: access to sustainable finance for individuals and small and medium companies,
- Financial sector resilience and contribution: support the financial sector to contribute to meeting the EU's Green Deal targets, becoming resilient, and combat greenwashing.

Whilst the sector has not been included into the criteria document for climate change mitigation and adaptation it will be indirectly concerned by the sustainability criteria laid-out for its customer industries. At the same time the EU is seeking global collaboration in order to achieve a global sustainable finance agenda.

Documenting the sustainability along the life cycle – PCRs for EPDs for graphite products

In the context of the EU's efforts to ensure sustainable supply of raw materials into its products it has proposed a change in the EU's Battery Regulation but is also considering increasing the reporting requirements on sustainability in other pieces of legislation, such as the Sustainable Products Initiative which was discussed in 2021. For all of these there is a need to harmonized calculations and reporting which is achieved via so-called Environmental Products Declarations. These are based on rules books (PCRs) how to calculate life cycle analysis and impact assessments. The ECGA committed towards the end of 2021 to develop together with MINVIRO in 2022 PCRs for a number of graphite products. An expert task force was set up and a formal consultative committee was established.

ECGA's Cooperation with the Responsible Business Alliance on graphite

The Responsible Business Alliance (RBA) is the world's largest industry coalition dedicated to corporate social responsibility in global supply chains. RMI is supporting the development of a new online platform to help companies understand the composition of their products and complexity of their supply chain and serves as a guide for prioritizing responsible sourcing and due diligence efforts. The platform is called "Material Insights" and provides open access to information about materials that are sourced worldwide for commercial supply chains. Launched in 2021, this range of tools and resources allows companies to make better informed decisions that help create environmentally and socially responsible supply chains that are economically resilient too. ECGA provided input to the platform by reviewing the Graphite profile document which will be included in the platform.

Study on responsible sourcing of materials in the automotive and electronic industries

ECGA provided input to Drive Sustainability study examining responsible sourcing of materials in the automotive and electronics industries. Drive Sustainability aims to develop a systematic and deeper understanding of raw materials sourcing and related ESG risks as part of their collaborative effort to enhance sustainability in the automotive supply chain (for more information see www.drivesustainability.org). The study assesses the importance of 37 materials to automotive and electronic industries and evaluates environmental, social and governance risks for those materials at industry levels.

A contribution to social and environmental sustainability in practice – the sector's Environment, Health and Safety Performance

The Zero-Pollution Action Plan

The European Green Deal announced that to protect Europe's citizens and ecosystems, the EU needs to move towards a zero-pollution ambition, and better prevent and remedy pollution from air, water, soil, and consumer products. To address these interlinked challenges, in 2021 the Commission adopted the Zero Pollution Action Plan.

Having been permitted according to the IED's Non-Ferrous Metals BREF in most Member States, carbon and graphite companies have continuously been striving for the reduction of emissions. Hence, in 2021 ECGA responded in the public consultation on the EU Action Plan "Towards a Zero Pollution Ambition for air, water and soil" as well as the separate consultations on the revision of the Ambient Air Directive and the newly emerging Soil Directive.

IED-EPRTR-Revision

According to the EU's Circular Economy Action Plan, the Commission is expected to present a proposal revising the IED Directive. In 2021 various consultation took place in which ECGA participated. The revision would be part of the Commission's action to improve circularity in the industrial sectors and would address changes in the methodology of establishing the so-called BREF notes and thus reducing the industrial input into this process, including Carbon dioxide into the emissions to be considered in the BAT notes, as well as establishing mechanisms by which the emissions limit values of the identified Best Available Technologies can be driven further towards zero. This would of course also concern any revision of the BREF note on the non-ferrous metals industry which traditionally covered a part of the synthetic graphite production. The ECGA supported comments made by other sectors, such as the non-ferrous metals industry.

But the Commission also intends to include the extractive industry, previously not covered by the EU IED, in the scope of this directive which of course would then also cover existing and future graphite mining in the EU. The ECGA submitted a position paper on the fact that currently there are only 2 operating mines in the EU and that within the scope or not, it would not be possible to establish at this point in time a BAT based on 2 installations.

Revision of the EU Waste shipments regulation

The EC's objectives are to prevent waste exports that would lead to environmental harm in other parts of the world and to achieve a higher sustainability in waste treatment and recycling in general. As part of this the European Commission was proposing a strong regime governing the export of waste outside the EU, based on the following measures:

- Restricting the export of all waste to non-OECD countries.
- The EU exports of 'green-listed' waste should be authorized only for those non-OECD countries that explicitly notify the EU of their willingness to receive EU waste exports and demonstrate their ability to treat this waste in an environmentally sustainable manner. These third countries will be included in a list of countries to which export of green-listed waste would be authorized. The list will be drawn up by the Commission and export will not be possible for countries and waste not included therein.
- Step up the monitoring of EU waste exported to OECD countries.
- Require EU exporting companies to show that their exports are sustainable.
- Establish clear criteria to prevent waste from being falsely exported as 'used goods'.

