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## Natural and synthetic graphite - projects of public interest

In its JOINT COMMUNICATION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS on the EU external energy engagement in a changing world ({SWD(2022) 152} the Commission declares its intention to

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- 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.

According to the JRC's Critical Raw Materials in Technologies and Sectors foresight study, the demand for critical raw materials needed in the low-carbon energy sector and the demand and potentially the costs will increase significantly by 2050. The EU depends in this sector primarily on a variety of critical raw materials including natural graphite, which is produced domestically in small quantities, and which production can be ramped up to satisfy future demand.

Therefore, natural graphite extraction and processing as well as synthetic graphite production need to be recognised as PCIs.

### 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.

## Ensuring access to a critical and strategic material: GRAPHITE

Following on from its argumentation on ensuring better access to critical materials to achieve the EU's climate change and energy security goals it is important not to prolong existing and avoid new dependencies in the future. As the demand for fossil fuels decreases, increased demand for those materials required for the energy transition will lead to new supply challenges if not addressed appropriately.

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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.

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:

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

Additionally, barriers related to the lack of support to certain projects by the public or relevant local stakeholders also exist in many Member States. The following good practices and recommendations would be transferable:

- *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 are outside the scope of the time limit, but Member States can take measures to reduce prolonged procedures due to challenges in courts. While the right of access to justice has to be ensured, 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, setting up deadlines for certain steps of the litigation procedure depending on national circumstances to avoid unnecessary prolongation of appeal procedures, or introducing provisions aimed at limiting abusive litigation.*
- *In addition to streamlining the framework related to court proceedings, some Member States have already also introduced other measures that allow prioritisation and thereby acceleration*

*of permit-granting procedures, such as setting categories of strategic projects. Some projects of national importance may be adopted via a legislative procedure by a specific act in accordance with Article 2(5) of the Environmental Impact Assessment (EIA) Directive. This allows Member States to exempt that project from the provisions relating to public consultation.*

- *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. When an environmental assessment is required, Member States should cap the length of various steps of the Environmental Impact Assessment procedure by introducing binding maximum timeframes, in particular for:*
  - *the issuance of a scoping opinion by the competent authority – not more than one month*
  - *the conclusion of the environmental impact assessment and issuance of reasoned conclusion – not more than three months with a possibility for extension for additional three months,*
  - *the conclusion of public consultations on the environmental impact assessment report –not more than two months,*
  - *the issuance of development consent – not more than six months.*
- *Member States to designate a single contact point (“one-stop-shop”) for permit granting: EU law can lead to the requirement of several environmental assessments for a single project. Specific additional requirements in permit processes are often introduced at the national level (e.g. related to property issues, land-use planning or cultural heritage). Multiple legal requirements and parallel assessments for a single project can lead to administrative and implementation costs and delays, discrepancies and administrative uncertainty in their application. Article 2 of the EIA Directive explicitly provides that EIA may be integrated with other procedures. This offers a significant potential for simplifying environmental permitting when several environmental assessments stemming from a number of Directives (the EIA Directive, the SEA Directive, the Habitats and Birds Directives, the Industrial Emissions Directives, the Water Framework Directives, the Seveso Directives, etc.) are required and several authorities are involved. Under the "one-stop shop" approach, the above assessments and their approval can be prepared separately but be coordinated; they can also be joined together as part of a single process.*
- *Concerning environmental permits, Member States could increase legal certainty and transparency by systematically applying the Strategic Environmental Assessment (SEA)<sup>58</sup> Directive to planning*

*documents, relevant for renewable projects permitting. The SEA allows to plan strategically the development of renewable energy projects with more certainty, while factoring in the environmental obligations. Where applicable, the national authorities and project developers can rely on the outcomes of the SEA and take these into account in the subsequent project development, in particular for identifying reasonable alternatives in the context of the nature conservation and preservation objectives.*

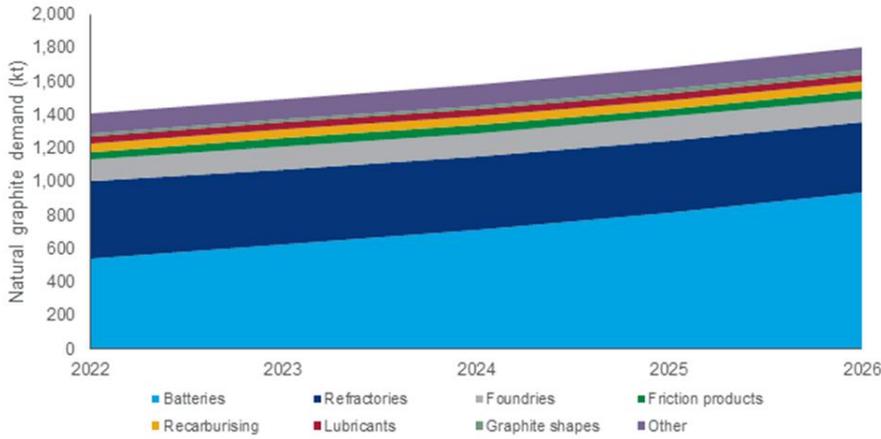
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## **Conclusion**

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.

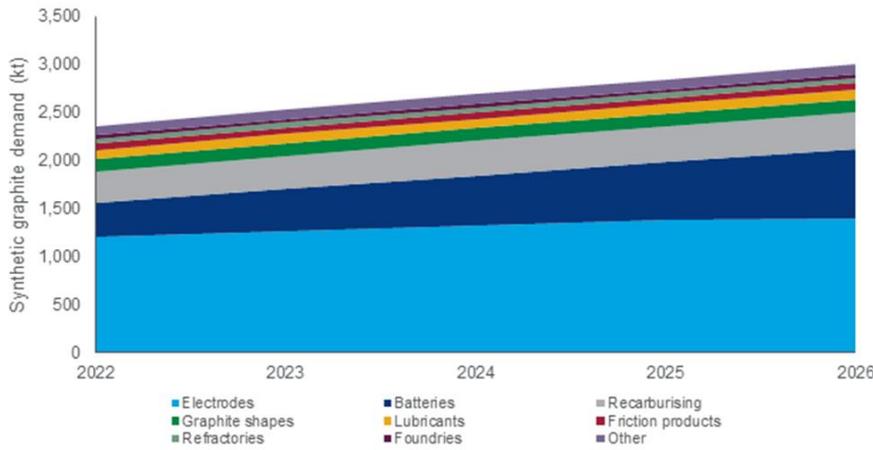
**Annex:**

**Natural graphite**



Source: Wood Mackenzie

**Synthetic graphite**



Source: Wood Mackenzie