



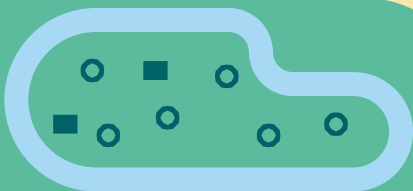
Norwegian Ministry of Trade,
Industry and Fisheries

Strategy

Norwegian Mineral Strategy



We will develop
the world's most
sustainable mineral
industry in Norway



The Norwegian Government's overarching ambition is for Norway to develop the world's most sustainable mineral industry. Norway is well positioned to succeed in this. We have significant mineral resources that can generate value creation, profitable jobs and at the same time make an important contribution to address the global possibilities and challenges the green and digital transitions. The Norwegian Government will facilitate profitable recycling of raw materials, and work closely with the rest of Europe to secure critical value chains.

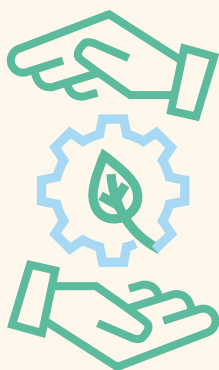
Metals and minerals are needed to succeeding with the green transition shifting from a fossil energy system based on access to coal, oil and gas to a renewable energy system. Access to critical minerals is therefore crucial to many of our policy goals, such as developing renewable power and industry and cutting greenhouse gas emissions. Without good access to critical minerals, the global climate goals will be difficult to meet and the foundation for industry and jobs will become weaker. The global value chains for manufacturing products such as semiconductors, batteries, drones and defence materiel are also important for maintaining Norwegian and allied security and defence capability. Over time, Europe and much of the Western world have given low priority to producing their own critical raw materials, and this has made many value chains vulnerable.

Norway has an active mineral industry, an extensive metallurgical industry and great potential for the further production of critical minerals. Mineral extraction and the production of metals are not only important to achieving green Norwegian and

European value chains, but also to Norway's role as a strategic ally and partner. The Norwegian Government's ambition is for Norway to be a stable long-term supplier of minerals for the green transition.

The Norwegian Government's Roadmap for the Green Industrial Initiative clarifies its ambitions and sets the course for green Norwegian industrial policy. Norway and Norwegian industry are well placed to succeed in the green transition – perhaps even the best in the world – but steps must be taken to accelerate the pace, improve our implementation capacity and enhance systematic cooperation, both nationally and internationally. Access to minerals and metals is crucial to achieving the goals set out in the Roadmap. The mineral industry can make a significant contribution to this end.

Long-term, sustainable management of resources is a fundamental principle underlying the Norwegian Government's policy. Our ambition is to develop the world's most sustainable mineral industry. The Norwegian mineral industry must be a part of



Access to metals and minerals is crucial for implementing the green and digital transition.

the circular economy and reduce the need for disposal sites such as landfills. At the same time, global demand for the metals needed for the green transition is increasing rapidly. Consumption of certain metals will multiply towards 2050, and the demand for minerals cannot be met by material recovery alone. This means that new mining activities will also be needed.

We cannot develop green technologies using raw materials produced without consideration for social, economic and environmental sustainability. Social sustainability is a mainstay of local willingness to facilitate and accept the potential impact of mining on local communities and surroundings. A good relationship with local authorities, landowners, local communities, Sami interests and rights holders is essential for socially sustainable mineral activities and for society's acceptance.

We need new profitable and sustainable production of mineral raw materials, and Norway can play a

greater role to this end. It is individual companies that design the projects, and the most important prerequisite for a sustainable mineral industry is that the companies and the industry as a whole bear significant responsibility. The Norwegian Government's most important responsibilities are to establish good, predictable framework conditions and regulations for the industry, to facilitate efficient processes, contribute to achieving local support and to use and develop the range of available policy instruments to help develop a profitable and sustainable mineral industry.

A handwritten signature in black ink, reading 'Jan Christian Vestre'.

Jan Christian Vestre
Minister of Trade and Industry



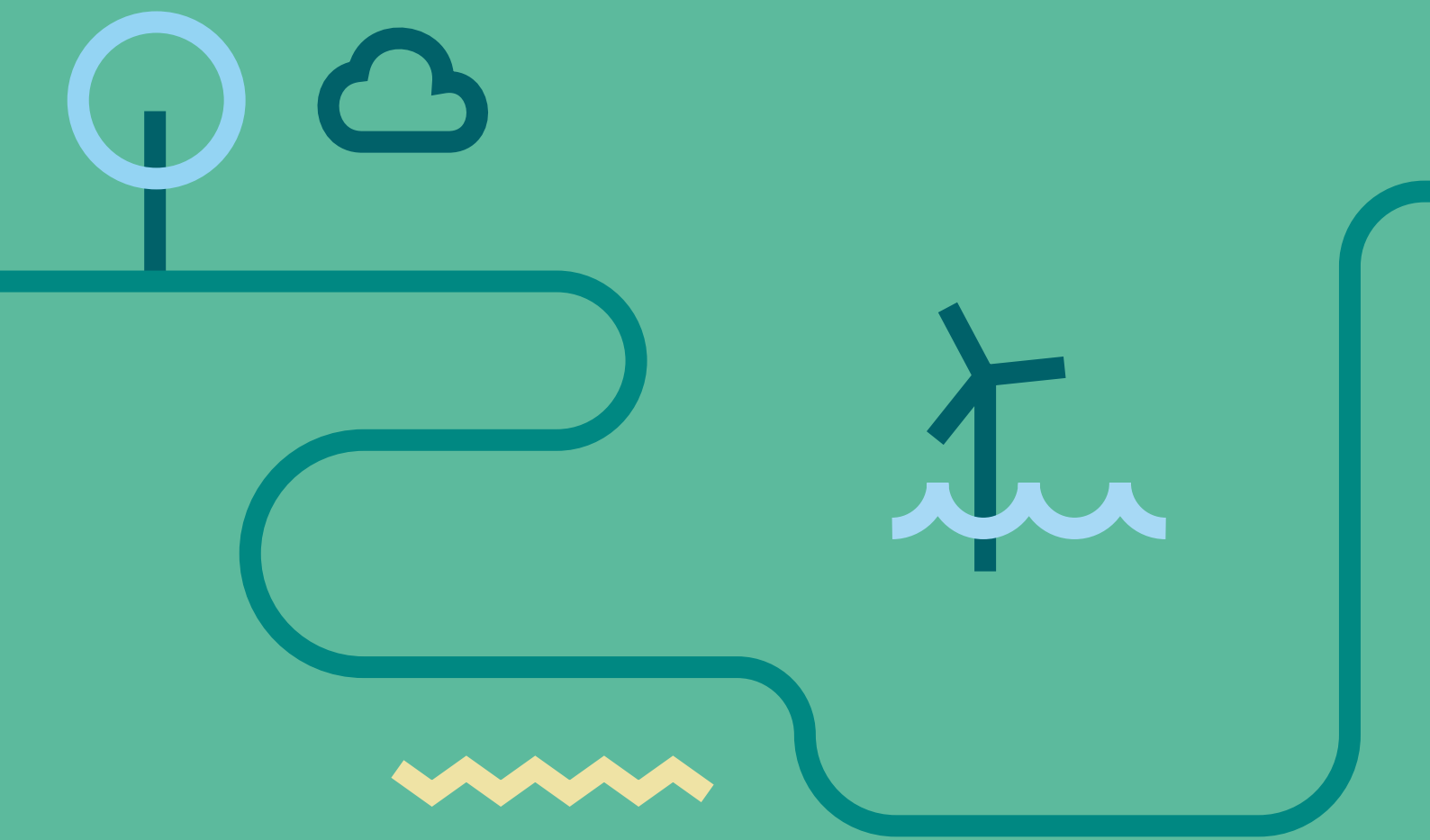
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1

Introduction



Increased access to metals and minerals is a prerequisite for the green transition. Succeeding with the green transition and achieving a zero-emission society require new energy solutions and the development of new technologies. Solutions for increased production of renewable and climate-friendly energy must be in place, the transport sector must be electrified and a digital transition is taking place simultaneously. Large quantities of minerals and metals are required to meet these needs, and global demand for the metals required for the green transition will continue to increase.

Access to metals and minerals in the period leading up to 2050 will determine whether we achieve the global goals we have set for the green transition. The production of wind turbines, solar cells, electric motors, mobile technology and securing capacity for power transmission require access to many different raw materials.

Increased circularity and more recovery and recycling are crucial in the green transition to safeguard society's need for sustainable use of resources. Mineral extraction has consequences for nature, the environment and local communities. For extraction to be sustainable, considerations of human rights, the environment, waste management, climate footprint and local communities must be sufficiently addressed. We therefore need a Norwegian mineral industry that continuously works to improve sustainability by reducing its environmental impact and land use, ensuring maximum resource utilisation, reducing greenhouse gas emissions and points of conflict, and aligning its activities with the respective local communities.

Good framework conditions that facilitate a profitable mineral industry are a prerequisite for mineral extraction in Norway. Profitable businesses with the resources and capital to develop new technology, new markets and new solutions are essential to drive the industry forward. It is individual companies that design the projects, and the most important prerequisite for a sustainable mineral industry is therefore that the industry takes significant responsibility.

The most important thing the Government can do for Norwegian companies is to provide good, general framework conditions that promote predictability and profitability for Norwegian business and industry. Trade and industrial policy will help us achieve the goals of high employment and efficient use of our resources. The general framework conditions for business and industry in Norway are generally good, including for mineral activities.

Mineral activities are also regulated by a number of laws. Mineral extraction can have a major impact on the surrounding area and on nature. Large-scale

extraction operations require thorough surveying and a number of permits during the course of the process from exploration until mineral extraction can commence. The Government can take responsibility for facilitating this process through legislation, streamlined official procedures and by using and developing the range of policy instruments available. Local and regional authorities also have an important role to play and can take responsibility by ensuring long-term resource management and contributing to thorough, inclusive, efficient and predictable land-use planning processes.

In step with the increasing global need for mineral raw materials, global competition for these materials is also increasing, and the minerals are gaining increasing strategic and geopolitical significance. Mineral extraction and the production of mineral raw materials is strategically important to secure the value chains of essential inputs for industry. Increased domestic production is important to ensure access to raw materials and opportunities for green industrial development in Norway and the rest of Europe. As a consequence, increasing attention is being focused on Norwegian mineral extraction and the possibilities for new extraction. Norway is an important supplier of raw materials to Europe and other areas, but is at the same time dependent on imported raw materials, not least for the metallurgical industry. The overall challenges for Norway and the EU

largely coincide, although various input factors may be of particular importance for individual countries, value chains and businesses. Cooperation with other countries on sustainable raw materials supply will also gain greater significance going forward.

Russia's invasion of Ukraine in February 2022 raised awareness of the supply risks associated with critical raw materials, both in Norway and internationally. In order to ensure access to critical raw materials that are necessary for the green transition, Norway is now working to establish a strategic partnership with the EU focusing primarily on sustainable raw materials and batteries. The strategic partnership will form part of the climate, energy and industrial cooperation under the Green Alliance¹ signed by Prime Minister Jonas Gahr Støre and European Commission President Ursula von der Leyen on 24 April 2023. The EU's increased focus on access to critical raw materials has resulted in the European Commission's proposal for a Critical Raw Materials Act (CRMA), which was presented in spring 2023. Along with the Commission's proposal for the Net-Zero Industry Act (NZIA), CRMA is an important part of the Green Deal Industrial Plan for the Net-Zero Age. The EU sees access to critical raw materials as crucial for the green transition, but at the same time acknowledges that the union must increase its strategic autonomy with respect to its own industry and jobs in both the short and long term. One approach

1 Norway and EU establish Green Alliance – regjeringen.no



Metals and minerals are increasingly gaining strategic and geopolitical importance.

is to diversify access to critical raw materials, and the EU has therefore started work to establish bilateral partnerships with a number of raw material-producing countries. Cooperation with Norway will also be essential in this context.

At the global level, we also see partnerships and alliances being established or consolidated to secure the supply of important raw materials. The Minerals Security Partnership (MSP) is a US collaboration initiative launched in 2022 that aims to secure 'friendly' countries' supply of critical raw materials. These supply chains must be characterised by high transparency, respect for human rights, and environmental and social sustainability. The MSP partners are the USA, Canada, Australia, the European Commission, Japan, South Korea and the UK, as well as Norway, Sweden, Finland, France, Italy and Germany. MSP has also established contact with a number of raw material-producing countries outside the partnership. Value chains for critical raw materials often run across national borders. Norway engages in the extraction and refining of critical raw materials and has the potential to both increase mineral extraction and establish new industry. However, an important part of the framework conditions for such operations is good cooperation with partner countries and allies to ensure robust value chains for critical raw materials.

The importance of minerals and metals for the energy, technology and defence industries gives critical raw materials a security and defence

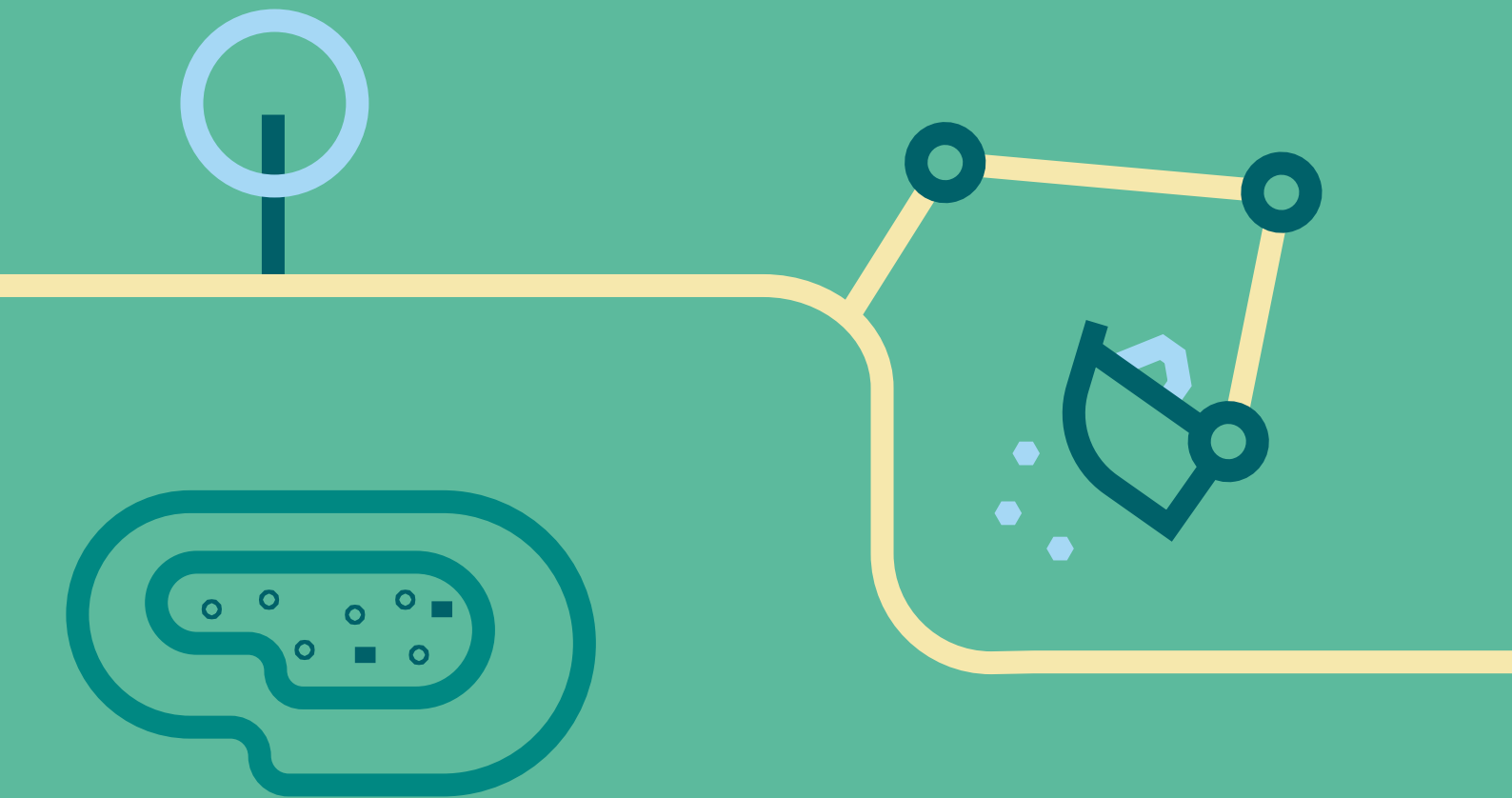
dimension that will increase in step with growing global demand. This development is a potential source of vulnerability for Norway and our allies, but it also creates opportunities for Norway. By further developing the Norwegian mineral industry and industrial production of mineral raw materials, and by taking part in allied collaboration initiatives, Norway can strengthen both its own and its allies' security of supply and help ensure strategic autonomy.