The result of this is likely to be a limitation of exports and an increase in recycling within the EU, for example of steel scraps which have been exported in the past and this in turn will increase the need for electric arc furnaces and graphite electrodes in the EU.

Sustainable Chemicals Policy

REACH and CLP revision

As part of the European Green Deal's "zero-pollution ambition for a toxic free environment", the Chemicals Strategy for Sustainability adopted in 2020 aims at protecting human health and the environment against hazardous chemicals and foster the development of safe alternatives through a mix of legislative and non-legislative initiatives. In its Communication on the Chemicals Strategy for Sustainability ("Protect consumers, vulnerable groups and workers from the most harmful chemicals"), the Commission commits to defining "criteria for essential uses to ensure that the most harmful chemicals are only allowed if their use is necessary for health, safety or is critical for the functioning of society and if there are no alternatives that are acceptable from the standpoint of environment and health". Those "criteria for essential uses" would guide the application of essential uses in all relevant EU legislation for both generic and specific risk assessments, in line with the priorities of the Chemicals Strategy for Sustainability as regards protection against the most harmful chemicals.

ECGA from the very beginning of REACH has been looking after graphite family of substances and has managed its dossiers and assisted companies in their compliance with the legislative requirements. Graphite has not been classified as hazardous but one of its raw materials and precursors High temperature coal tar pitch has always been of concern since it is classified. Since the substance has been recognised as an "intermediate" use under REACH, no further restrictions and authorisations of this substance for the use in the graphite industry has been needed; There is great concern that the additional introduction of the concept of "essential use" could change this and this could have major impact on the European operations and at the same time favour imports of graphite products form other parts of the world where no such restrictions are in place or even planned.

The ECGA is closely cooperating with the European non-ferrous metals industry, the industrial REACH Alliance and lately also the Alliance for the Sustainable Management of Chemical Risk (ASMoR) which has been formed to particularly deal with this element of the planned REACH revision. Independently and jointly the ECGA and its members are actively participating in any consultation available on this topic.

REACH dossier management

ECGA – as the interface between the European carbon and graphite industry and the European authorities as well as international bodies – provides support related to the fulfilling of legal obligations under the REACH Regulation.

In 2021 ECGA continued providing the Secretariat services for several consortia: Synthetic Graphite (CAS 7782-42-5, EC 231-955-3), Sulphuric Acid Treated (SAT) Graphite (CAS 12777-87-6, EC 235-819-4), Acid Treated Graphite (CAS 90387-90-9, EC 291-367-8), Non-Graphitic Carbon Fiber (CAS n.a., EC 701-026-1). Several Letters of Access were sold during 2021, as well as study summaries for other REACH regulations.

Following ECHA's request to perform an experimental study on the toxicological endpoint for Synthetic Graphite REACH dossier, ECGA has coordinated:

- the appointment of the consultant responsible for the update the REACH dossier;
- the laboratory choice based on few offers gathered;
- the preparation of tasks and timeline of the actions to be performed to submit the REACH within the indicated deadline (September 2022).

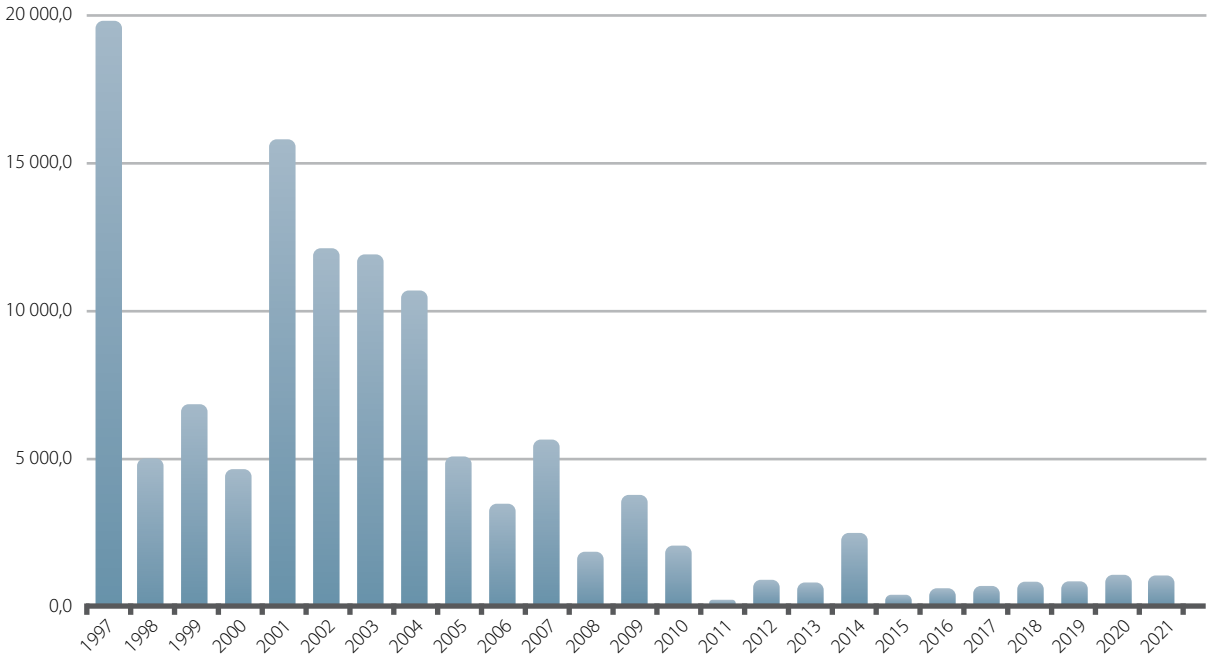
During the SAT Graphite consortium meeting in June 2021, it was decided to perform the REACH dossier update incl. the preparation of cost-sharing calculation and revision of LoA pricing. ECGA appointed the consultant responsible for performing that task which is expected be finalized in the first quarter of 2022.

