

Security of supply of construction minerals

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Summary of audit results

If Estonia fulfilled its commitments to the European Union to complete the construction of large infrastructure projects – four-lane highways included in the trans-European road network TEN-T¹ and the Rail Baltica railway line – by 2030, the local construction minerals to be extracted from the existing quarries² would not be enough to complete construction based on current studies and analyses. To implement infrastructure projects that are important for the Estonian state and society in terms of economy and security, it is necessary to open new quarries for the extraction of construction minerals in the near future, and this requires much more extensive and effective cooperation from the Ministry of Economic Affairs and Communications, the Ministry of the Environment, and local governments.

For your information,

According to the current forecasts of the Ministry of Economic Affairs and Communications, the greatest need for construction minerals will be concentrated in the years 2026–2027 when the demand for construction minerals will increase by more than 2.3 million m³ per year compared to 2025, and the construction of the Rail Baltica railway line alone will increase the need for construction minerals from 0.1 million m³ in 2022 to 2.4–2.8 million m³ per year in the period 2023–2028.

Although the Ministry of Economic Affairs and Communications (MEAC) is aware that in the case of the construction of large infrastructure objects, the need for construction minerals would increase rapidly in the coming years compared to the extraction volumes of previous years, it has not sufficiently prepared for this situation. As such, the MEAC has not developed alternative solutions for substituting construction minerals if local quarries should be unable to cover the needs for some reason or should their opening be delayed, nor has it evaluated the possible effects of such a development.

For example, high-quality construction limestone suitable for road construction is mainly found only in the limestone deposits located in Harju County, the currently extracted supply of which will last until 2026 at the most. The sand and gravel supplies in Pärnu and Rapla counties are also at a critical level – in the event of the construction of large infrastructure projects, especially the Rail Baltica railway line, the extractable supplies there would also be exhausted before 2030.

Although there are various ways to partially substitute for the shortage of local construction minerals – alternative materials can be used instead to

¹In Estonia, the main network of TEN-T roads includes the Tallinn–Pärnu–Ikla and the Tallinn–Tartu–Võru–Luhamaa highways.

²Especially high-quality limestone and dolomite, construction sand and construction gravel in Harju, Pärnu and Rapla counties.

a certain extent and these minerals can also be imported into Estonia – it is also necessary to realise that the import of minerals would sharply increase the cost of objects compared to the use of local minerals. Therefore, it is important to first pay attention to the optimal use of local extraction opportunities.

For your information,

According to the Land Board, there were 623 valid extraction permits in Estonia as of 30 August 2022. In the case of 175 of these permits, either no mineral resources were extracted at all in the last five years or the amount of extracted mineral resources was very small (5-year average up to 10 m³).

According to the Environmental Board, 142 new extraction permits have been issued between 2018 and 2021, while at the same time 15 quarries have been recognised as restored: eight gravel quarries, three limestone quarries, two sand quarries, one oil shale quarry, and one earth material quarry (sand and gravel).

If the construction of four-lane highways and Rail Baltica should progress according to the agreed deadlines and if, at the same time, new local quarries cannot be put into use in sufficient quantity and quickly enough, then, according to the MEAC, the construction cost of these infrastructure projects may increase by up to 40% if the construction mineral in shortage is imported. Although, according to the MEAC, the price of granite imported from Finland and Sweden may be up to 3.5 times higher than the price of high-quality construction limestone extracted in Estonia due to the Russian attack on Ukraine because of the prices of the mineral itself, the prices of the fuel needed for transportation, and changes in the logistics chain, the MEAC has not analysed in detail what the actual financial impact on high prices of infrastructure objects accompanying the use of alternative construction materials or imported construction minerals might be.

The need to extract construction minerals can be reduced to a certain extent by introducing alternative construction materials and new technical solutions. However, the MEAC does not know to what extent security of supply can be increased by using alternatives (e.g., substituting certain construction minerals with other materials, such as mining waste and construction and demolition waste) and what the construction prices of large infrastructure projects would be in this case.

It should also be noted that most of Estonia's supply of construction minerals has been registered on the basis of the now-expired survey procedure and the resulting quality requirements, which is why the possibilities of using the supplies are not exactly known, and the assessment of security of supply is therefore difficult. Some of the mineral resources that were registered as active consumption supplies back in the day may not actually be extractable (for nature conservation reasons etc.) and therefore the supplies suitable for extraction may be registered as larger than they really are.

The Environmental Board relies on the quantities of construction minerals extracted in the past upon assessing security of supply during the process of processing extraction permits and only asks for the opinion of the MEAC regarding the state's interest if it expects a potential sudden change in the future demand for construction minerals in some regions. Also, the assessment of security of supply is based on the transport distance of the construction mineral, which is up to 50 km, so supplies located further than this and their impact on ensuring security of supply are not taken into account.

The current problems in opening new quarries also point to the need for the Ministry of the Environment to develop a systematic approach to miners, so that open quarries and quarries to be opened can be exhausted and quickly restored within the optimal and agreed time. Its purpose is that there should be as few quarry-related disturbances as possible and that they should be as short-term as possible and with a clear time perspective for the local government and local residents. To reduce

disturbances, good practice has also been used in Estonia where, for example, limiting the working hours of the quarry, regular cleaning and washing of the quarry roads, and dust monitoring have been agreed upon.

It is also necessary to find a way to find the most reasonable solutions during the consultations for extraction permit prior to the opening of the quarry by listening to substantive and constructive proposals on site so that the interests are balanced. There are various measures for this, including paying compensation to those who are most affected by the disturbances, increasing the interest of the local government through the mineral resource extraction charge. This would help to prevent the non-constructive so-called not-in-my-back-yard effect (NIMBY) in the process of opening quarries and the decision-making process of extraction permit.

Main recommendations

Recommendation of the National Audit Office to the Minister of Economic Affairs and Infrastructure:

- Assess in more detail how much the construction costs of Rail Baltica and the main roads of the trans-European road network TEN-T could increase if, instead of local construction materials, alternative construction materials and new technical solutions need to be used or construction materials need to be imported to Estonia.

Response of the Minister of Economic Affairs and Infrastructure:

According to the minister, such an evaluation is being considered, but due to the significant increase in the prices of construction materials and construction, the result cannot be directly compared to previous procurements. Some conclusions can be drawn based on procurements of 2022 but considering the decrease in the amounts prescribed for road maintenance in the State Budget Strategy for 2024–2026, there are not enough construction projects to draw conclusions and generalisations about price increases.

Recommendation of the National Audit Office to the Minister of the Environment:

- Create such an arrangement for the use of mineral resources that would motivate miners to speed up extraction and restoration activities, including taking measures to ensure partial and timely reclamation of quarries to reduce the harmful environmental impact and disturbances caused to the local community and that the state would not have to spend money on the reclamation of quarries, for example, in case of bankruptcy of a mining company.

Response of the Minister of the Environment: The Minister of the Environment agreed with the recommendations. In 2023, the Ministry of the Environment will commence with preparing a plan for the development of a new Earth's Crust Act, where one of the main topics will be the reclamation of extracted areas. In 2021, the Ministry completed an analysis that addressed the best solutions for ensuring the reclamation of extracted areas. The Ministry of the Environment has also discussed with the Environmental Board the practice of asking for reclamation conditions and sought solutions to make it more effective.