

Greenland's oil and mineral strategy 2014-2018



Government of Greenland
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1 Preamble

The Government of Greenland wishes to promote the prosperity and welfare of Greenland's society. One way of doing so is to create new income and employment opportunities in the area of mineral resources activities. The Government of Greenland's goal is to further the chances of making a commercially viable oil find. In addition, Greenland should always have five to ten active mines in the long term.

An implementation of the recommendations of this strategy in the period from 2014 to 2018 would be a major step in the right direction. At the time of writing, it looks as if three to five mines may be opened in the period from 2014 to 2018, and it is estimated that every second year there will be one to two offshore drilling projects. The strategy initiatives will either contribute to achieving this level of activity or are based on the assumption that the level will be realised before the end of 2018.

The focus of the most recent strategy was to maintain a high level of oil/gas and mineral exploration activity. The goal was to further the chances of making commercially viable oil or gas finds and to incentivise the mineral resources industry to obtain exploration and exploitation licences. This focus is maintained and also further developed.

The strategy also points to the need to increase our efforts to ensure the best interaction possible between the mineral resources sector and other parts of our society (training, labour market, infrastructure and the health and social sectors). The Government of Greenland believes that it is important that all of us contribute to a sustainable development of the area of mineral resources activities. The strategy therefore also focuses on how to ensure that the opening of new mines will benefit our society the most in the form of new jobs and increased income.

In that connection, an important intermediate goal of the strategy is to set up our own national geological GeoSurvey Greenland (GSG) within the strategy period.

Another important intermediate goal of the strategy is to have the Mineral Resources Act amended to allow environmental protection in the context of mineral resources activities to be separated from and thus handled independently of the general mineral resources authority under the Ministry of Environment and Nature. Steps will be taken to further accumulate competences in the advisory activities of the Greenland Institute of Natural Resources in the area of mineral resources activities.

The development must be sustainable and must therefore take place with the greatest possible respect for our environment and nature and not least for all of us living in Greenland.

We wish you happy reading.

Ministry of Industry and Mineral Resources and Ministry of Environment and Nature

Jens-Erik Kirkegaard

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2 Summary

Introduction: The mineral and hydrocarbon strategies expired at the end of 2013. There is therefore a need for a new strategy in the period from 2014 to 2018 to offer new specific proposals as to the direction in which Greenland should go the next five years. The strategy will also identify the areas which should be strengthened in order to support the development of the area of mineral resources activities.

The strategy contains a number of new initiatives in the following areas:

- Oil/gas
- Minerals
- Taxation
- GeoSurvey Greenland
- Sustainable development (Environmental protection, Is the infrastructural framework aligned to the needs of the mineral resources industry?, Labour market/employment, Training, Health and social sectors and Citizens, local community and stakeholders)

The focus of the strategy is on the new initiatives to be implemented by 2018.

The Government of Greenland's goal with the mineral resources sector is clear. It wants to promote prosperity and welfare by creating new income and employment opportunities in the area of mineral resources activities. More specifically, the Government of Greenland's long-term goal is to further the chances of making a commercially viable oil find – and that there are always five to ten active mines in Greenland in the long term. Mining activities of this scale will provide tax revenues of more than DKK 30bn over the next 15 years. The potential of an oil find may be much larger. Based on the current assumptions, the establishment of two oil fields – a 500m barrel field from 2020 and a 2bn barrel field from 2025 – would generate more than DKK 435bn to the Mineral Resources Fund until 2060.

An implementation of the recommendations of this strategy in the period from 2014 to 2018 will be a major step towards achieving our long-term goals. Our best estimate at this point in time is that three to five mines may be opened within five years and it is estimated that one to two offshore drilling projects may be established every second year.

The focus of the most recent strategy was on maintaining a high level of oil/gas and mineral exploration activity. The purpose of this focus was to increase the chances of making new commercial oil or gas finds. And the same will apply for applications by the mineral resources industry for exploration and exploitation licences. This focus must be maintained and also further developed.