Critical raw materials, especially rare earth metals, are also a key component of modern defence materiel and civil components used for defence purposes. Everything from the F-35 fighter, missiles, communications equipment, robotics, weapons systems, radar equipment and aerospace material is dependent on critical raw materials. This means that security of supply for these raw materials is of crucial importance to Norwegian and Western security in general and to the defence industry in particular. In the EU, Russia's use of gas as a security policy instrument has led to increased awareness of how raw materials can be used to achieve political goals.

In light of this, the fact that large parts of the supply chains for critical raw materials are concentrated in individual countries such as China represents a challenge for security policy. It is therefore essential that Norway, together with its allies, ensures its own supply lines.

2

Summary



The Mineral Strategy shows what steps the Government will take to address challenges relating to access to raw materials for Norway and to facilitate more profitable and sustainable land-based extraction of critical raw materials.

PART 1

Part 1 of the strategy describes the background to the mineral strategy:

- Minerals are of critical importance to society
- Sustainable mineral extraction
- The Norwegian mineral industry
- Norway's potential for future extraction of critical raw materials
- Framework for mineral extraction in Norway

PART 2

Part 2 of the strategy presents the Government's five focus areas:

- Norwegian mineral projects must be implemented faster
- The Norwegian mineral industry must contribute to the circular economy
- The Norwegian mineral industry must become more sustainable
- Norwegian mineral projects need good access to private capital
- Norway will be a stable supplier of raw materials for green value chains

3

Critical raw materials in the green economy



Minerals are of crucial importance to society

Mineral resources form part of a wide range of industrial value chains that are essential for a functioning society, for almost all production and for value creation and jobs. The importance of the mineral industry therefore goes beyond value creation and employment in the industry. Population growth, increased prosperity and urbanisation have led to an increase in the consumption of minerals, and technological development and the transition from fossil to renewable energy sources mean that the types of resources we use are more varied. Today, virtually all elements and a wide range of minerals have a necessary function in our everyday lives.

The green transition involves a shift to low-carbon energy production, alternative energy carriers for transport and investment in energy-related infrastructure. Renewable energy production such as wind and solar power, battery production and energy infrastructure require large quantities of metals and minerals, and global demand for many raw materials

is therefore expected to increase. Where access to oil and influence in areas with large-scale oil production has been strategically important both economically and in terms of security, mineral and particularly metal production will increasingly take over this role. The world is also undergoing a digital transition, where access to various metals is an important input factor. This applies, for example, to the use of drones, 3D printing and printed circuit boards, as well as other electronics for both civilian and military applications.

The need for mineral raw materials will also continue to increase in other sectors (Figure 3.3) and although our current political focus is on the needs dictated by the green transition, iron ore still constitutes more than 93 per cent of overall global metal extraction. In addition to iron ore, aluminium and copper are among the metals we need most of while at the same time being important to the green transition.

Different types of mineral raw materials



Metals

Elements extracted from metalliferous minerals



Industrial minerals

Minerals and rocks with industrial applications



Natural stone

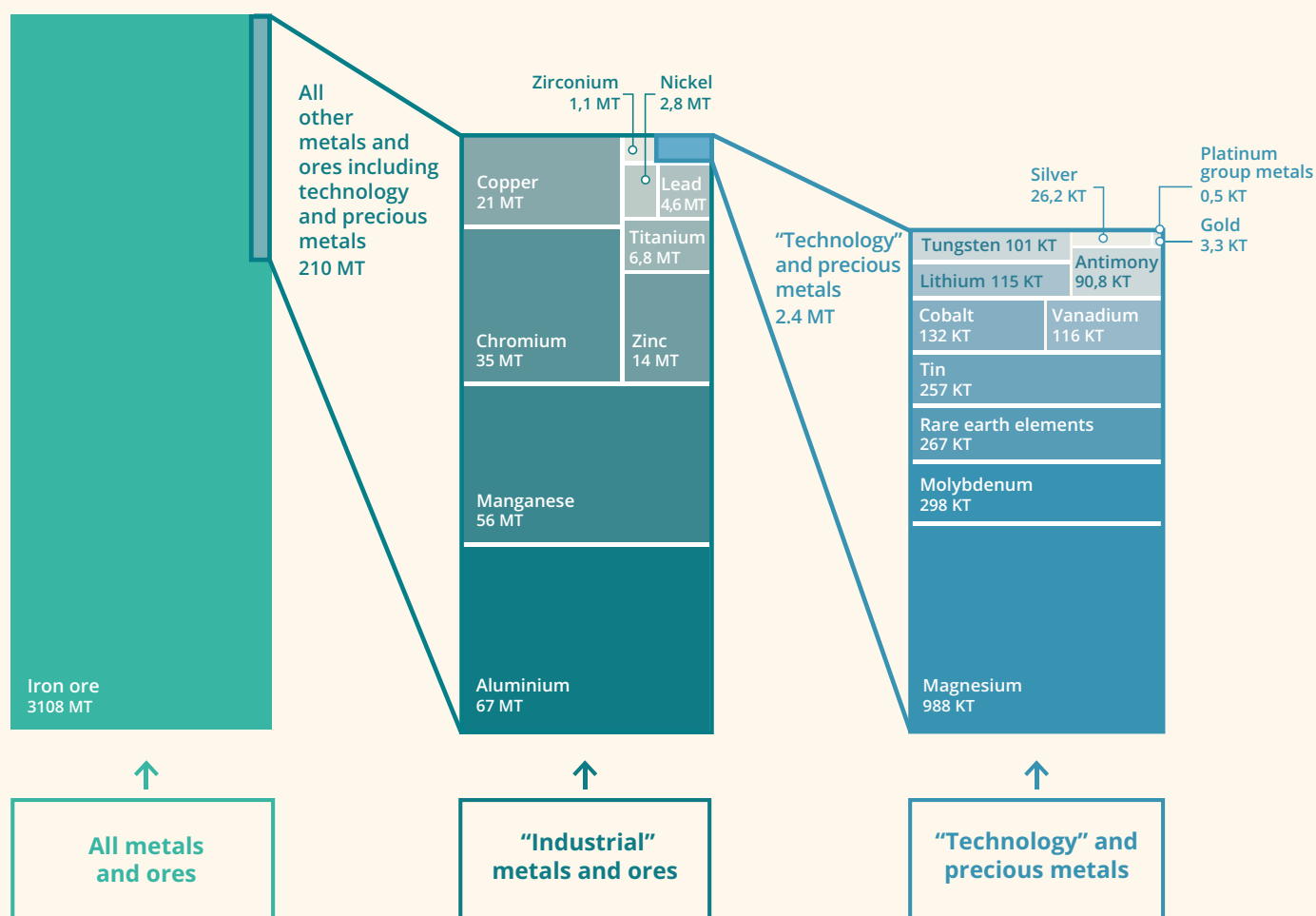
Stone that can be sawn, split or carved for use in buildings, monuments and outdoor areas



Sand, gravel and aggregate

Natural loose materials or crushed stone used mainly for building and construction purposes

Figure 3.1.
Global production of ores and metals



MT – Million tonnes
KT – Thousand tonnes

BGS World Mineral Production 2017–2021. Figure does not include phosphate and potassium.
Reproduced with permission from the British Geological Survey

Many of the metals required in green technologies only comprise a small proportion of total production (see Figure 3.1) and are primarily recovered as by-products from mining for the major metals. The separation and production of these minor technology metals thus often take place at the refining stage of activities in the metallurgical industry.

Demand for minerals and metals is expected to increase in the years ahead. At the same time, new mineral projects take a long time to develop in all countries, and there are limitations as to how much existing projects can be scaled up in the short term. According to the International Energy Agency (IEA), it takes an average of 16.5 years from the discovery of a mineral resource until production commences.²

² The Role of Critical Minerals in Clean Energy Transitions, IEA (2021), p. 12

Batteries often receive the most attention among the green technologies. Several battery technologies are in use, and the market is currently dominated by technologies that require nickel, manganese, cobalt, lithium, aluminium and graphite. Other battery chemistries need phosphorus. Although several types and variants of batteries are under development, most analyses suggest that current technologies will dominate towards 2030. Electric mobility and battery production therefore represent a strong driver for the global resource needed to implement the green transition. The supply of cobalt, lithium and graphite for batteries are assumed to be particularly challenging going forward.

Control over the supply chains for mineral raw materials, such as minerals from mining, processed metals and minerals and other midstream input factors, is currently exploited as a national competitive advantage.

Mineral requirements in renewable energy solutions

Solar power

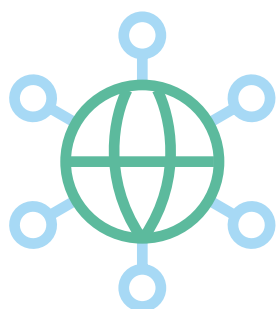
Different solar cell technologies require different materials, but silicon is a very important component for all technologies. The EU covers about 35 per cent of its demand for silicon through imports from Norway.

Wind power

Many modern wind turbines require rare earth elements (REE) that form part of the turbines' permanent magnets. However, several other metals are required to operate a wind turbine, including for power transmission (copper) and corrosion protection (zinc). The addition of niobium and titanium can reinforce and reduce the weight of steel structures.

Selected battery metals and minerals

Nickel	An important battery metal primarily used for stainless steel. By 2030, the IEA expects 1.5 million tonnes to be used in battery manufacturing, primarily for electric vehicles.
Cobalt	Necessary in the most common technologies in use today, although the development in battery technology suggests reduced use of cobalt.
Lithium	Lithium is included in most battery technologies and the need is therefore less affected by the choice of technology than, for example, cobalt and nickel. Demand for lithium for battery production is expected to multiply severely.
Graphite	The most common anode material in both nickel and phosphate dominated battery types, but the development of new anode chemistries for better performance is being actively pursued.
Phosphorus	A key component of certain battery technologies. It is nonetheless the need for phosphate as an input factor for fertiliser and animal feedstock that will continue to constitute the most important applications going forward.



The Norwegian mineral industry can play a key role in sustainable Norwegian and European mineral production and supply.

China's position in the extraction and processing of rare earth elements is often highlighted as an example, where the country has at times shown a willingness to impose export restrictions as economic and political measures. The European Commission considers that China controls the supply chains for a majority of the minerals on the EU's list of critical raw materials. In addition to direct imports from China, a large proportion of the remaining minerals are currently imported from states in which China has significant influence over the value chains, or produced in individual companies in the value chain where Chinese owners or contractual partners exert significant influence.

Parts of the global trade system are under pressure. Blocking or preventing access to raw materials or economically and technologically important industrial products can be used as political leverage. Most major industrialised countries are therefore positioning themselves to deal with greater global uncertainty relating to access to raw materials.

This poses a significant risk to Norwegian and European industry, and may over time lead to less production of such raw materials. The decline over time in Norwegian and European mineral extraction and production of processed raw materials based on minerals has made European industry more vulnerable to politically motivated interventions in the raw materials markets. In Norway, mineral extraction in particular has been reduced over time,

while we are still a significant producer of, for instance, metals and fertiliser.

It has become more important for many highly industrialised countries with limited or no current domestic production of metals and minerals to increase their raw materials autonomy. It is important for both Norway and Europe to increase industry's access to particularly critical raw materials through trade and recycling as well as increased primary production from mining. The Norwegian mineral industry can play a key role in creating more sustainable Norwegian and European mineral production and supply.

In March 2023, the European Commission announced its proposal for the Critical Raw Materials Act (CRMA), with a view to meeting more of the EU's supply of mineral raw materials through extraction, processing and recycling in the EU. This to ensure access to raw materials and opportunities for green industrial development in Europe (see further mention of the CRMA in section 3.5.1). The EU's desire to scale up European production to strengthen the union's value chains will also lead to greater attention to Norway's resource potential and opportunities for increased mineral extraction, processing, metal production and recycling. The cross-cutting challenges for Norway and the EU largely coincide, although various input factors may be of particular importance for individual countries, value chains and businesses.



Global cooperation will be important to ensure access to raw materials.

Strategic autonomy and the significance of access to critical raw materials for national security

The importance of metals and minerals for the defence industry and industrial value chains, with deliveries to both the civil and defence sectors, affords a security dimension to critical raw materials that will increase in step with growing global demand. This development is a potential source of vulnerability for Norway and our allies, but it also creates opportunities for Norway. By further developing the Norwegian mineral industry and taking part in collaboration initiatives with allies, Norway can strengthen both its own and its allies' security of supply and help ensure strategic autonomy.