EU Strategic Framework on Health and Safety at Work

The European carbon and graphite sector is strongly committed to continuously improving its workplaces and due to very meticulous measures has been able to continue uninterrupted even under the pandemic conditions in 2020 and 2021.

Safety Performance Index for ECGA members

(the overall performance independently of the number of employees)



The ECGA supports a strong EU framework for OSH that strives for consistent improvements of the health and safety of workers across Europe and it therefore recommends that the expertise of the sector is recognized in managing also the risks of hazardous substances, such as coal tar pitch, rather than banning substances just based on their hazard assessment. It is therefore necessary that in the revision of the REACH revision, in particular with regard to the restrictions and authorization mechanisms the Commission should clarify the interface between REACH and OSH legislation in order not to strengthen a functioning EU legislative regime and give it the credit it deserves. The EU's OSH legislation is indeed essential to the goal of protecting workers while maintaining the competitiveness of EU's industries.

ECGA Members

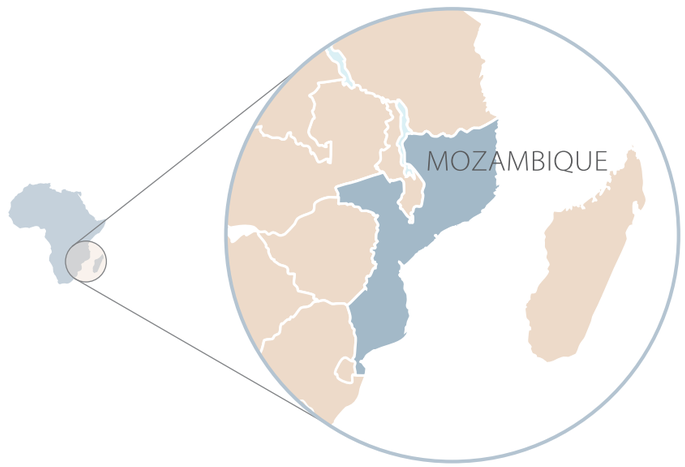
(EU headquarters or main offices)

ECGA members:

- ASBURY CARBONS
- ELKEM ASA CARBON
- ELSID CARBON ENGINEERING S.A.
- GRAFTECH INTERNATIONAL Ltd.
- GRAPHITE COVA GMBH
- GRAPHIT KROPFMUHL GMBH
- IMERYS GRAPHITE & CARBON SWITZERLAND LTD.
- MERSEN CORPORATE SERVICES SAS
- MORGAN ADVANCED MATERIALS
- RHEINFELDEN CARBON GMBH&CO.KG
- SANGRAF ITALY
- SCHUNK KOHLENSTOFFTECHNIK GMBH
- SHOWA DENKO CARBON Holding GmbH
- SUPERIOR GRAPHITE EUROPE LTD
- SGL CARBON GMBH
- TOKAI COBEX GMBH
- TOKAI COBEX SAVOIE
- TOKAI COBEX POLSKA sp. z o. o.
- TOKAI ERFTCARBON GMBH
- VUM a.s.

Associate members:

- BAWTRY CARBON LIMITED
- BGV GROUP MANAGEMENT
- PHILLIPS 66
- SYRAH GLOBAL DMCC



ECGA
European Carbon and Graphite Association

ECGA Secretariat
Dr. Corina Hebestreit, hebestreit@ecga.net
Ms. Mirona Coropciuc, coropciuc@ecga.net
Ms. Katarzyna Palaczanis, palaczanis@ecga.net
Ms. Catherine Conty, graphit@ecga.net

Contact us
ECGA
Avenue de Tervueren 168, boite 11
1150 Brussels – Belgium
Tel : +32 477225303
General Enquiries, graphit@ecga.net
Website: www.ecga.net
EU Transparency Register No 66301488645-70