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EU Raw Materials Act:

Adapting permitting rules to natural and synthetic graphite and fostering Important Projects of Common European Interest (IPCEI)

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In its COMMUNICATION on the EU external energy engagement in a changing world (SWD(2022) 152) the Commission declared its intention to

- strengthen its energy security, resilience and open strategic autonomy by diversifying the EU's energy supply and boosting energy savings and efficiency;
- accelerate the global green and just energy transition to ensure sustainable, secure and affordable energy for the EU and the world.

It should be noted that such recommendations are equally relevant and adequate for the access to the raw materials required for those renewable technologies, in particular when it comes to extracting natural graphite or enlarging synthetic graphite production capacities:

According to the JRC's Critical Raw Materials in Technologies and Sectors foresight study, the demand for critical raw materials needed in the energy generation and storage sector as well as in the mobility sector for example will accelerate considerably by 2050. The EU, depending on natural and synthetic graphite (both are needed) to a large extent on imports, needs to improve its resilience by fostering EU production. Therefore, natural graphite extraction and processing as well as synthetic graphite production need to be recognised as IPCEIs.

Ensuring access to a critical and strategic material: GRAPHITE

In its Guidance to Member States on good practices to accelerate permitting processes for renewable energy projects the Commission rightly has identified a number of measures that can speed up the access to renewable energies.

- *reducing the length and complexity of administrative authorisation procedures,*
- *sufficient staffing and skilling of permit-granting entities and authorities responsible for environmental assessments,*

- *administrative procedures for permit granting shall not exceed two years, including all relevant authorisation, certification and licensing procedures by competent authorities.*
- *The duration of court proceedings need to be shortened. Member States can organise their national jurisdictional system in such a way as to ensure faster processing of litigation cases, such as one-instance procedures for certain projects of national importance.*
- *Member States should allow prioritisation and thereby acceleration of permit-granting procedures, such as setting categories of strategic projects.*
- *Accelerated permit-granting can also be achieved by allow for multiple applications to be made in parallel instead of in a sequential manner, including for related grid projects.*
- *Finally, the assessments by the permit-granting authorities in the framework of environmental procedures can be accelerated by setting specific deadlines.*
- *Member States should designate a single contact point (“one-stop-shop”) for permit granting.*
- *Concerning environmental permits, Member States could increase legal certainty and transparency by systematically applying the Strategic Environmental Assessment (SEA)58 Directive to planning documents, relevant for renewable projects permitting.*

Conclusion

We concur with the Commission’s statement that *the concept of overriding public interest and the need to weigh up the advantages for sustainable development against potential negative impact on the environment should specifically apply to those critical raw materials that are required for the energy transition.* And therefore request the Commission to include the above considerations into its planned Raw Materials Act.

RENEWABLES and Graphite

Solar Energy

High-purity graphite, carbon fibres reinforced materials and felts are used for the production process of multi- and monocrystalline silicon for solar panels. Graphite is essential because it is resistant to extreme heat it is perfect for the crucibles and moulds used to cast the silicon in solar panels, and in use it works as heat shield and thermal insulation. Without high-purity graphite there would be no manufacturing equipment for multi- and monocrystalline silicon and hence no solar panels.

Today most solar panels are being produced in China which causes Europe's dependency on China in this market segment. If solar panels are supposed to be produced to a much larger degree in Europe again, as some policy makers have already announced, then not only the silicon but also the isostatic graphite should be produced to much larger quantities in Europe.

New applications such as the new EV's solar roofs will for example require more solar panels and hence more graphite tooling. The largest consumer of lithium-ion batteries will come in the electric vehicles and home batteries sectors, while solar panel roofs, powered with battery packs, require even more graphite. If battery powered electrical vehicles and homes will be the future the projected increase in demand for graphite will continue to grow even more.

In order to have sufficient graphite available, permitting for European synthetic graphite production plants and for natural graphite mines needs to be streamlined and accelerated, as well as financial support for the energy intensive graphite production.