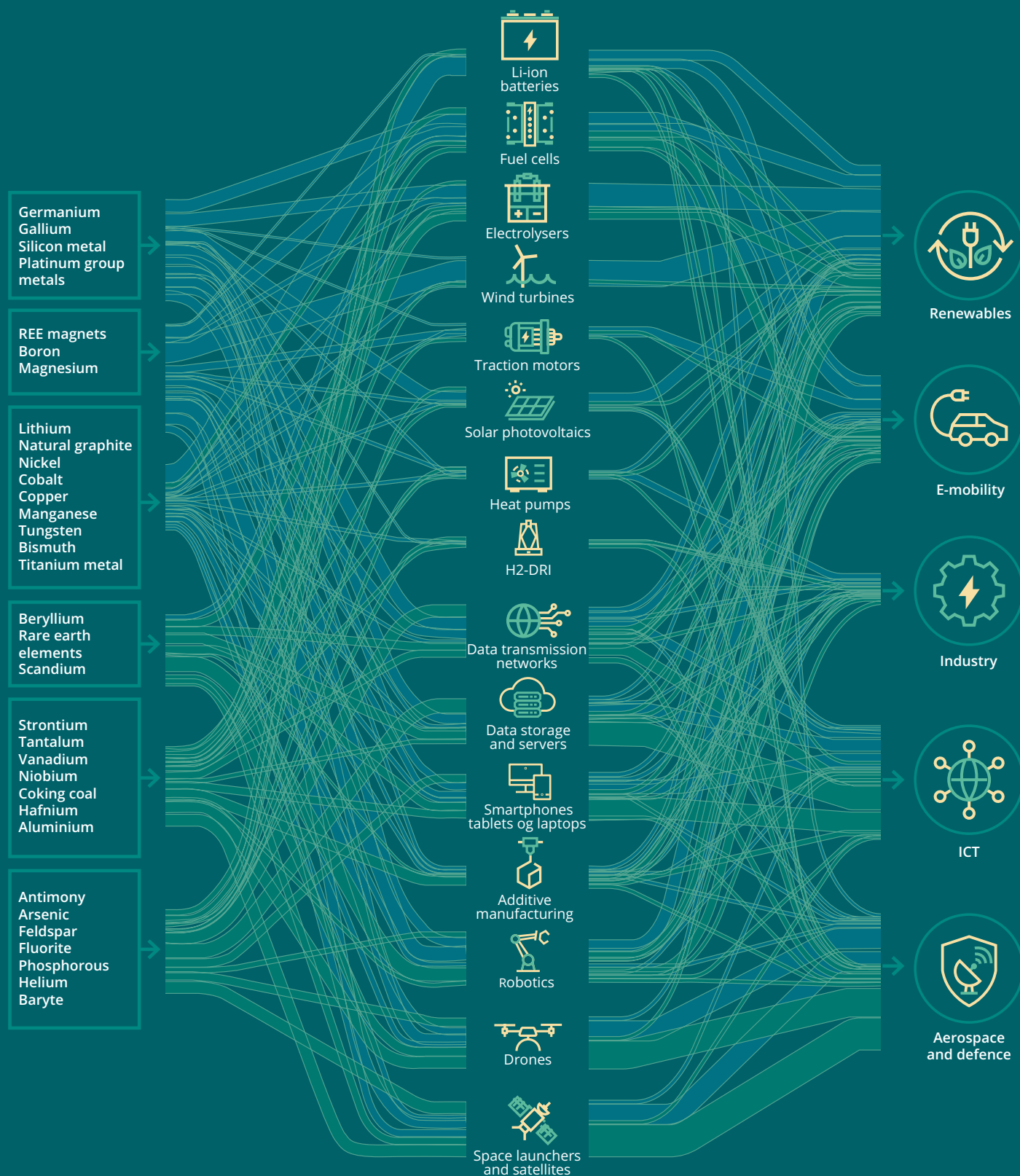
With the mineral strategy, the Government aims to help increase Europe's strategic autonomy at the same time as strengthening access to raw materials for our own industry and securing Norwegian jobs. A large proportion of both Norway's and the EU's mineral raw materials are imported. This applies not least to the Norwegian industrial processing companies that produce aluminium, fertiliser and ferro-alloys, and it will also apply to battery factories, among other things. While some for instance companies, like Norsk Hydro, have holdings in upstream raw materials suppliers, others choose to buy raw materials in spot markets or through long-term contracts and partnerships. How different countries are considered as a supplier of raw materials will vary. Uncertainties relating to corruption, sustainability

and human rights are well known to both producers of raw materials and the industry that buys them. In addition, countries have become more willing to use access to raw materials as a political or economic tool. China in particular has over many years secured access to raw materials in third countries through ownership and contracts. This means that transparency in ownership, contracts etc. has gained increased significance for the security of supply of raw materials, in addition to its importance in other areas, such as combatting corruption.

To ensure access to raw materials, the development of global cooperation is becoming more important, and the USA, Canada and the EU have all initiated international partnerships to ensure well-functioning and sustainable supply chains. Participation in the partnerships is essential to help ensure that Norwegian industry has access to sustainable raw materials, but also to raise the profile of Norwegian projects for critical raw materials and ensure a global development towards more sustainable mineral extraction.

Figure 3.2 shows which raw materials are included in a number of key value chains for different technologies, and the role of the technologists in implementing the green transition. The figure illustrates which raw materials are considered particularly critical for the EU. Countries such as the USA, Canada, Japan and the UK have conducted similar analyses.

Figure 3.2
Critical raw materials across supply chains
of selected technologies and sectors



Supply chain analysis and material demand forecast in strategic technologies and sectors in the EU – A foresight study, JRC science for policy report (2023)

Critical raw materials are defined as raw materials

- for which there are few or no substitutes
- that are strategically important and associated with significant supply risk
- that are concentrated at the extraction, processing or refining stages
- for which supply disruptions will have significant economic or strategic consequences

What are considered critical raw materials will vary significantly between countries, depending on their own needs, domestic production and international factors, their ownership in and agreements with mineral producers, trade policy frameworks and other cooperation between countries on access to raw materials etc. Critical raw materials can include both upstream and midstream products from mineral concentrates 'straight from the mine', to materials from metallurgical and industrial processing. For several metals, supply is sufficient and the risk of supply shortages is low in international markets.

Every three years, the EU publishes a list of raw materials deemed to be critical for European industry. This list includes metals and minerals that have a major impact on the European economy while also being associated with high supply risk.

The EU's most recent list of strategic and critical raw materials was published in March 2023 and contains a total of 34 metals.

Through the Agreement on the European Economic Area (EEA Agreement), Norway is integrated into the EU's single market, and Norway and the Norwegian economy will largely be affected by the same challenges as the EU if the supply situation for critical raw materials deteriorates. At an overall level,

the Norwegian economy will be exposed to the same vulnerabilities as the EU. It can therefore generally be assumed that the EU's overview of critical raw materials is a good point of departure for assessing the consequences of reduced access to raw materials for Norway. At the same time, there is a difference between supply risk and the consequences of inadequate access to the various critical raw materials between Norway, the EU and other of our trading partners.

The technological changes and the transition to renewable energy production the world is facing depend on access to critical raw materials. Ensuring free and predictable access to metals and minerals will therefore be of crucial importance for Norway and its allies.

The EU's list of critical and strategic raw materials (2023)

[Antimony](#)

[Arsenic](#)

[Baryte](#)

[Bauxite](#)

[Beryllium*](#)

[Bismuth](#)

[Boron and borate](#)

[Cobalt*](#)

[Coking coal](#)

[Copper*](#)

[Feldspar*](#)

[Fluorspar*](#)

[Gallium](#)

[Germanium](#)

[Hafnium](#)

[Helium](#)

[Lithium](#)

[Magnesium**](#)

[Manganese](#)

[Natural graphite*](#)

[Nickel*](#)

[Niobium*](#)

[Phosphate rock*](#)

[Phosphorus**](#)

[Platinum group metals](#)

[Rare earth elements, heavy](#)

[Rare Earth elements, light*](#)

[Scandium](#)

[Silicon metal**](#)

[Strontium](#)

[Tantalum](#)

[Titanium metal**](#)

[Tungsten](#)

[Vanadium*](#)



* Raw materials for which Norway has a known resource potential

** Processed raw materials for which Norway has a known upstream extractive potential

Mineral activities and the UN's sustainability goals

The UN report 'Mapping Mining to the Sustainable Development Goals: An Atlas'³ highlights the following sustainability goals as particularly relevant for mineral activities:

Environmental sustainability

SDG 6: Clean water and sanitation, SDG 7: Affordable and clean energy, SDG 13: Climate action, SDG 15: Life on land.

Social sustainability

SDG 1: No poverty, SDG 5: Gender equality, SDG 10: Reduced inequality and SDG 16: Peace, justice and strong institutions (including to reduce corruption).

Economic sustainability

SDG 8: Decent work and economic growth, SDG 9: Industry, innovation and infrastructure and SDG 12: Responsible consumption and production.

³ Mapping Mining to the Sustainable Development Goals: An Atlas, United Nations Development Programme (2016), p. 4

The challenge will also become even more substantial as growth in demand for critical raw materials may also make supply both more expensive and more demanding in the years ahead.

For many critical raw materials, the extraction, processing and production of critical raw materials further down the value chain are highly concentrated in certain countries. This may represent a significant vulnerability for Norway and allied countries. It is therefore essential that Norway, together with its allies, ensures its own supply lines. Based on this, the EU and its allies have promoted a number of

initiatives to build robust value chains for critical raw materials. Significant industrial production of critical raw materials takes place in Norway, and we possess mineral deposits, technology and expertise that enable us to be an important supplier. Clear expectations are therefore expressed for Norway to help strengthen allied security of supply.

Considerations of national security will also become more important in the follow-up of the mineral industry, as the production of critical raw materials in particular will have greater security policy implications for Norway and other countries.

Sustainable mineral extraction

What does sustainable mineral activities entail?

The United Nations Sustainable Development Goals (UN SDGs) from 2015 are a benchmark for all business activities and for the requirements to be set for mineral activities. The United Nations Report 'Mapping Mining to the Sustainable Development Goals: An Atlas'⁴ states that the mining industry has the opportunity and potential to positively contribute to all 17 SDGs. The report shows that there have been positive developments globally in recent decades, but that much work remains to be done. The industry as a whole and individual projects must meet requirements in a number of areas to contribute to the SDGs.

Norwegian regulations safeguard climate and environmental considerations through several pieces of legislation, but the Pollution Act, the Planning and Building Act and the Nature Diversity Act with pertaining regulations are particularly important. Most of the goals are directly or indirectly dependent on the production of goods and services based on mineral raw materials.

One important question is how each country should cover its own consumption of raw materials without adversely affecting other countries. Changes in land use and the use of marine areas are the strongest

driver of loss of biodiversity. It is a challenge that sustainability problems relating to industries that have a negative impact on nature, such as certain types of industry and mineral activities, are shifted from high-cost countries to low-cost countries by allowing high-cost countries to import the products and avoid this type of production themselves. The overall impact may be negative in relation to achieving the SDGs, but will vary depending on the raw materials, the specific countries and the individual projects concerned. Mining in poorer countries is likely to make an increased contribution to the economic sustainability goals, but will at the same time be associated with greater challenges relating to environmental and social sustainability, particularly corruption and good governance. There are significant variations between the individual countries and projects. Better information about how specific extraction projects impact the SDGs will therefore be important in relation to assessing their contribution.

It may be argued that *all countries* that are able to should contribute to a sustainable supply of mineral resources – through mining, material recycling and reuse – and that it should be in a reasonable proportion to the amount they consume. All mineral extraction has an impact on nature and the surrounding area. Countries with limited domestic

4 Mapping Mining to the Sustainable Development Goals: An Atlas, United Nations Development Programme (2016), p. 4



We must use raw materials that are produced with due regard to social, economic and environmental sustainability.

mineral extraction will experience a lower environmental impact and other negative aspects pertaining to mineral activities, while the environmental impact will be felt by other countries. In many cases, these are places with significantly lower requirements when it comes to sustainability, transparency and safeguarding of human rights than in Norway.

Environmental sustainability

The management of environmental issues that arise in connection with mineral extraction is regulated by several pieces of legislation, the most important of which are the Pollution Act, the Planning and Building Act, the Water Resources Act, the Nature Diversity Act and the Minerals Act with pertaining regulations. In addition, EU legislation, which has been implemented in this national legislation, has over time taken on greater significance for the regulation of environmental aspects of mineral activities. These include the Environmental Impact Assessment Directives, the Water Framework Directive and the Mining Waste Directive.

Any activity that may cause pollution requires a permit from the pollution control authority. When the pollution control authority decides whether to grant a permit and lays down conditions to be imposed, emphasis will be placed on the pollution-related nuisance arising from the project as compared with any other advantages or disadvantages that may arise.

Mineral extraction involves land use, and pollution arises in the form of e.g. noise, greenhouse gases, vibrations, dust, chemicals and extractive waste that must be disposed of. This has environmental impacts and may have a negative impact on nature and biodiversity. It is the extent of land seizures in particular, including for the disposal of extractive waste, that represents the most significant environmental impact. It is not possible to avoid mineral activities encroaching on the natural environment, but it is a goal for the negative consequences to be reduced to a minimum based on the requirement for sustainable, responsible operations.

The EU's Green Deal and the Circular Economy Action Plan are increasingly setting important premises for the development of business and industry in Europe in a more circular and sustainable direction. Through advanced material recovery, materials and especially metals from discarded products, buildings, vehicles and other waste can become secondary raw materials for new products. Advanced material recovery is more environmentally friendly than mining and will be an important addition to the raw material supply from mining. Discarded electronics, batteries and electric motors, for example, contain valuable and critical metals that can be reused.

International framework for nature



Changes in land use and the use of marine areas, over-harvesting, climate change, pollution and alien species are direct drivers of loss of nature. To reverse the loss of nature by 2030, the countries of the world have agreed on global targets laid down in the Kunming-Montreal Global Diversity Framework (the 'agreement on nature'). The targets should be reflected in the countries' national action plans, but are also relevant for businesses that may wish to apply the targets directly. During 2024, the Government will present a white paper clarifying Norway's follow-up of the global targets. The framework has been negotiated under the Convention on Biological Diversity (CBD). The Convention is a global agreement on conservation and sustainable and equitable use of biodiversity, signed in 1993.



Considerations of human rights, the environment, waste management, climate footprint and local communities must be sufficiently addressed for extraction to be sustainable.

The climate is important to environmental sustainability. A target of reducing net greenhouse gas emissions by 90–95 per cent from 1990 levels has been set.⁵ The mining industry is undergoing a shift from diesel to fossil-free operations through electrification and digitalisation. The transition is largely dependent on the supplier industries' development of electric and possibly remote-controlled vehicles and equipment, but new mines are increasingly being planned with the use of zero-emission solutions, often in the form of electric vehicles and machinery. The mineral industry is covered by the EU Emissions Trading System, and larger companies may need to use gas or other fossil energy sources in processing plants. For most companies, however, the emissions will largely come from machinery and vehicles that are not covered by the quota system.

Measures such as the European Commission's proposal to establish a Carbon Border Adjustment Mechanism (CBAM) may to some extent help reduce the problems of such relocation. The aim of the mechanism is to prevent carbon leakage, i.e. that production of goods is relocated to countries with lower climate ambitions and lower emissions taxes than in the EU.