The new strategy further focuses on royalty models, the establishment of a geosurvey in Greenland and, broadly, on sustainable development in terms of the environment, training and employment. Infrastructure challenges are also addressed on a separate basis, and active citizen and stakeholder involvement are central new objectives.

2.1 Oil/gas

Status: The current strategy of the Government of Greenland entitled "Exploration and exploitation of hydrocarbons in Greenland – Strategy for licence policy 2009" expires in 2014.

A central element of the strategy has been the preparation and conduct of oil/gas licensing rounds. The licensing rounds have been carried out since 2002 at intervals of almost two years. In addition to licensing rounds, specific areas have been designated so-called open door areas.

Over the years, a number of licensing rounds and open door procedures have been held. This has resulted in a large number of exclusive licences being granted for oil/gas exploration and exploitation activities in Greenland.

New objectives 2014-2018

In the Government of Greenland's view, the licence strategy for oil/gas pursued so far has attained its goal of cultivating and maintaining industry interest in oil exploration activities in Greenland. The Government of Greenland's objective is to carry on its efforts to attract private investments in oil exploration activities in Greenland. The Government of Greenland's objective is to have oil exploration activities in different regions of Greenland. The current licence level is regarded as satisfactory.

In order to maintain the current level of activity, it will be necessary to offer new licence areas on a continuous basis to replace the licence blocks which will be relinquished over time.

In the period from 2014 to 2018, the Government of Greenland will conduct licensing rounds or open door procedures for the following areas of particular geological interest:

- Baffin Bay
- Davis Strait, west of Nuuk
- Jameson Land
- Nuussuaq Peninsula
- South Greenland and South-West Greenland

In the period in question, licensing rounds are expected to be conducted at intervals of two or three years. In relation to the previous licensing rounds, there will be a difference. Until now, licences have been granted for blocks of 10,000 square kilometres or even larger. The Government of Greenland proposes instead to license off smaller blocks of 1,000-4,000 square kilometres each. And each smaller block should contain at least one attractive target for exploration.

2.2 Minerals

Status: The development in the number of licences granted has been steadily increasing throughout the strategy period from 2009. In addition to the traditional licences (exploration, prospecting and exploitation licences), a new type of licence has been introduced: the small-scale licence. This licence type is typically granted to private collectors of gemstones.

Not only has the number of licences increased. The companies' exploration expenses have also increased over the years, from 2002 to 2012 – culminating in 2011.

When selecting an area for exploration activities, the mineral company will base its decision on a number of parameters. The most important parameters for investment in mineral activities in a given country are as follows:

- Geological potential and prospects (metals and minerals)
- Legislative environment
- Fiscal conditions
- Institutional factors and framework conditions
- Political stability

For the very same reason, the overall goal of the mineral strategy 2009-2014 was to: accumulate geological knowledge and increase specific knowledge about attractive geological areas of mineral occurrences in Greenland. These data were to be used in marketing activities aimed at potential mineral companies in the hope that they would apply for an exploration licence and subsequently an exploitation licence in Greenland.

The strategy had a special focus on the areas of limited geological data. One of the areas was South Greenland in general. The result has been a considerable increase in our geological knowledge about the southern area in question during the period. Another focus area was North Greenland.

New targets for government survey programmes – 2014-2018

The new targets have been determined based on global mineral demand.

In this context, iron ore, gold and copper are the most important minerals with regard to market value. This is positive – for Greenland, since we have large resources of those minerals.

In the mineral section of the strategy, the focus will be on high-volume metals/ore/gemstones – and on special metals such as rare earth elements, i.e. the following:

- Iron ore, copper and zinc
- Rare earth elements
- Gold
- Gemstones

In the new strategy period, we will continue to map the geographical distribution of metal occurrences and the potential and size of new occurrences. An obvious example in this context would be the zinc potential of North Greenland. It is proposed to make a licence for exploration activities north of 81° N available on special terms.

2.3 Taxation model for mineral resources

In order to obtain the best basis for the decision as to which taxation model to apply for Greenland, a benchmark analysis was carried out, comparing different countries' taxation models for mineral resources extraction. This analysis therefore makes it possible to determine how competitive the different countries are.

