



France Strengthens Efforts to Increase Raw Materials Security

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Securing and diversifying the supply of critical raw materials (CRM) is one of France's main industrial challenges. CRM are widely used in the economy, including in the energy transformation and digitalisation, as well as in the defence, aviation, and space sectors. The demand for CRM will increase dynamically in the coming years. Accelerating the pace of supply diversification and increasing the number of mining, refining, and recycling projects will be key to implementing ambitious plans to decarbonise and reindustrialise the French economy.

Pursuant to the European Commission's draft regulation on critical and strategic raw materials for the EU economy (Critical Raw Materials Act), the EC listed 34 critical raw materials of great economic importance and exposed to supply disruptions due to, among others, their concentration in supply from several third countries. Among them, 17 were considered strategic, that is, used primarily in energy infrastructure, for defence and space needs, and for the development of new technologies (these materials include gallium, germanium, lithium, nickel, and rare earth metals). The demand for CRM will increase exponentially in the coming years. The International Energy Agency estimates that in order to achieve the goals of the Paris Agreement, the demand for them will increase on average four times by 2040 (some much more, including lithium by about 40 times, and graphite, cobalt and nickel by about 20-25 times).

Given the risk of shortages, France is making its own efforts to increase its raw materials security. In addition to the diversification of supplies, the government aims to look for mining opportunities in its own territory, develop new technologies for reusing raw materials and increase support for foreign investments of its enterprises.

Internal Circumstances. The need for accelerating government action is influenced by the high demand from industry and the defence sector related to government plans for reindustrialization, the ecological transformation, and military modernization, as well as by the rising import prices,

which reduce the competitiveness of the French economy. In 2021, the government commissioned the preparation of a report on securing the supply of raw materials in order to identify existing industrial and technological weaknesses and determine priority directions of action on this basis. The report submitted in January 2022 confirmed the economy's almost complete dependence on the import of CRM. Recommendations for further courses of action include the creation of a public-private investment fund, increasing financing for innovation, strengthening inter-ministerial project management, as well as resuming mining activities in France.

France has rich mineral resources with wide industrial applications, such as germanium, copper, lithium, molybdenum, bauxite, tungsten, antimony, gold, and lead. However, its raw material potential is largely underestimated. This is due to the fact that the last comprehensive studies on the occurrence of natural raw materials date back to the 1970s and 1980s. Among the catalogue of critical raw materials, domestic lithium mining may play an important role. Lithium, among others, is necessary for the production of electric car batteries. It is estimated that the demand for lithium will increase 18 times by 2030, and 60 times by 2050. According to research conducted in 2018 by the French Bureau of Geological and Mineral Research (BRGM), lithium deposits are present in the rocks of the Armorican Massif in north-western France,

PISM BULLETIN

the Massif Central, and in the brines of the Rhine basin in Alsace. France is also interested in using the mining potential of the seabed in international waters and within its own exclusive economic zone, the second largest in the world, resulting from its possession of overseas territories.

Government Actions. One of the pillars of the government's response to high market demand is to be the "France 2030" investment plan, which includes, among others, an allocation of €1 billion for projects relating to the production and recycling of raw materials in France. From the first tranche of approximately €100 million, five industrial projects are to be implemented regarding the production of lithium and recycling of critical metals contained in lithium-ion batteries (nickel, cobalt, lithium). This will make it possible to secure a low-carbon supply chain for the four battery gigafactories planned in the Hauts-de-France region. In October last year, the Imerys concern announced the commencement of a lithium exploitation project in Allier. From 2028, production is to cover the demand for 700,000 batteries for electric cars. Additionally, the first lithium refinery in France will be launched in Lauterbourg. The development of the recycling sector is to be ensured by, among others, the construction of a recycling plant by the Eramet company. Among the planned investments, the projects for the extraction of critical metals from electronic waste developed by Sanou Koura in Donchéry and WEEECycling in Tourville les Ifs are also noteworthy.

The authorities also deemed it necessary to inventory the resources present on French territory. BGRM will be responsible for this process. Pilot activities have already been launched, but it is estimated that the inventory itself in the most important regions will take up to six years and its total cost will be about €100 million.

The French government emphasises the important role of the state in supporting industrial resilience, introducing changes at the institutional level and closer inter-ministerial coordination. As part of these activities, the Observatory of Mineral Resources for Industrial Sectors (OFREMI) was established, supported by BRGM and co-piloted with the Strategic Committee for Mining and Metallurgy. OFREMI is intended to monitor the evolution of value chains and price structures, as well as conduct criticality and resilience analyses. In August this year, French Minister of Economy Bruno Le Maire announced the extension of foreign investment control to the mining sector, in particular the extraction and processing of critical raw materials. France also wants to increase EU targets for the processing of raw materials (from 40% to 50% of annual consumption planned by 2030) and recycling (from 15% to 20%).

France is also seeking greater international cooperation. An example is the signing of contracts by French companies in

the critical minerals sector on the occasion of President Macron's November visit to Kazakhstan, as well as the development of new projects with Mongolia. During the state visit of its president, Ukhnaagiin Khürelsükh, to France in October this year, the two sides signed an agreement on uranium mining in southwestern Mongolia. The French company Orano is to exploit the Zuuvch-Ovoo mine and participate in the search for lithium using satellite technology. In September this year, the French government signed two cooperation agreements on critical minerals with Australia and Canada. Cooperation between the parties is expected to include the development of critical minerals sectors, including mining, processing and recycling projects, and the promotion of industrial and academic cooperation in research and development.

Conclusions. The French economy is characterised by a strong dependence on the import of CRM resulting from, among others, the transfer of mining and processing activities to countries with low operating costs, such as China. It is impossible to make France completely independent in the supply of CRM, but the negative effects of relying on imports can be mitigated thanks to, among others, the development of its own mining capabilities. A key challenge will be to overcome public resistance in France to traditional mining projects. Public resistance stems from the belief that mining is an industry of the past and that there is a risk of pollution and threats to fauna and flora. Government actions emphasising the benefits of tax revenues, economic diversification, creation of new jobs, and the intention to use new technologies that significantly reduce potential environmental costs will be important.

At the EU level, more coordinated policy for raw materials security and industry support will be necessary. France and other EU countries may consider increasing pressure to control related technology sectors. This includes, for example, the creation of strategic stocks, the development of recycling, the relocation of the processing industry, or the acquisition of shares in mines. The challenge for France will be to restore its competitive advantage in the metal refining and processing sector. The EU should strive to jointly identify industry needs in terms of the medium- and long-term demand for CRM. It will be appropriate to map the risks and threats, both civilian and military, in all industrial and technological sectors related to CRM. The actions taken by France, as well as practical experience in the implementation of its raw materials policy, may be useful for Poland and encourage it to put greater emphasis, as part of the implementation of the State Raw Materials Policy adopted in 2022, on the development of public-private partnerships and recycling and storage of raw materials projects.