Social sustainability

The social sustainability aspect of mineral extraction is often linked to the fulfilment of human rights, safe

working conditions, corruption, transparency, relations with the local population and how much the extraction gives back to local communities in the form of jobs, direct transfers, infrastructure development or other services. Through stakeholder dialogue, most established extraction sites have made adaptations that the surroundings can accept, and the surroundings have in most cases also become accustomed to and accepted the impact from the operation. Several new projects in Norway have been associated with a significant level of conflict, however. Projects that are realised are usually dependent on local support in the form of a majority decision by a municipal council, but some projects, especially those involving submarine tailings disposal, have been met with protests from nature and environmental organisations. Several projects that are planned in areas with reindeer herding also face opposition from Sami organisations and rights holders.

Mineral activities in Sami areas

Mineral activities such as exploration, surveying, sampling, mineral extraction and transport in traditional Sami areas may infringe on various Sami rights. Both companies and the authorities have obligations to comply with human rights. Many activities will be able to be carried out without any significant impact, while others could potentially have a major impact. However, the most common line of conflict between mineral extraction and Sami rights is the potential impact of mineral activities on reindeer herding. The Sami reindeer herding area extends north from Engerdal in Innlandet county and covers much of the Norwegian mainland.

⁵ Klimaendringer og norsk klimapolitikk – regjeringen.no (in Norwegian only)



Obligations of the State under international law

When assessing applications for permits for mineral activities in traditional Sami areas, the public authorities are responsible for assessing whether the project violates, among other things, key human rights provisions in the Constitution, such as Article 108 on the preservation of the Sami language, culture and way of life, and the International Covenant on Civil and Political Rights, Article 27 on the right of minorities to cultural activities. Particularly relevant in matters relating to mineral extraction in traditional Sami areas is the impact a specific project can have on reindeer herding, since reindeer herding is important for the Sami language and culture. The provisions entail that projects that involve excessive encroachment on the Sami language, culture and society will be unlawful.



To be able to identify and clarify possible direct impact on Sami rights and interests, it is important to have an early and good dialogue with stakeholders.

Whether a mineral activity will affect reindeer herding will vary depending on the specific activity concerned, how it is carried out and which reindeer herding rights are or may be affected. A larger extraction operation will usually have an impact on reindeer herding that takes place in the area, while a smaller operation or mineral activities such as prospecting and exploration will not necessarily have a direct impact.

Sufficient information about the herders' use of the land and about the specific mineral activities is important in order to clarify the possible direct impact on Sami rights and interests, and how to reduce such impact. Constructive dialogue between the parties at an early stage is therefore of great importance to the individual projects. In projects where reindeer herding will be adversely affected, regular dialogue is necessary to clarify both the process, the involvement and the scientific basis for the decisions to be made. A constructive framework is necessary for the dialogue to contribute to expedient processes. This includes the parties having relevant information available, and that they agree on how information gaps can be addressed. Information and knowledge that in some cases may be lacking or difficult to access for the parties concerns

the herders' use of land, which specific mineral activities will be carried out and when, information about progress in projects and the regulatory framework for projects and individual permits.

In addition, the public authorities have a responsibility to facilitate necessary dialogue on applications for permits through the consultation rules in the Sami Act. Pursuant to Chapter 4 of the Sami Act concerning consultations, there is a duty to consult the relevant government authorities when applying for operating licences and several other types of permits. In addition, municipal land-use planning cases will normally also involve rights holders and other affected Sami interests.

In the Minerals Act Committee's official report (NOU 2022:8 *Ny minerallov*), the relationship between the Minerals Act, international law and Sami interests and rights was discussed in detail. The committee proposes introducing a duty of consultation for exploration permits granted by the Directorate for Mining with the Commissioner of Mines at Svalbard (DMF), and clarifying a requirement for an agreement between the mineral project promoter and affected rights holders where mineral activity will or may adversely affect Sami rights.



Reporting sustainability risk

If financial institutions and investors are to channel capital to companies that are well equipped to manage climate and sustainability risks, the companies' disclosure of relevant and comparable information is crucial. In order to be able to assess and compare companies, financial market participants and other stakeholders need both information about how the company is affected by and deals with climate and sustainability-related circumstances and how the company's operations affect society and the environment around them.

EEA rules on sustainability reporting in the Accounting Directive have been implemented into the Norwegian Accounting Act. In the EU, a new Corporate Sustainability Reporting Directive (CSRD) has been adopted to facilitate the transition to a sustainable economy. The goal is to ensure that sufficient public information is available about the sustainability risks companies are exposed to, and the company's impact on people and the environment. The Securities Law Committee is currently assessing the implementation of the directive into Norwegian law, and will submit its report in the spring of 2023. In its 2023 report on the financial markets, the Government signalled expectations regarding companies' reporting, management and disclosure of climate and environmental risk.



In order to be able to realize new mineral projects faster, we must be best in class in terms of sustainability.

The importance of sustainability for mineral activities

There is an extensive focus on sustainability in the global mineral industry. Mining projects and companies that do not sufficiently safeguard environment, safety and human rights will, in the vast majority of countries, have greater difficulties in obtaining funding and general acceptance than sustainable projects. In the consultancy firm EY's ranking of the ten most important risk factors for the minerals and metals sector in 2023, environmental, social and commercial conditions were rated the highest.⁶ Globally, the most material single factors are community impact, water management and climate impact.

This is particularly important in countries where the local population and landowners have a say in decisions on the establishment of extraction operations. It is also common for investors, banks and financial institutions to impose sustainability requirements over and above the minimum requirements imposed by each country's national legislation. Such requirements are routinely adopted as part of a strategy to reduce the long-term risk of unforeseen consequences from mining operations and to safeguard the reputation of financial institutions and investors.

The fact that Norway generally has a high standard of sustainability is also an advantage for the Norwegian

mineral industry. Norwegian mineral industry is associated with lower risks relating to sustainability, corruption, transparency and human rights than projects in many other countries.

For projects in Western countries such as Norway, it is usually demanding to obtain funding for large-scale projects that involve significant sustainability challenges. Furthermore, most countries emphasise the local population's views on specific projects. It is often the local population that is most affected by the negative consequences of mineral extraction. Issues relating to local participation, how much of the value creation that accrues to the local community in the form of jobs, ownership income and other remuneration are therefore of great importance to the companies.

The emergence of 'green finance' can also have a bearing on the financing of mining projects. Access to capital for projects that cannot document that they are sufficiently green is more difficult than for other projects. Transparency about how companies deal with climate and sustainability issues, and how individual projects affect the climate, environment and society around them, is therefore of great importance to mineral projects' access to capital.

The EU classification system for sustainable economic activities (the Taxonomy) has brought this into focus. Its purpose is to facilitate the channelling of capital to sustainable activities and projects.

⁶ EY Knowledge analysis of the business risks and opportunities survey 2023, EY (2023)



Industry sustainability systems

The Norwegian Mineral Industry, the trade union that organises most of the biggest operators in Norway, has adopted the Canadian system Towards Sustainable Mining (TSM). The system aims to encourage its members to work systematically on developing the sustainability of the individual extraction sites. This is done by the individual sites reporting on their own development in a number of areas that include health, safety and the environment, biodiversity, climate, relations with local communities and indigenous people, and the disposal of tailings. The companies' self-reporting is reviewed by an external auditor, and the system has a reference group that comprises representatives of different stakeholder groups affected by the mineral activity. The reference group provides advice on how TSM should be implemented, followed up and developed. The Ministry of Trade, Industry and Fisheries has granted funding to the implementation of TSM.

In order to be defined as sustainable under the taxonomy, an activity must contribute significantly to achieving one of six environmental objectives and do no significant harm to the other five. The European Commission has not yet presented draft criteria for mineral extraction and metal production activities. If such criteria are established in the EU, they could become a global standard for mining and metal production that qualify for green financing. It is common for banks, stock exchanges, funds and other sources of funding to have dedicated requirements for mineral activities. This may be materialised in the form of separate criteria that must be met or through the fulfilment of certain international standards.

For mineral extraction, specific certification systems or standards such as Towards Sustainable Mining (TSM), the International Council on Mining and Metals (ICMM), the Responsible Minerals Initiative (RMI), the Responsible Mining Index (RMI) and the Initiative for Responsible Mining Assurance (IRMA) are often used. The systems can either be based on self-reporting or third-party assessments and can be based on voluntary affiliation at country, project/site, company, group or industry level.

The Norwegian mineral industry

Norway has significant mineral resources that provide a basis for value creation and jobs, especially in rural areas. The mineral industry in Norway consists of raw materials for construction (crushed stone/aggregate, gravel, sand), natural stone (for ornamental use, construction purposes etc.), industrial minerals and metals. In 2021, the mineral industry had a turnover of NOK 12,867 million and employed 4,436 full-time equivalents. The export value in 2021 was NOK 6,245 million, which represented 48.5 per cent of the total sales value. This represents an increase of 10.9 per cent compared with 2020.⁷ In recent years, we have seen the greatest increase in turnover in the categories industrial minerals and metallic ore.

In 2021, there were two main operators involved in the extraction of metallic ore in Norway: Rana Gruber AS, which extracts iron at Mo i Rana, and Titania AS, which extracts the titanium mineral ilmenite at Hauge in Dalane (Figure 3.3). Titania's production makes up about 5 per cent of global production of titanium minerals, and the mine has iron and nickel production as side streams.

In the same year, Norway produced industrial minerals, such as limestone and dolomite, graphite, quartz/quartzite, nepheline syenite, olivine, anorthosite and feldspar. Nearly all of the graphite, feldspar, nepheline syenite and olivine produced was exported, while limestone and quartz/quartzite to a large extent was sold domestically. Norway is an important European producer of several industrial minerals, with Norwegian olivine production covering almost half of global demand. Norway is also the largest European producer of graphite and nepheline syenite. In addition, Norway has significant turnover from raw materials for construction and natural stone, partly from exports.

Prospecting and exploration activities are a key part of the development of mineral projects. The geology of ore and mineral deposits can be assessed from geological, , geophysical and geochemical maps and data available to exploration companies through the geological databases of the Geological Survey of Norway. According to DMF, companies with ongoing operations conducted prospecting and exploration activities for NOK 40 million in 2021.

⁷ *Harde fakta om mineralnæringen 2021*, Directorate og Mining with the Commissioner of Mines at Svalbard (DMF) (2021), p. 7.

Figure 3.3
Metal industrial mineral production,
advanced metal projects



The Directorate for Mineral Management with the
 Commissioner of Mines at Svalbard (DMF) and
 the Geological Survey of Norway



Norway has a significant resource potential.

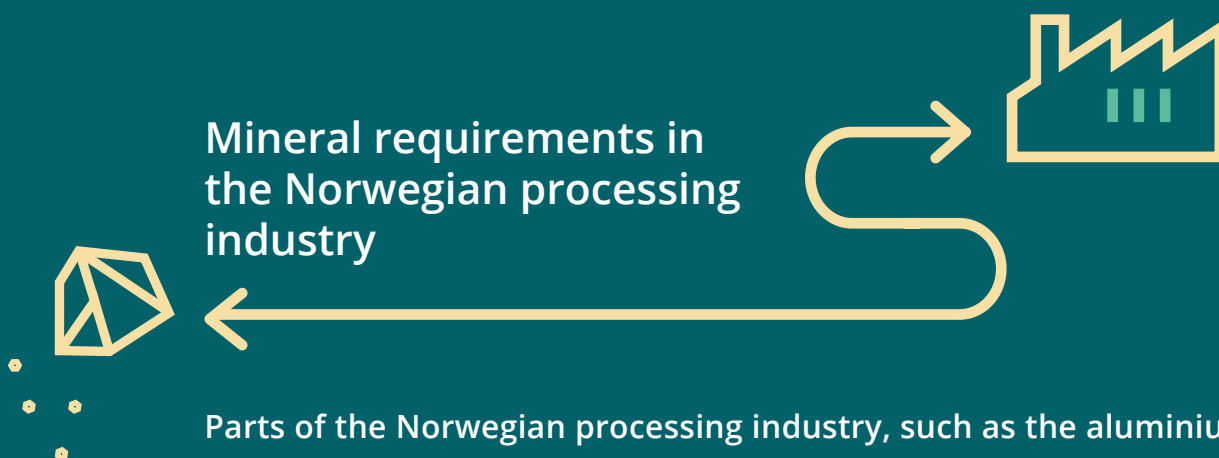
In areas without operations, reported exploration activities amounted to NOK 233 million. DMF granted 401 new exploration permits in 2022.⁸

There are currently three mature metal projects in Norway that have been granted an operating licence: Nussir (copper), Engebø (titanium minerals/garnet), and Sydvaranger (iron). All three projects have completed feasibility studies and have plans for extraction in place. Nordic Mining's titanium and garnet project at Engebø is under construction, with production scheduled to start in 2024. Engebø will be the first new metal mining project in Norway for many decades. In addition, several projects are under development, but at earlier stages where the availability of resources and the potential for profitable operations have yet to be clarified. Active exploration is taking place for e.g. rare earth elements, copper, zinc, cobalt, nickel, vanadium, beryllium and titanium minerals. Exploration projects for the industrial minerals quartz, apatite (phosphate) and graphite are also taking place.

Norway also has a significant processing industry that uses mineral raw materials, the largest of which are related to aluminium and fertiliser production. The companies Norsk Hydro and Yara are also major mining companies, but do not engage in mineral extraction in Norway. There is also Norwegian industrial production based on the processing of Norwegian raw materials. Examples include Kronos Titan in Fredrikstad, which produces pigments and water purification chemicals based on ilmenite concentrate from Titania, and OMYA, which produces fillers of lime with raw material from Norwegian limestone extraction.

The most profitable location for the processing industry depends, among other things, on the costs of transport and power and access to expertise and technology. There is not necessarily a geographical link between the processing industry and extraction, but in some cases, there may be good reasons for co-locating them. Examples include factors relating to transport costs, that the value chain becomes more resistant to supply problems, or gains in terms of innovation or skills.

⁸ Annual report 2022 for the Directorate for Mineral Management with the Commissioner of Mines at Svalbard (DMF), p. 27



Parts of the Norwegian processing industry, such as the aluminium industry, have always been dependent on imports while others have been or are dependent on mineral raw materials produced in Norway. The Norwegian processing industry is an important industrial segment that imports large quantities of mineral resources and engages in significant exports.

However, the needs of the mineral processing industry are complex. Glencore Nikkelverk in Kristiansand produces nickel, copper, cobalt and platinum group metals (PGM) based on imported raw materials from e.g. Canada, and Boliden's smelting plant in Odda produces zinc from ore imported from Ireland. The production of several different types of iron alloys is dependent on imports, while Norwegian silicon production is largely based on Norwegian quartz, supplemented by imports. Norway has a long value chain based on its own quartz/quartzite resources, with five production sites that primarily supply Norwegian downstream industry with raw materials for the production of silicon alloys and solar cell silicon.

In Fredrikstad, Kronos Titan bases its pigment production on raw materials from the company's own mine in Hauge in Dalane, while TiZir imports titanium minerals for the Tyssedal smelting plant. Yara also imports significant quantities of mineral raw materials for the production of mineral fertiliser, such as phosphate and potassium.