Wind energy

In many wind turbines, carbon fibre-based composites are used due to their high strength and stiffness combined with their low density. New innovative specialty products of carbon and graphite felts are facilitating a generation of new rotor blades that set new standards for performance efficiency, service life, and rotor dynamics and hence energy efficiency.

Efficiency in energy transmission

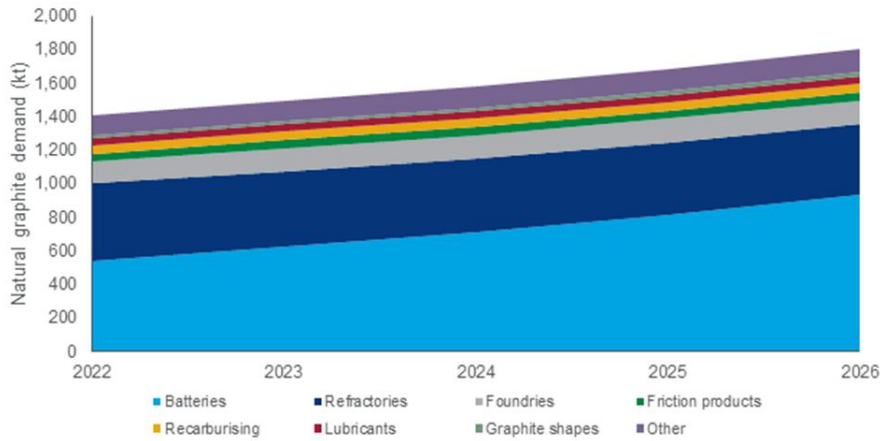
New types of for carbon brushes are important functional components in wind turbine generators and increase efficiency in energy transmission.

Energy storage

Since one of the key features of renewables is that they are not necessarily continuously available energy storage becomes an important feature, such as for example in domestic batteries and batteries of electric vehicles. With an increasing number of houses with solar panel installations and with more than 30 million electric vehicles expected in the European Union by 2030 smart storage and charging functionalities need to be ensured.

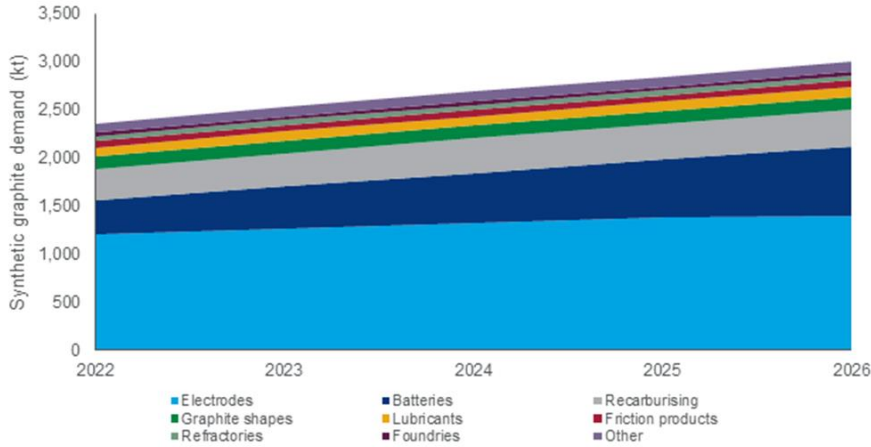
Synthetic graphite as anode material in lithium-ion batteries, battery felts in stationary energy storage systems, special graphite solutions in lead-acid-batteries as well as the gas diffusion layer in fuel cells contribute to efficiency and performance of energy storage systems. And in most cases both natural and synthetic graphite are always used together to achieve optimum performance. Graphite will continue to account for more than 90% of all battery anode material by 2032.

Natural graphite



Source: Wood Mackenzie

Synthetic graphite



Source: Wood Mackenzie