Against this background, the Government of Greenland recommends different tax models for the following mineral resources:

- Oil and gas: Corporate/withholding tax at the rate applicable from time to time. In addition, a 2.5% royalty on turnover will be introduced, as well a surplus royalty of

respectively 7.5%, 17.5% and 30%, which will be payable when accumulated revenues exceed accumulated expenditure etc. by 35%, 45% and 55%, respectively. At the same time, a Self-Government-owned company (Nunaoil A/S) is retained with a share of 6.25%, as a carried partner in the exploration phase.

- All metals and minerals except for uranium, rare earth elements and gemstones: Corporate/withholding tax at the rate applicable from time to time. In addition, a 2.5% royalty on turnover will be introduced and the corporate/withholding tax will be deductible against the calculated royalty.
- Rare earth elements: Corporate/withholding tax at the rate applicable from time to time. In addition, a 5% royalty on turnover will be introduced and the corporate/withholding tax will be deductible against the calculated royalty.
- Uranium: Corporate/withholding tax at the rate applicable from time to time. In addition a 5% royalty on turnover will be introduced.
- Gemstones: Corporate/withholding tax at the rate applicable from time to time. In addition, a 5.5% royalty on turnover will be introduced, as will a 15% surplus royalty based on gross profits in excess of 40%.

2.4 GeoSurvey Greenland

For a long period of time, Greenland's mineral resources have attracted considerable foreign interest – an interest which is sure to continue. As a result of this interest, the Government of Greenland recommends setting up a GeoSurvey (GSG) in Nuuk for mineral exploration and mining development activities.

The GSG will be tasked with safeguarding Greenland's interests within geological, geophysical and geochemical data collection and storage of those data for the benefit of developing Greenland's mineral resources as well as heightening awareness of Greenland's mineral resources potential by means of marketing activities. Geological data will be stored in databases and will thus be Greenland's archive for information of new as well as old data of great interest to society and industry.

The institution will thus contribute to an active use of geo-data to promote efficient and sustainable management of Greenland's mineral resources and environment. The GSG will provide geological advice to public authorities on mineral resources questions and assist in the regulatory tasks to be carried out in this area. In addition, the GSG will be a national geological data centre making data and knowledge available to authorities, educational institutions, businesses and private individuals both at the information level in the form of marketing activities and on commercial terms.

The plan is to realise the GSG project in the strategy period, where the GSG will be an item on the Self-Government's budget. The current five-year agreement with the Geological Survey of Denmark and Greenland (GEUS) expires at the end of 2014. The plan is to make the GSG an independent institution under the Self-Government, having the status of a state company. This means, among other things, that the GSG can participate in national and international research programmes and receive grants from research funds.

Specifically, the GSG is to carry out a broad range of functions:

- Geo-mapping activities (collection of geophysical and geochemical data)
- Laboratories (study of the geology collected)
- Databases (storage of geophysical data)
- Communication of information (sharing information with the general public about the country's minerals and hydrocarbons)

2.5 Sustainable development

The Government of Greenland recommends ensuring that the mineral resources sector undergoes sustainable development in a broad sense and with regard to the environment and society as well as economically. The areas cover the infrastructural framework, the labour market and employment, training, environment and the health sector and various other areas. The novel feature in relation to the former strategy is that these areas are to be integrated to a larger degree in the development of the establishment of a mineral resources sector. The above-mentioned areas contribute to getting the most of Greenland's mineral resources – and minimising any risks involved in developing the mineral resources sector.

2.5.1 Environmental protection

Following the amendment of the Mineral Resources Act, the responsibilities of the former Bureau of Minerals and Petroleum as per 1 January 2013 have been divided among the Ministry of Industry, Mineral Resources and Labour, the Mineral Licence and Safety Authority and the Environment Agency for Mineral Resources Activities.

The Environment Agency for Mineral Resources Activities is responsible for environmental protection in a broad sense in the area of mineral resources activities, including for issuing guidelines for environmental impact assessments, protection of vulnerable natural resorts, protection against pollution and protection against negative climate impact.