Norway's potential for future extraction of critical raw materials

Critical mineral resources

Norway shares much of its geological history and resource potential with Sweden and Finland. In 2022, Nordic Innovation presented a report describing the Nordic supply potential for critical minerals. The report is based on the European Commission's assessment of critical raw materials and shows that the potential for the majority of critical raw materials in the Nordic region is moderate to large, and that the region stands out in the European and, to some extent, global context.⁹

Norway has a large resource potential for critical raw materials. However, much of the country has not yet been surveyed using modern geophysics. The critical minerals and metals that are considered to represent the biggest potential in Norway are natural graphite, copper, nickel, high-purity quartz grades for silicon production, titanium minerals, rare earth elements, phosphate, cobalt, niobium and vanadium (Figure 3.4).

Current production of natural graphite and the Norwegian value chain from quartz to silicon bear witness to some of this potential. Norway is also an important European producer of feldspar minerals, which were added to the EU's list of critical minerals

in 2023. At the top of the EU's list of supply risks associated with critical raw materials are rare earth elements (REE). Norway has several interesting REE deposits, the most important of which is the Fens field at Ulefoss in Telemark. The Fens field may prove to be Europe's largest REE deposit.

A large number of deposits of both metals and industrial minerals have been documented and evaluated over time, and many of the known deposits have been explored in greater detail by private exploration companies. The exploration companies base their priorities and choice of method on existing geological knowledge. This is in turn the result of precompetitive surveying, which is typically carried out by the Geological Survey of Norway and previous surveys carried out by other companies.

Geophysical maps of, among other things, the magnetic and electromagnetic properties of the bedrock and the presence of natural radiation constitute some of the exploration companies' most important datasets. Regional geophysical data are typically collected from aircraft or helicopters and can be used to study and assess underground geology. Today, about half of the Norwegian mainland is covered by high-resolution geophysical maps, which provide a good starting point for the companies to identify relevant areas for mineral exploration (Figure 3.5).

⁹ The Nordic Supply Potential of Critical Metals and Minerals for a Green Energy Transition, Nordic Innovation (2021), p. 6

Figure 3.4
Significant deposits of critical
metals and industrial minerals

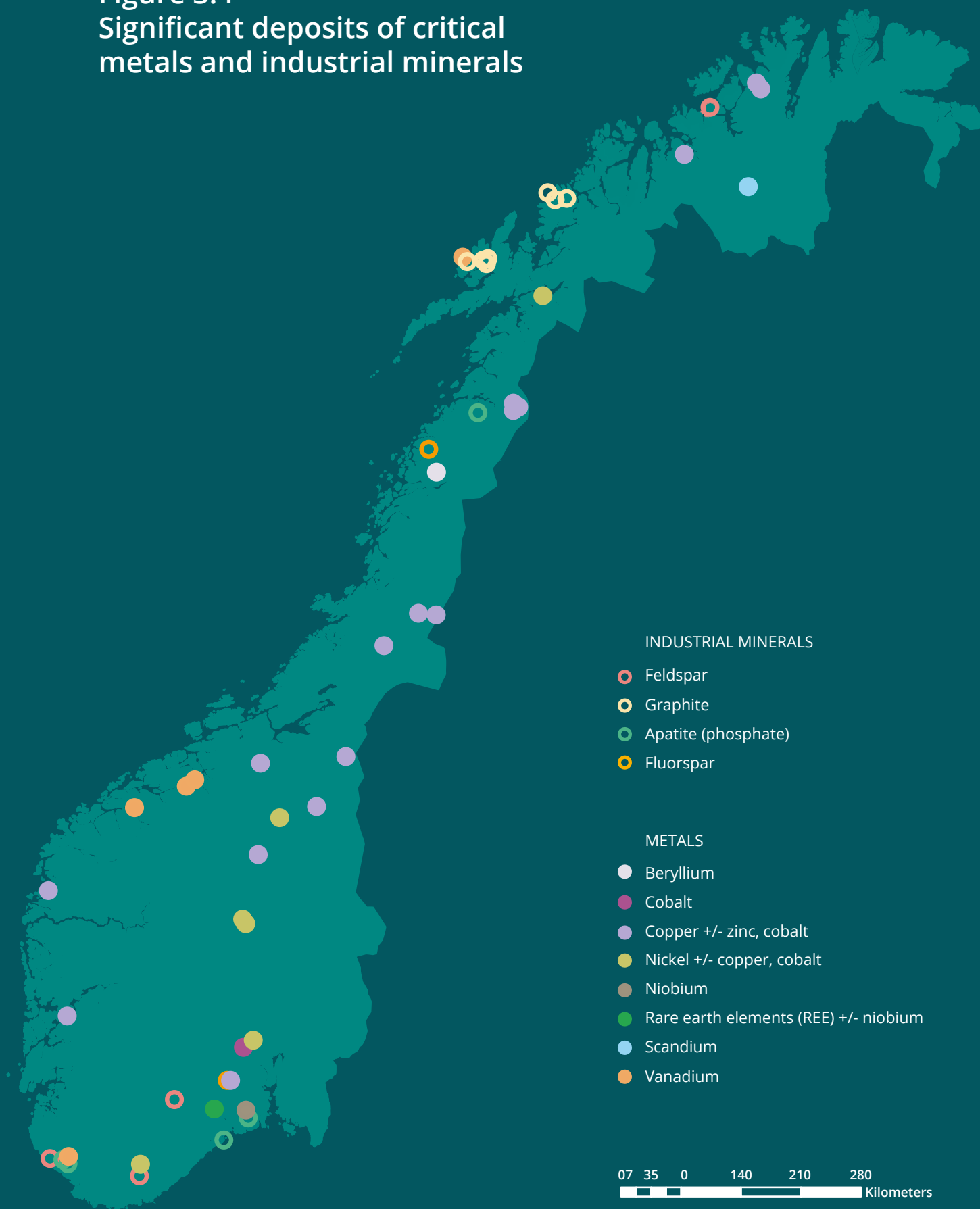
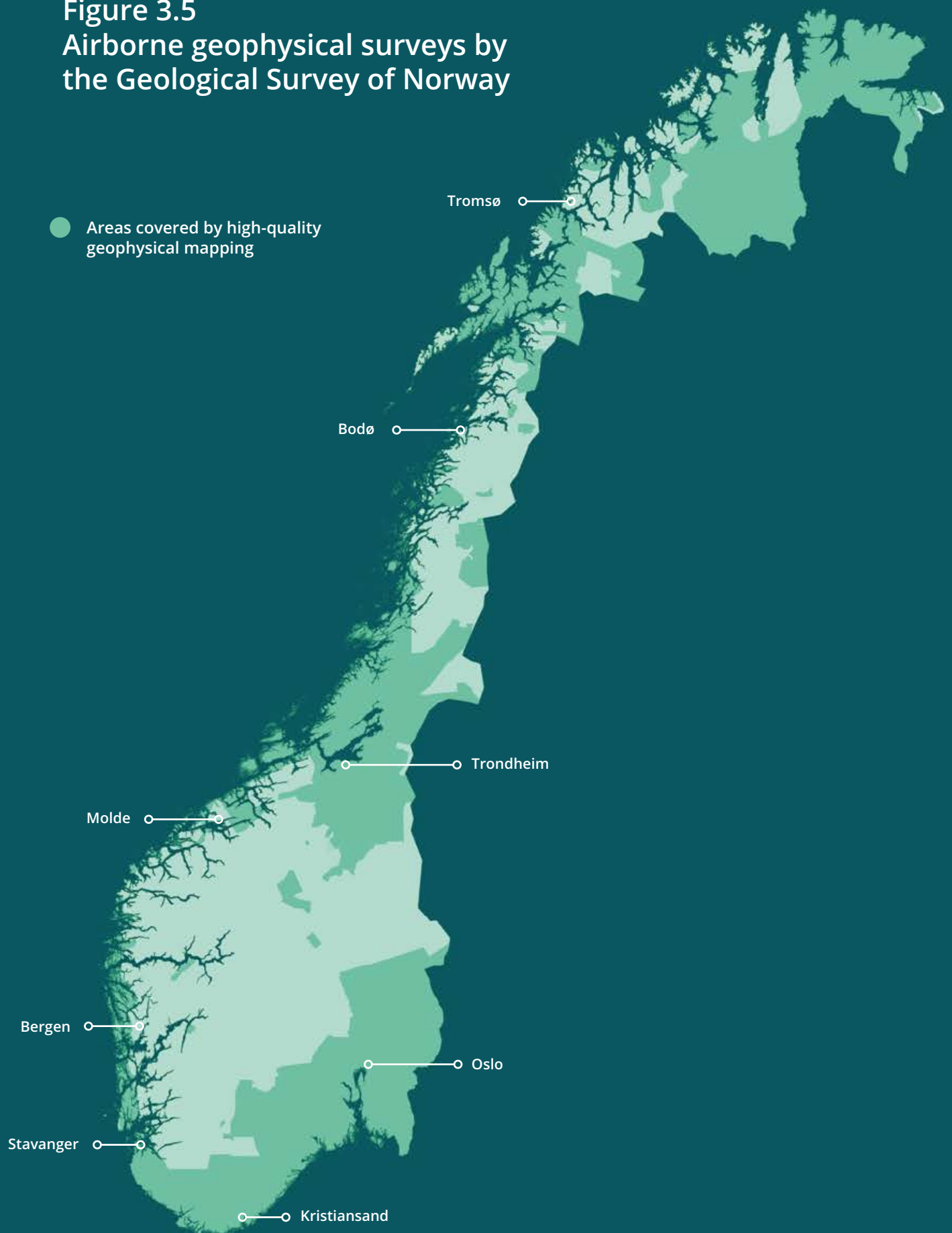


Figure 3.5
Airborne geophysical surveys by
the Geological Survey of Norway



Resources in tailings from mineral production

During the operational period, utilisation of all the resources extracted will be a key element in sustainable and efficient resource management. The increased need for a number of metals and minerals to aid the green transition has generated increased interest in the mapping of tailings. Tailings deposited after metal production may contain metals that were not technically possible to extract, or metals that were not relevant or profitable to extract when the mine they came from was in operation. New processing of deposits from older tailing dams or landfills can usually be realised within substantially shorter time horizons than new primary production. The EU, Canada and several European countries are therefore facilitating extraction from secondary resources through mapping and characterization of old disposal sites. In Norway, tailings from primary production of copper and zinc are likely to contain cobalt in addition to residues of copper and zinc minerals that may be recovered with modern technology.

Seabed minerals

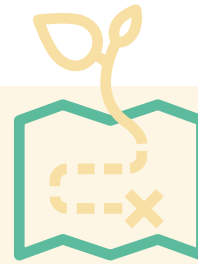
The extraction of seabed minerals can help ensure global access to important metals and at the same time provide opportunities for the development of Norwegian mineral extraction and Norwegian companies. From many years of research activity and the Norwegian Petroleum Directorate's mapping, we know that there are both sulphide occurrences and ferromanganese crusts in the deeper parts of the Norwegian continental shelf. Many of the Norwegian copper and zinc deposits that have been mined on land over time were formed in the same

way as the sulphide deposits that are currently being formed on the volcanic spreading ridge between Norway and Greenland. As for the corresponding deposits on land, the sulphides on the seabed primarily contain copper and zinc, but in part also cobalt and gold. The ferromanganese crusts on the Norwegian continental shelf are rich in iron and manganese and contain interesting concentrations of for instance cobalt.

Seabed minerals are managed in accordance with the Seabed Minerals Act. Under the Act, no commercial mineral activities may be carried out in marine areas that have not been opened for such activities. To date, the State has devoted limited resources to mapping, and knowledge of the resource basis and environmental impact is therefore limited. In order to facilitate further resource mapping and exploration, it will be important to also mobilise the private sector.

The Government wishes to facilitate profitable mineral activities on the seabed and has presented a white paper on the possibility of opening areas on the Norwegian continental shelf for mineral activities.

Norway strives to be world-leading on fact-based and knowledge-based resource management, including of seabed mineral resources. Norway has a long-standing tradition of such sound resource management that facilitates the exploitation of natural resources while at the same time safeguarding environmental values and other interests.



Mapping of secondary resources in the Nordics

Through Nordic Innovation, the Nordic Council of Ministers has established the 'Sustainable Minerals' programme 2021–2024 to develop the Nordics as a leading region for sustainable mineral production. One of the three projects in the programme is aimed at mapping and method development to increase circularity and extraction from secondary metal and mineral resources. The geological surveys participating in the programme will work to develop a systematic and common classification methodology for assessing secondary resources, optimize mapping and characterization methodologies and promote critical raw material potentials in such disposal sites through the national resource databases.

Deep-sea mining is a new and immature industry in both national and international context. In line with established practices from the resource management of other sedentary natural resources on the continental shelf, the Government is proposing an incremental approach to activity in the area that is being opened. This means that, after a possible opening, a gradual exploration of the area will be facilitated by granting permits that will contribute to knowledge building and data collection under the auspices of private companies. In addition, the central government will carry out a mapping of resources and environmental conditions in the deep sea areas.

A prerequisite for extraction to take place is that profitable resources can be demonstrated and production can take place in a responsible and sustainable manner. The Seabed Minerals Act, which regulates such commercial activities on the Norwegian continental shelf, establishes and lays the foundation for responsible deep-sea mining. When the knowledge-building by the central government and private companies has advanced, thereby gaining experience of regulating the industry, the Government will reconsider whether it is appropriate and necessary to establish an area-specific framework for operations as an instrument for protecting environmental values at the regional level in the area being opened. The plan is to conclude this assessment before the first application for an extraction plan is approved.

Framework conditions for mineral extraction in Norway

It is the sum of the framework conditions that is essential for the development of the mineral industry. General trade and industrial policies, which include tax policy, energy policy, skills policy, transport policy and climate and environmental policy, are the most important frameworks for mineral activities in Norway. In addition, interest rates and exchange rates are of great importance for investments and profitability.

The general framework conditions for commercial activities in Norway are favourable. At the same time, there are also some challenges for parts of the Norwegian business community. Larger-scale mineral extraction operations with processing plants are major consumers of power. Access to power is crucial for the industry's long-term growth opportunities.

Many pieces of legislation regulate mineral activities in Norway. Among the most important are the Minerals Act, the Pollution Act and the Planning and Building Act, the Nature Diversity Act, the Motor Traffic Act and the Cultural Heritage Act. DMF grants exploration and production permits and operating licences to mineral companies. The Minerals Act regulates the companies' obligations in connection with start-up, operation, cessation and clean-up. The role of municipalities as the competent authority under the Planning and Building Act and the Motor Traffic Act is of particular importance to the industry.

The Minerals Act Committee's official report (NOU 2022:8 *Ny minerallov*) was presented on 1 July 2022.

In addition to the report and the consultation round, the Government's further work on the Act will also include follow-up of measures set out in the mineral strategy.

Critical Raw Materials Act (CRMA)

On 16 March 2023, the European Commission presented the Critical Raw Materials Act (CRMA), a policy initiative intended to strengthen the progress of extraction and industrial projects and to help secure the EU's access to critical raw materials. The initiative aims to strengthen the member states' value chains for critical raw materials, reduce supply risks and strengthen research and development, innovation and expertise. CRMA includes a proposal for a regulation, the creation of a 'Critical Raw Materials Club' and the strengthening of strategic partnerships. CRMA sets its own targets for the share of critical raw materials that should be covered by the member states' extraction, processing, production and material recycling industries.

With the regulation, the European Commission will introduce new rules for the coordination of permits for critical raw materials and a separate fast-track process for strategic projects approved by the Commission, which sets specific requirements for members states to prioritise progress, including tight deadlines. The countries are required to appoint a national competent authority to coordinate applications for permits for critical raw materials projects.

Norwegian Official Report (NOU) 2022:8: New Minerals Act



The Minerals Act Committee was appointed on 23 June 2020 and submitted its recommendation on 1 July 2022. The committee was given a broad mandate and presented a proposal for a new Minerals Act, mainly based on the existing Act. Amendments were proposed in many areas. Among other things, the committee proposes a thorough modernisation of the Act to make it more comprehensible and to make its application more predictable for the public administration and the mineral industry. The committee specifically proposes extensive amendments and clarifications relating to the relationship with Sami right holders, the licensing system and the reporting of samples and data for exploration purposes. Furthermore, the committee has proposed amendments to the Minerals Act and other legislation to improve coordination between different regulatory processes, and to develop the Act more clearly in the direction of a resource management act for minerals.

The proposal was distributed for consultation in autumn 2022, and more than 130 consultation submissions were received. The feedback has been mostly positive. Important topics in the consultation included relations with landowners, municipalities, Sami rights holders and the impact on nature.

They are also required to establish national mapping programmes for critical minerals. The geological mapping will include both geochemical and geophysical surveys with the aim of identifying deep ore deposits.

The draft regulation must be adopted by the European Parliament and the Council before it enters into force. It is expected that the proposal will be dealt with quickly, so that the regulation can enter into force before the European Parliament elections in spring 2024. The EU Commission has marked the regulation as 'EEA relevant' and the proposal is also under consideration in Norway and the other EFTA countries. If the regulation is adopted and assessed as EEA relevant, it will have an impact on the organisation of permits for mineral activities for critical raw materials throughout the lifespan of mineral projects.

Public funding schemes

Access to capital and a well-functioning capital market is a prerequisite for sustainable growth, transformation and innovation. The capital market in Norway largely functions as intended. Norwegian financial institutions are robust and liquid, and public schemes help to finance socio-economically profitable projects that have not been able to obtain ordinary market financing. At the same time, there are a number of potential challenges associated with the financing of mineral industry projects both in Norway and abroad. International financial markets

and foreign stock exchanges are important for the financing of surveying and exploration projects and large-scale mineral projects.

A number of different funding schemes are available for the industrial sector under the public funding agencies, including loan schemes. Most of the schemes are open and have a broad scope. Innovation Norway's funding schemes can mainly be divided into loans, guarantees and grants. The agency's schemes are most relevant for innovation and the development of technology etc. during the industrial development and operational phases. The Skattefunn scheme, which is managed by the Norwegian Tax Administration and the Research Council of Norway, allows companies to deduct 19 per cent of the expenses for research and development projects provided that they meet the criteria to be defined as R&D in accordance with the Taxation Act.

Export Finance Norway (Eksfin) offers government loans and guarantees that promote sales contracts and export promotion investments in Norway. Eksfin can, for example, furnish long-term loans and/or guarantees for investments relating to the establishment and expansion of mines in Norway with a high export share, and for exports of Norwegian equipment for mining projects abroad. The agency's schemes are relevant for large-scale mineral projects where an investment decision is imminent,

the project is well documented, and the mine is more or less ready for construction.

There are also investment instruments that may be relevant for certain early-stage industrial and mineral projects, such as Nysnø and Investinor. In 2022, for example, Nysnø invested in REEtec, a company that aims to establish an industrial plant on Herøya for the separation of rare earth elements.

There is also funding available for the mineral industry through EU funding schemes. Norway engages in close dialogue with the EU on industrial and mineral policy, including alignment with the Critical Raw Materials Act (CRMA). CRMA contains a proposal for a regulation with a set of measures to ensure easier access to European funding and support schemes at national level. Strategically important projects will be offered financial advice from a pan-European Raw Materials Board, while the European Commission will facilitate contact between (potential) manufacturers of raw materials and the European marketplace, and the member states will establish business support information platforms with services aimed at national and European support schemes.

Policy instruments to support research and innovation

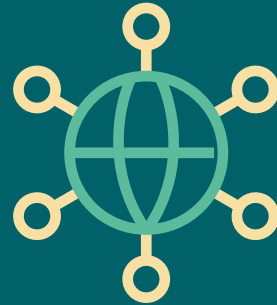
To ensure sustainable development in the mineral industry going forward, research and innovation will play an important role. The Norwegian research portfolio in the traditional mineral industry is relatively small at present. The Research Council of

Norway has some relevant schemes, but mineral projects are inadequately represented in its portfolio and mainly concern the extraction of seabed minerals. The open arenas Programme for User-driven Research-based Innovation (BIA), RENEW and NANO2021 are the most relevant for the mineral industry. Another option is the Skattefunn scheme, although there are currently few mineral industry operators that make use of this opportunity. It is also possible to apply for funding through the EU programme Horizon Europe, and for Norwegian research institutions that are members of EIT Raw Materials, there are calls for proposals aimed at the mineral-based value chain.¹⁰ Norwegian operators can apply for funding on equal footing with businesses, public sector bodies and research institutions in EU member states. Horizon Europe is the largest transnational research and innovation programme in the world, with a budget of EUR 95.5 billion.¹¹ Under Horizon Europe, 'Cluster 4 – Digital, Industry and Space' will be most relevant for projects that involve raw materials. The Research Council of Norway offers various support schemes to increase the chance of succeeding in the competition for EU funding.¹² Innovation Norway has contributed to Norwegian applicants receiving funding from Horizon Europe for projects relating to critical raw materials.

¹⁰ <https://eitrawmaterials.eu/>

¹¹ Facts about Horizon Europa (forskingsradet.no)

¹² Financial schemes for Norwegian participants (forskingsradet.no)



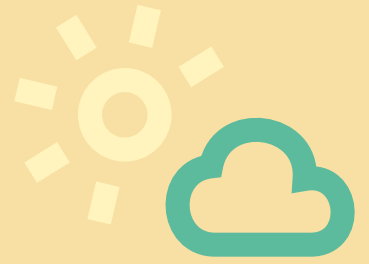
Export financing

Eksfin can finance the mineral industry in two different ways: i) investments relating to mining projects in Norway and ii) procurers of Norwegian equipment for use in projects abroad.

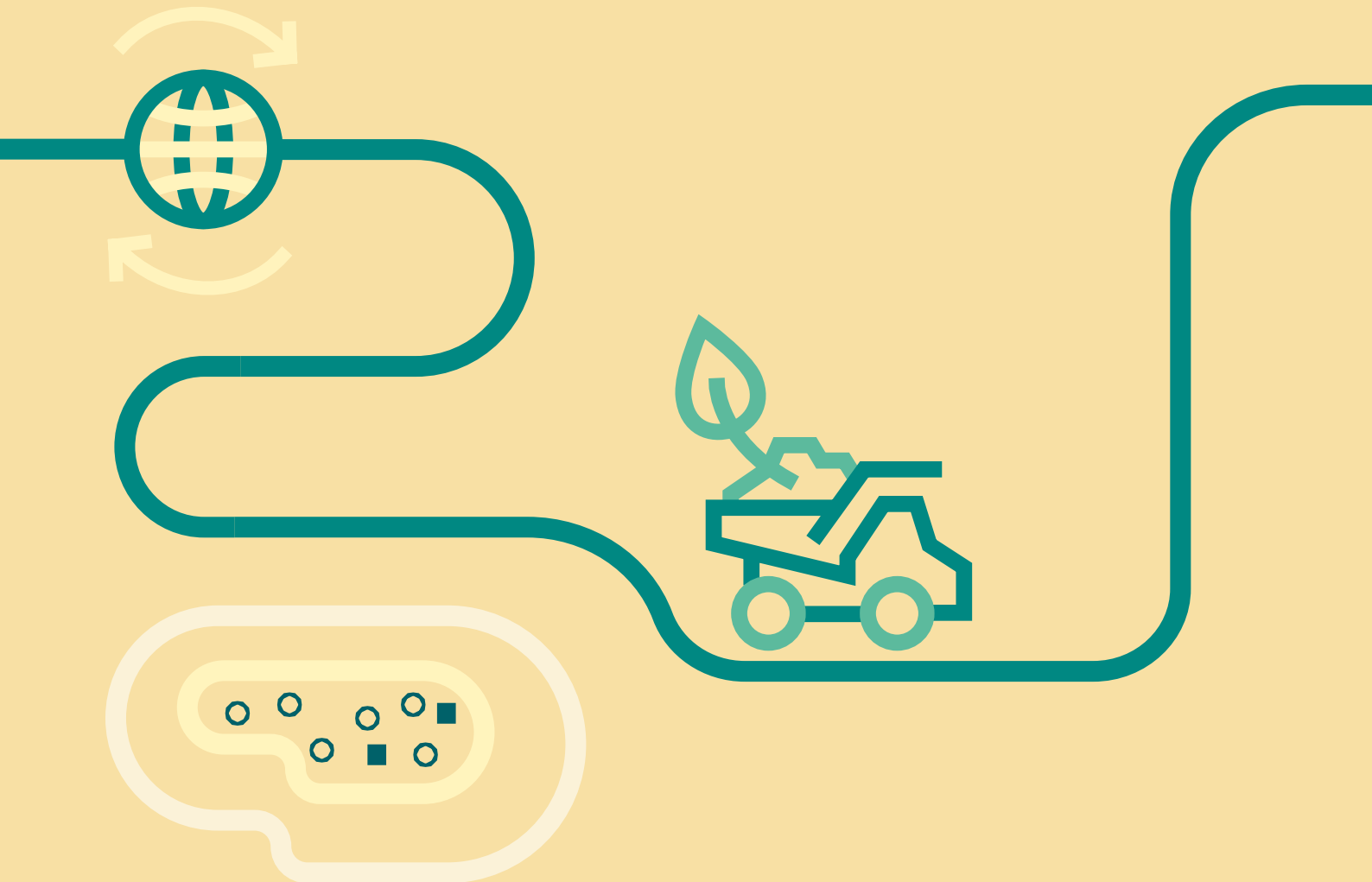
For the first category, Eksfin can finance investments in mines in Norway if the mine exports the majority of the minerals (>50% of the growth in turnover) or if the company supplies an operator that exports a corresponding share. It is also possible to finance the purchase (import) of critical minerals that ensure export-oriented production in Norway. Eksfin also furnishes guarantees for loans for working capital, both for general, export-oriented production and relating to specific export contracts.

It can also provide financing to procurers of Norwegian equipment to be used in mining projects abroad. Furthermore, guarantees can be furnished for deliveries and advances in connection with exports of minerals elsewhere in the value chain. Support is also available to sub-contractors for investments in mines, including those abroad, and for projects that involve climate-friendly investments with export potential.

4



The Government's five focus areas for a forward-looking mineral policy



1. Norwegian mineral projects must be implemented faster



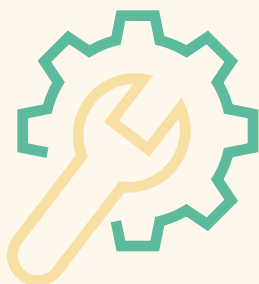
Faster realisation of new mineral projects

The challenges associated with access to critical raw materials necessitate a boost to help realise mineral projects, including to consider measures that can more appropriately facilitate projects for the extraction of critical raw materials. Long and complicated permitting and development processes, risks and insufficient information about relevant risk factors are among the key challenges facing these projects. As a result, it can also be challenging to raise capital.

The Government believes it is crucial to implement measures aimed at critical raw materials. A fast-track procedure for critical mineral projects was therefore launched towards the end of 2022 whereby DMF will give priority to critical minerals in its consideration of applications under the Minerals Act and establish a national coordination system for critical

minerals projects. Furthermore, the Geological Survey of Norway will focus on exploration and surveying activities aimed at critical raw materials by focusing more of the mineral mapping into areas where there is reason to believe deposits of these materials will be found. In addition, the Geological Survey of Norway should prioritise making geological data available to potential projects for the exploitation of critical raw materials. In the National Budget 2023, the Geological Survey of Norway received an additional NOK 10 million to increase mineral mapping. In addition, NOK 10 million was allocated to further mapping in the revised national budget for 2023.

In NOU 2022:8 on the new Minerals Act, the Minerals Act Committee proposed amendments to the existing Minerals Act, the Planning and Building Act and the Motor Traffic Regulations to facilitate efficient exploration processes and permit procedures for mineral extraction. The Government will consider the need for regulatory changes to facilitate more streamlined permitting procedures while safeguarding the considerations the legislation is intended to ensure.



We will carry out more mapping, provide better guidance and process applications more rapidly.

The Government is committed to ensuring progress in Norwegian critical raw materials projects. Considerable time is spent on mineral projects from the discovery of a resource to extraction can start, and the same is true in every country. This is to a large degree because thorough documentation is needed to raise funding during the exploration phase, which in turn requires a significant amount of geological data. The development of the projects and the need for geological mapping require considerable work over time.

In addition, the permitting procedure can take time. Several permits are required during the development of a mineral project and for extraction to start, and it is demanding for both the project promoter and the public authorities to ensure efficient permit procedures in the least possible time.

The European Commission's proposal for a regulation under the Critical Raw Materials Act (CRMA) suggests a need for changes in the permitting procedure for critical raw materials extraction projects. Separate rules and special deadlines will apply to strategic projects. The Government considers it important that Norway takes a proactive approach when it comes to assessing the implications for Norwegian legislation and how we can best facilitate the realisation of critical mineral projects.

The Directorate of Mining and the Geological Survey of Norway together provide information about geology, mineral resources and mineral rights that are necessary in the local and regional authorities' work on land use management. The Government will therefore ask the Geological Survey of Norway to implement the United Nations Framework Classification (UNFC), which will contribute to a more uniform classification of resources, in line with those used in many other countries, including the EU member states. The Government considers it essential that targeted efforts are made to further develop the tools so that they can ensure that mineral resources and the possibility of future extraction are properly assessed in land use management processes.

The Government also wants to establish a 'mineral compass' that will make information better available to the project promoter and those affected by mineral activities about circumstances that may require adaptation or constitute risk factors for projects. Examples include information about nature, competing industries or cultural heritage. This will ensure that project promoters and public authorities have the best possible knowledge base when projects are planned and implemented.

The Fen area in Nome municipality contains one of the most interesting deposits in Norway and has attracted a great deal of international attention. Fen has the potential to become a very important project for Norway. At the same time, special measures may be needed to ensure rapid progress for potential extraction. Based on this, the Government will seek a closer dialogue with Nome municipality to look at how the central government can contribute expert resources and capacity to ensure the plans for possible future extraction of rare earth elements in Fen make headway.

THE GOVERNMENT PROPOSES THE FOLLOWING MEASURES:

- ✧ Reduce processing times and facilitate streamlined permitting procedures for mineral projects through stronger coordination of permitting and more coordinated, parallel procedures for official permits.
- ✧ As soon as possible, consider whether the proposal for the Critical Raw Materials Act (CRMA) is EEA relevant. A final decision on whether the Act is EEA relevant can only be made once it has been officially adopted.

- ✧ Consider the need for changes in relevant regulations relating to the extraction of critical raw materials and strategic projects for extraction within the scope of the Minerals Act. The need for regulatory changes will be considered during the follow-up of the Minerals Act Committee's report.
- ✧ Follow up the Committee's report with a view to facilitating a more forward-looking framework for mineral activities. The Government will consider the need for better coordination between the Minerals Act, the Motor Traffic Act and the Planning and Building Act. The work should be seen in the context of the follow-up of the Motor Transport Committee's recommendations and the provisions of the CRMA on permitting procedures for critical raw material projects.
- ✧ Designate the Directorate of Mining with the Commissioner of Mines at Svalbard (DMF) as the 'national competent authority' responsible for facilitating and coordinating the permitting procedures for critical and strategic metals and minerals projects (one stop shop) within the scope of the Minerals Act.

- ✧ Give priority to applications for strategic and critical metals and minerals projects, projects with minimum environmental impact, including harm to nature, and projects where extractive waste can be utilised, or where backfilling is used as disposal solution.
- ✧ Ensure that the Geological Survey of Norway gives priority to mapping in areas that are considered to have critical mineral potential, and increase the availability of geological data from such areas.
- ✧ Strengthen NGU's work on mineral mapping aimed at critical metals and minerals and complete the geophysical surveying of Norway. The Geological Survey of Norway will be commissioned to design its own mapping programme aimed at critical metals and minerals.
- ✧ Change exploration permitting procedures to facilitate more efficient exploration, and a better system for reporting and disseminating data and measurements.
- ✧ Commission the Geological Survey of Norway to implement the UNFC standard in the national resource databases in order to strengthen the strategic knowledge base on geological, social and economic conditions for known mineral deposits.
- ✧ Establish a 'mineral compass' – a tool that will provide better information to mineral stakeholders about conflicts of interest, help reduce the level of conflict and increase predictability for all parties.
- ✧ Increase dialogue with Nome municipality about speeding up land use planning for the Fen area. Key elements will be the establishment of a collaboration with DMF and how the central government can contribute expert resources and capacity to ensure progress in the plans for the extraction of rare earth elements in the Fen deposit.
- ✧ Consider how the allocation and management of exploration and extraction rights in the Fen deposit can best support the overall development of the area, while respecting existing rights and the development of extraction projects.
- ✧ Further develop tools that can provide better information about geology, mineral rights and mineral resources in land use management.
- ✧ Facilitate efficient municipal land use management processes relating to the establishment and decommissioning of mineral activities. To the extent possible, no plans should be made for mineral activities that conflict with climate and environmental interests of national or significant regional interests.

- ✧ Take steps to ensure that mineral resources are sufficiently addressed in land-use planning and through central government planning guidelines.
- ✧ Clarify expectations of the county authorities' work on mineral management including disposal in its role as the regional planning authority and expert adviser.
- ✧ Commission the Research Council of Norway to consider the need for competence building and research relating to:
 - Exploration for and extraction of critical minerals
 - Development of a value chain for rare earth elements and permanent magnets
 - Development of technologies and methods that can lead to more efficient extraction and processing, including methods of operation, and technology that reduce the impact on biodiversity and the ecosystem to a minimum
 - Automation and electrification of mining
- ✧ Aim to strengthen the capacity of the power grid and thereby facilitating access to electric power for new mineral projects.

2. The Norwegian mineral industry must contribute to the circular economy



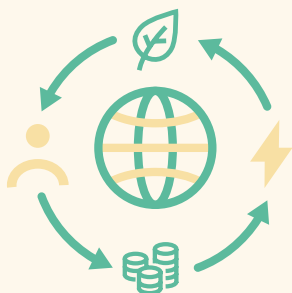
The Norwegian mineral industry must contribute to a more circular economy through increased resource utilisation and by reducing the need for disposal to a minimum

Long-term, sustainable management of resources is a fundamental principle underlying the Government's industrial and environmental policy. A more circular economy ensures that the value of materials, products and resources is maintained in the economy as long as is practically and economically feasible and, where possible, that they are fed back into the production chain at the end of their lifecycle, thereby minimising the generation of waste. Better utilisation of resources is essential to reduce negative climate and environmental impacts to a minimum. To achieve the goal of a more circular economy, it is important to establish an updated knowledge base that considers the potential for reuse and advanced material recycling of resources, and looks at barriers and opportunities to facilitate flows of secondary raw materials,

especially for critical raw materials in the Nordic countries and Europe.

The Government's ambition is for Norway to develop the world's most sustainable mineral industry. This means we also have high expectations of the companies involved, and that they, in their work on environmental management, waste management, circular economy and their relationship with the surroundings and those affected, endeavour to be at the forefront of their field and to continuously improve their own sustainability performance. A prerequisite for sustainable mineral activities is that the amount of extractive waste is kept at a minimum within the framework of what is feasible. The Government believes it is reasonable to expect the industry in both new projects and existing operations to make use of available funding instruments in research, development and innovation to reduce the need for disposal of extractive waste. At the same time, minimising extractive waste requires time and effort to develop solutions and markets, as well as expertise in the companies.

Almost all mineral extraction generates extractive waste of little commercial value, but the degree of utilisation and the volume of waste material vary. In 2021, companies in the mineral industry extracted a total of 124 million tonnes of mineral raw materials.



The world must become more circular.
We must utilise as much of the extracted
materials as possible.

About 20.5 million tonnes of this material was not marketable. The proportion and types of extractive waste vary between the sites. Roughly speaking, all mineral activities generate extractive waste in the form of soil/clay and coarser and finer fractions. The waste will have different mineralogical compositions, contain different grain fractions and have different chemical and physical properties. As a rule, coarse fractions are easier to use for other purposes than fine-grained fractions. At the same time, coarse fractions impose fewer challenges if they are to be disposed of, since they are stable, less reactive and cannot be transported from the disposal site area by wind or runoff. In addition to extractive waste from mineral activities, significant amounts of coarse rock are extracted from transport and construction projects. Approximately 19 million tonnes of rock are produced annually from tunnel operations in Norway.¹³

In some cases, the extractive waste can be used for other purposes. Coarse rock can be used on site for road construction and other infrastructure or sold for use as fillers, for road construction purposes or exported to other countries. Alternative applications will depend on the properties of the specific material. The decisive factors for whether there is a market for such material are the volume of extractive waste

from the operation, the transport distance to markets or potential places of use, as well as the composition and properties of the material. In many cases, developing new markets for new products themselves can be demanding for the companies and entail significant costs. There may nonetheless be significant gains for companies that succeed in developing new products and markets or new business models that enable better utilisation of extractive waste. In order for a waste material market to function, sufficient information about planned mass extraction will be required.

The management of residual material and the creation and follow-up of disposal solutions entail extensive costs. Companies developing mineral projects will therefore consider the possibility of commercial exploitation of as much of the material as possible. One relevant policy instrument to promote the development of new solutions that do not necessitate disposal is to require the project promoter to draw up a circular business plan that includes an assessment of the possibility of using or selling all extracted material.

To avoid unnecessary extraction, the companies will also be required to document the need to extract virgin resources, for example by demonstrating a demand for the minerals that cannot be met from recovery.

13 Kortreist stein, Sintef (2019) p. 4

The world needs to become more circular, and the main rule must be to use as great a proportion of the resources extracted from mining as possible. However, it will not be possible to find alternative uses for all types of materials. There will therefore still be a need to dispose of waste for which other applications cannot be found. Disposal sites are land-use intensive and often come into conflict with other land use. Disposal entails displacement of life in the area covered by extractive waste during the disposal period. Stringent requirements must therefore be imposed on disposal and the most environmentally friendly solutions must be adopted.

Waste from previous mining operations must also be seen in a circular perspective. Disposal sites from old mines may contain metals that were not technically possible to extract, or metals that were not relevant or profitable to extract when the mine was in operation. With newer technology, it may be possible to utilise more of the resources. The use of submarine tailings disposal should also be considered in a circular perspective as this form of disposal can make it more demanding to retrieve materials for new processing should technical developments or market conditions enable the extraction of additional minerals from the tailings. The first step should be to map tailing dams and landfills in Norway to facilitate possible future exploitation.

THE GOVERNMENT PROPOSES THE FOLLOWING MEASURES:

- ☀ **Appoint an expert committee tasked with assessing the advantages and disadvantages of different types of mine waste disposal in light of the development of new technologies, new methods and new international nature and environmental initiatives. The expert committee will also be asked to propose new environmental requirements for different types of disposal and consider the future use of submarine extractive waste disposal. The expert committee is scheduled to submit its recommendation in the form of a report by the end of 2024 at the latest.**
- ☀ **Require the amount of extractive waste to be kept at a minimum in all processes where feasible, based on the best available technologies and best available business models and operating and disposal methods.**
- ☀ **Require new mineral projects to present a circular business plan to reduce the amount of disposed material and contribute to better resource utilisation and less impact on nature.**

- ✧ Ensure that more consideration is given to hybrid disposal methods for finer and coarser materials.
- ✧ Require the project promoter to prepare plans for the annual reduction of extractive waste, use of chemicals and other environmental impacts.
- ✧ Avoid disposal of tailings if it is technically and economically feasible to use them as side streams in their own or another stakeholder's industry. If no such alternative use of tailings is believed to exist, it is necessary to report why, and what has been done to investigate the potential, before permission for disposal can be granted.
- ✧ Ensure that, before new projects are approved, the project promoter documents the need to extract virgin resources rather than reuse previously extracted resources and how the resources extracted can be included in circular value chains and business models.
- ✧ Strengthen the resource perspective in the Minerals Act to ensure that mineral resources are utilised optimally and that good assessments are made of the use of all materials extracted.
- ✧ Map and characterise the properties of tailing dams and landfills in Norway to facilitate possible future exploitation.
- ✧ Facilitate the development of marketplaces for raw materials for construction based on waste from mineral extraction, transport projects and construction projects with the aim of establishing a domestic market.
- ✧ Consider whether certification schemes or national or international standards for extractive waste can help develop marketplaces and new business areas.

3. The Norwegian mineral industry must become more sustainable



Norway will have the world's most sustainable mineral industry

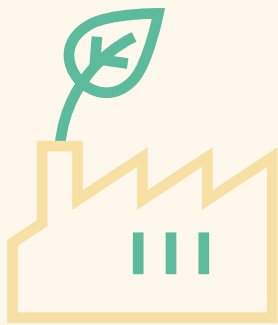
Society's expectations and requirements for mineral activities and other industry have increased over time, and today's companies are expected to comply with human rights and established principles for sustainable business conduct. There are also clear limits as to how much conflict with other interests is acceptable for individual projects. Mining projects will always have environmental impacts, and poorly planned and executed mining projects can have an extensive negative impact on human rights, the environment and safety. Lack of sustainability entails significant risks for society and investors. Going forward, we will develop green technologies, which means we must also use raw materials produced with due regard to social, economic and environmental sustainability. Norway is capable of playing a greater role to this end.

As it is individual companies that design the projects, the most important prerequisite for a sustainable mineral industry is that companies and the industry as a whole take significant responsibility. The authorities' responsibility is to establish stable and

predictable framework conditions for the industry, to facilitate efficient procedures, local support and to use and develop the range of business-oriented policy instruments available.

In order to ensure increased sustainability in the mineral industry in the future, priority should be given to projects that best safeguard considerations of nature and the environment through the use of technical solutions, technology and project design. Examples include projects where the need for waste disposal is reduced. Backfilling in quarries and mines can be a possibility in some cases, for example where operations have been terminated.

Norway pursues a stringent chemicals policy with a view to ensuring that pollution does not harm health and the environment, and to putting a stop to the use and release of substances on the national priority list. Many different chemicals are used in the mineral industry. Some metal and industrial extraction operations use chemicals in the separation process, or in connection with disposal. The environmental properties vary between different chemicals, and the overall environmental impact will depend on the combination of properties and volume. Companies have a duty to continuously assess whether the chemicals used can be replaced by more environmentally friendly alternatives. They should also continuously seek to reduce the use of chemicals. Today, the use and volume of chemicals in each individual permit is regulated by the Pollution Act.



Sustainable mineral production will be an important competitive advantage going forward.

It is important to ensure that efforts continue to be made to reduce the adverse environmental impact of the use of chemicals in the industry.

One of Norway's advantages as a mineral nation is an expedient framework for safeguarding social and environmental sustainability. However, a number of conflict-ridden cases concerning submarine disposal have given rise to considerable unrest, uncertainty and unpredictability for local communities, the mineral industry and environmental interests. It is in particular companies with plans to establish new submarine disposals that have attracted negative attention. This can affect public support for projects, the progress of permit procedures, access to funding and the industry's national and international reputation. In order to facilitate swift implementation of new critical raw material projects, it is important to generate support and avoid conflicts. There is every reason to believe that mineral projects that cooperate well with local communities and environmental organisations, that give high priority to sustainability, that implement circular business models and that reduce the need for disposal to an absolute minimum could be realised significantly faster and with fewer complications than other projects. This and other considerations may be relevant to include in the planning for operators that wish to establish new mineral projects in Norway.

Mineral activities are land-use intensive and generate a physical footprint that affects nature and the

surrounding environment. It is therefore essential that projects are planned with as little encroachments on land as possible, and that plans are made for the restoration of the area after operations have ceased. The Government will assign DMF the task of proposing relevant municipalities and the organisation of a pilot project for the establishment of a 'green mineral park'. This would provide experience of co-location of mineral extraction and industry or other business activities. Co-location can contribute to reducing the overall land use and environmental impact by coordinating mineral activities with other activities.

The mineral industry is a small industry that has traditionally had limited engagement in R&D activities. Much of the relevant innovation takes place externally, in the form of innovations in equipment such as machinery and vehicles. The use of zero-emission solutions through electrification is an example of innovations where the industry's ambitions are largely dependent on innovation in the equipment industry. There is a significant need for expertise, innovation and research-based development in the mineral industry. Continuous development work is needed in order to maintain and develop competitiveness. Research will be needed in many areas in the future, including in environmental and social sustainability, technology, waste disposal and extraction. There is also a need for more systematic knowledge of mineral activities and local acceptance, considerations of indigenous peoples, land use management and regulatory conditions.

Sustainable industry is dependent on the traceability of the origin and value chain of the raw materials to enable documentation of sustainability along the whole value chain. Sustainable mineral production is in demand by financial institutions, investors and customers across the value chain and is an important competitive advantage. Both producers and users of mineral raw materials are therefore developing systems for the documentation of sustainable value chains.

The Government believes it is of great importance to facilitate early and regular dialogue between the project promoter and those affected by a mineral project, such as Sami rights holders. Good coordination with local and regional authorities, county governors and government agencies can also help create a good framework for dialogue. In addition, the Sami Parliament and Sami organisations will play a role in establishing common rules of the game, providing advice to affected parties etc.

When the Minerals Act was adopted by the Parliament in 2009, an indigenous compensation scheme was established for Finnmark relating to extraction on the Finnmark Estate, in the form of an annual fee paid by operating mining companies to landowners. The Government believes that a similar scheme should be established throughout the traditional Sami area. The Government will return to the design of the scheme in the follow-up to NOU 2022:8.

THE GOVERNMENT PROPOSES THE FOLLOWING MEASURES:

- ☀ **Facilitate implementation of the United Nations Sustainable Development Goals by the Norwegian mineral industry.**

ENVIRONMENTAL SUSTAINABILITY

- ☀ **Facilitate the establishment of Norway's first 'green mineral park' in cooperation with one or more relevant host municipalities. The Government will provide more detailed criteria for what should be achieved.**
- ☀ **Actively contribute to the development of European emission regulations for mineral activities.**
- ☀ **Adopt a zero vision for the use of chemicals that are not environmentally certified.**
- ☀ **Commission the Research Council of Norway to obtain knowledge, identify research needs and identify challenges and opportunities relating to resource utilisation and use/disposal of waste from mineral extraction, including impacts on nature and wildlife, as well as completion of mineral activities and restoration of extraction areas for other purposes, including for reindeer husbandry and agricultural purposes. This with a view to identifying barriers and opportunities for developing the mineral industry in a more sustainable and circular direction. The work**

must take place in dialogue with the mineral industry and relevant expert communities.

- ☀ Aim for all new major projects to use zero-emission machinery and vehicles by 2030 and for the entire industry to use zero-emission solutions for new investments when technology so permits.

NATURE

- ☀ Ensure that new mineral projects entail as efficient land use and as little encroachment as possible, generate the least possible impact on nature and impose requirements on project promoters to restore the area as soon as possible.
- ☀ Ensure that potential subsequent use is planned from the start of mineral projects, so that previous mineral extraction sites can be used for other purposes, thereby reducing pressure on nature in other areas.
- ☀ Require project promoters to document that the solution that entails the least encroachment has been chosen within the scope of a feasible sustainable business model and that the project contains clear goals and measures for natural capital accounting and restoration.

SOCIAL SUSTAINABILITY AND SAMI INTERESTS

- ☀ Facilitate early dialogue in mineral projects, for instance through changes in the rules for exploration rights.
- ☀ Consult the Sami Parliament and Sami organisations on the proposals in NOU 2022:8 on the new Minerals Act with the aim of reaching agreement on proposals for legislation.
- ☀ Consider how the Minerals Act and pertaining regulations may provide for an indigenous compensation scheme for mineral extraction in traditional Sami areas, also outside Finnmark.
- ☀ Strengthen the competence of DMF relating to mineral activities in Sami areas.
- ☀ As part of the follow-up of NOU 2022:8, consider whether a dedicated guide on mineral activities in Sami areas should be prepared. The Sami Parliament, Sami organisations and the industry should be included in this work. It must also be considered whether the best solution to achieve this is through dialogue or the preparation of a joint guide.
- ☀ Consider the need for up-to-date knowledge about the impact of mineral activities on reindeer husbandry.

4. Norwegian mineral projects need good access to private capital



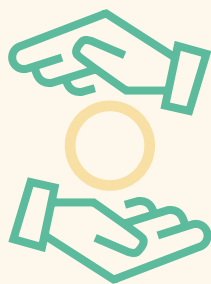
Good access to private capital for the development and realisation of profitable and sustainable mineral projects

The Government recognises the importance of ensuring a socio-economically profitable mineral industry. Access to capital will be essential for the realisation of more mineral projects in Norway. The mineral industry mainly finances projects through a combination of equity and loans, and the capital markets generally function as intended for the mineral industry. Projects aimed at natural stone and raw materials for construction are often associated with low uncertainty and are largely financed in the same way as other business activities. Industrial mineral and metal projects are associated with considerable uncertainty, long development cycles and considerable expenditure before investment decisions can be made, and substantial investments are often required. These factors combined make the financing of many projects demanding. A time horizon of 10–25 years is not uncommon, although in principle it is possible to realise a project and obtain the necessary permits in shorter time. One of the most important things we can do to increase access to capital for mineral projects is to help speed up procedures and reduce uncertainty.

Capital access for metal and industrial mineral projects is expected to be particularly demanding in the development phase leading up to an investment decision. Funding agencies have innovation and development support schemes that may be relevant. There are also relevant EU schemes, including innovation and development support for critical raw materials. When an investment decision is imminent, Export Finance Norway (Eksfin) and policy instruments at the Nordic and European level will be relevant for large-scale mineral projects. Eksfin can, for example, furnish long-term loans/guarantees for the establishment and expansion of mines both in Norway and abroad.

State ownership is used in some other countries to achieve goals relating to the establishment or safeguarding of value chains for minerals and metals. In Finland, the Finnish Minerals Group has adopted such a strategic objective. The Japan Organization for Metals and Energy Security (JOGMEC) is tasked with ensuring access to energy and metals for Japan and Japanese industry, and the policy instruments include ownership. Private ownership is and will continue to be the main rule in Norwegian business and industry. In the ownership report, which was adopted by a broad majority in the Norwegian Parliament, the Government set out the following rationale for state ownership:

- Head office functions in Norway
- Civil protection and emergency preparedness
- Energy and natural resources



The focus should be on profitable and sustainable mineral projects.

- Facilitating sustainable restructuring and increased value creation
- Infrastructure, monopolies and assigned rights
- Public goods and/or social and geographical distribution

The Government considers it important to utilise the full range of available business policy instruments, and will consider whether a state-owned mineral company or fund should be established to ensure profitable and sustainable development of critical raw materials.

Minerals and metals are important input factors in many products and processes we will depend on to implement the green transition. The Government has assumed that the need for risk mitigation for projects under the Green Industrial Initiative is extensive and growing. The Roadmap for the Green Industrial Initiative states that the Government will:

- Mobilise as much private capital as possible for the green transition, including through internationally competitive schemes for risk mitigation.
- Dimension the public policy apparatus to meet the growing need for guarantees and loans for green industrial projects. Increased risk mitigation requires good projects and a willingness to invest privately. The public policy apparatus estimates that the need for risk mitigation related to the Green Industrial Initiative may be in the order of NOK 60 billion by 2025.

The realisation of more sustainable, profitable mineral projects in Norway will require substantial investments. Private capital should be the main rule, but public funding instruments may be relevant for socio-economically profitable projects that are not realised. Any adjustments in policy instruments should be aimed at critical raw material projects that can help ensure security of supply to Europe and that are crucial in the implementation of the green transition. Which instruments to use must be considered in more detail and be seen in the context of, and adapted to, the work taking place at European level, such as the Critical Raw Materials Act and other measures aimed at promoting critical mineral projects. Profitable and sustainable mineral projects are important from both a Norwegian and a European perspective.

THE GOVERNMENT PROPOSES THE FOLLOWING MEASURES:

- ✨ **Consider whether a separate state-owned mineral company or fund should be established to ensure profitable and sustainable development of critical raw material projects.**
- ✨ **Facilitate a socio-economically profitable mineral industry. The Government will consider possible economic and industrial policy measures to stimulate increased extraction of critical raw materials, increased value creation in the mineral industry, more sustainable mineral activities and increased benefit for local communities from mineral extraction.**

5. Norway will continue to be a stable supplier of raw materials for green value chains



Through international partnerships, Norway will strengthen the framework conditions and increase the robustness of the Norwegian mineral extraction and mineral processing industry and value chains

Transparent, open, predictable, secure and sustainable supply chains for critical raw materials are essential to ensure the deployment of green energy production, green mobility and associated infrastructure at the rate necessary to achieve the global climate goals.

Norway shares a common geological history with Sweden and Finland, and the Nordic region has a tradition for different types of collaboration relating to geology and joint facilitation of mineral activities. A shared geological basis and other similarities, for example in relation to sustainability and human rights and regulation of high standards, mean that the Nordic region in many contexts can be seen as one mineral region. Collaboration on research, joint mapping products, joint data services and promotion of the Nordic resource potential are all examples of the results of Nordic cooperation aimed specifically at exploration companies and the investor communities.

The new battery industry largely sees the Nordic region as one region, and the Nordic countries together have the raw materials needed in green industry such as battery production. Nordic cooperation on raw materials access and industrial development provides shared opportunities for the Nordic countries and is one of the reasons why the Nordic Council of Ministers established the Nordic Sustainable Minerals programme in the period 2021–2024. The programme's vision is for the Nordic region to be the world's most sustainable and integrated mineral region by 2030.¹⁴

Since the launch of the European Raw Materials Initiative in 2008, the European Commission has focused attention on access to raw materials for European industry. The initiative came about as a solution to distortion in raw material markets and the risks this pose to European industry, jobs and value creation. Some of the instruments have been to facilitate production of raw materials, increased material recycling and substitution in the member states.

Norwegian mineral activities and the processing industry are integrated into the European market, and many of the raw materials and metals produced in Norway are exported to EU member states. The economic integration with the EU in the value chains for metals and minerals also means that any challenges the member states have in terms of mineral access will quickly be felt also among Norwegian

¹⁴ <https://www.nordicinnovation.org/programs/sustainable-minerals>

companies in the same value chain. The overall challenges for Norway and the EU therefore largely coincide, although various metals and minerals may be of particular importance for different countries, value chains and businesses. Based on cross-cutting challenges relating to the need for raw materials in future value chains, and especially the batteries value chain, Norway and the European Commission initiated a process towards establishing an a strategic partnership between the EU and Norway in 2022. Together with the EEA Agreement, the partnership will ensure cooperation on establishing and strengthening raw materials and batteries value chains. The industrial partnership will provide an important framework for cooperation with the European Commission on access to raw materials and the development of green industry.

The US initiated Minerals Security Partnership (MSP) is aimed at stimulating public and private investment in strategic mining, processing and material recycling projects with high sustainability standards. The partnership helps link investments to mature projects on the extraction of critical minerals and metals, either within the scope of the partnership or in third countries.

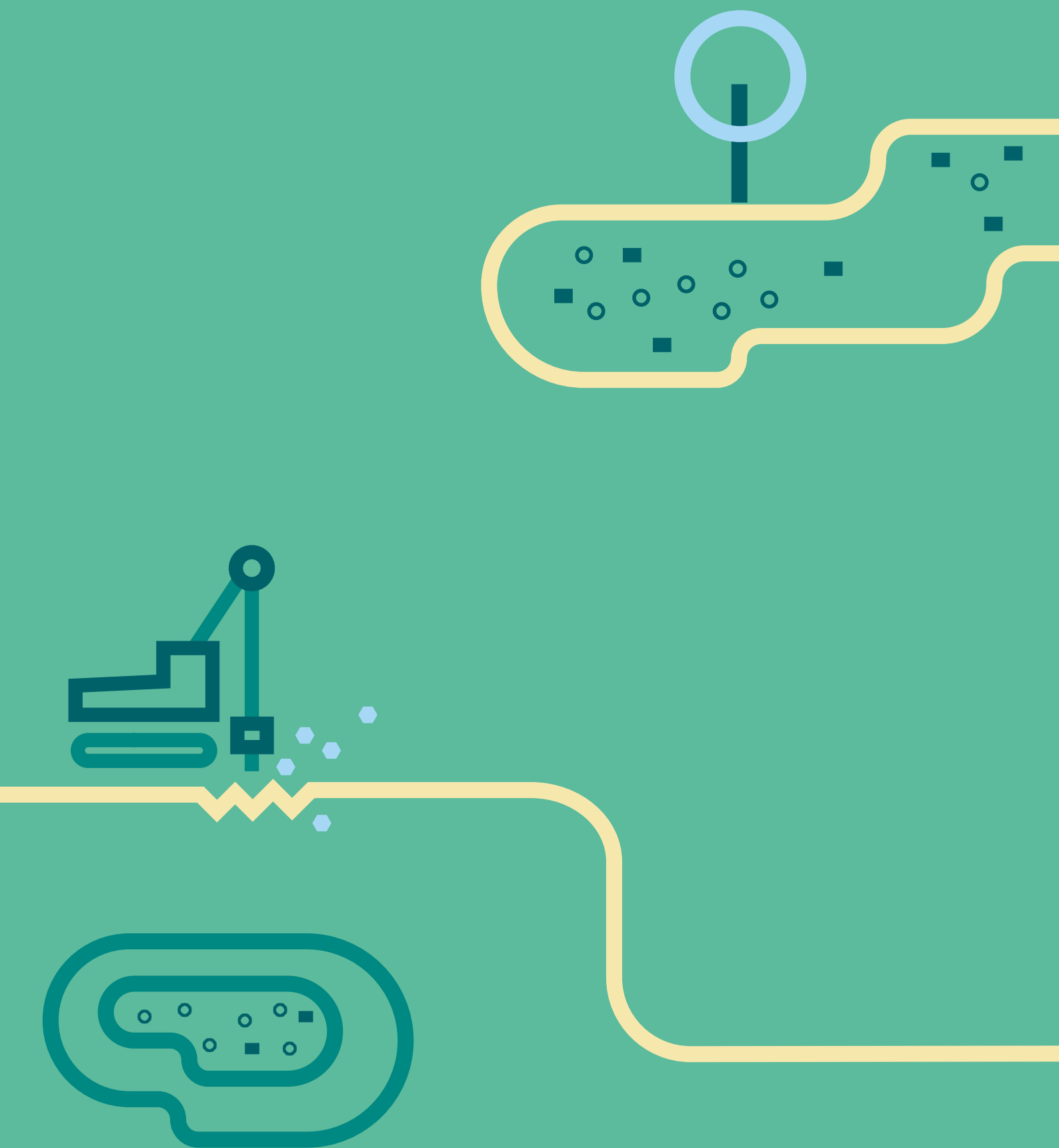
The collaboration is an arena for addressing the challenges associated with critical raw materials through dialogue, exchange of information and collaboration on the realisation of projects for the sustainable extraction of critical raw materials.

THE GOVERNMENT PROPOSES THE FOLLOWING MEASURES:

- ✧ Strengthen the long-term cooperation with the EU and European countries on the development of strategically important mineral and material production in Norway and Europe in general.
- ✧ Work to strengthen Nordic cooperation within the framework of common sustainable value chains based on Nordic mineral extraction.
- ✧ Work to ensure that Norway's participation in the Minerals Security Partnership promotes the development of more sustainable supply lines, and creates opportunities for further development of the Norwegian mineral, processing and recycling industries.
- ✧ Ensure that Norway's resource potential and opportunities for investment in sustainable mineral projects are promoted among international exploration and mining industry stakeholders.
- ✧ Contribute to initiatives and international cooperation to strengthen access to sustainable critical raw materials and improve the traceability of minerals.

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