The Environment Agency of Mineral Resources Activities works in close co-operation with the Danish Centre for Environment and Energy (DCE) under the Aarhus University and the Greenland Institute of Natural Resources (GINR) to provide scientific advice concerning environmental protection in the area of mineral resources activities.

In the strategy period the Mineral Resources Act will be amended to provide a clearer and more transparent division of competences between the environmental authority and the licensing authority, and the sets of rules applying to environmental protection will be developed, as will the co-operation with DCE and GINR, including among other things a transfer of competence to GINR.

2.5.2 Is the infrastructural framework aligned to the industry's needs?

At the infrastructural level, there are a great number of challenges to the mineral resources companies which need to be addressed. The challenges are as follows:

Financing infrastructural facilities; energy supply to the sites of the mineral resources companies; air transport to and from the companies' mines and oil rigs; harbours: the main part of all goods in Greenland is transported by sea. It will be a challenge for existing harbours to meet the needs of the increasing number of mines and oil rigs. This will place new demands on existing harbours; and telecommunications: mines have great telecommunication needs. And with the current telecommunications infrastructure, the

present level is not sufficient. An analysis must therefore be made to find out how mines can have access to the best telecommunications possible. In this context, one of the things which must be analysed is whether deregulation would be an option in this area.

2.5.3 Labour market and employment

The situation in the labour market is as follows: Unemployment must be fought with skill development initiatives focused on the mineral resources sector. The sector is expected in future to need unskilled workers who have undergone tailored mineral resources courses. At the level of semi-skilled workers, the sectors involved include building and construction, iron ore and metal, catering and cleaning as well as cargo. The major part of the courses may be offered by our industry schools, which must therefore be provided with the relevant resources to allow them to expand their course activities, both with regard to teaching resources/competences and with regard to facilities. In addition, workers' skills must be upgraded with regard to health and safety to comply with international standards applying to workers in the mineral resources sector.

2.5.4 Training

In continuation of the above, the mineral resources sector and related sectors may contribute to creating a large number of new jobs. For many unskilled unemployed workers, training is the road to good jobs.

Against this background, the Government of Greenland recommends ensuring that training and upskilling initiatives are better targeted at the mineral resources sector and related jobs, including also training programmes in the building and construction sector. Moreover, an effort must be made to create new apprentice and trainee jobs – this is a good way to expand the local labour force within these disciplines. It is therefore necessary to foster closer co-operation between the labour market offices under the local authorities, which are in contact with the unemployed, the businesses which are in need of labour and can implement on-the-job training programmes and the industry schools, which can provide the job-related courses.

2.5.5 Health and social sectors

Today, the healthcare system is geared to the needs of the local population – but not in a scenario where mineral resources activities are initiated in a given area and where foreign workers will supposedly be recruited from abroad to some extent, e.g. from Asia.

The important thing is therefore to ensure that the healthcare system will be able to meet the needs in the strategy period.

Furthermore, there is a need to clarify the economic challenges arising from the integration of a new industry into existing structures.

2.5.6 Citizens, local community and stakeholders

The development of the mineral resources sector requires broad popular and stakeholder support and support from the players who affect or are affected by the development set to take place in the mineral resources sector.

The changes caused by the development of the mineral resources sector are dramatic. They involve an adjustment of our entire way of organising society. Our educational institutions, local businesses and the public sector (the Self-Government and local governments) in particular must adapt to the new challenge to enable us as a society to make the most of the significant opportunities involved in further developing our emerging mineral resources sector. And, secondly, it requires each individual to adapt to the new requirements, challenges and opportunities.

Therefore, the Government of Greenland recommends a strengthening of the public consultation process by formalising form and procedure. This means, among other things, that citizens and stakeholders will be involved at an earlier stage in the process, a kind of pre-consultation, and that the consultation period will be eight weeks in each case. A proposal to amend the Mineral Resources Act has therefore been forwarded to the Parliament for consideration under FM14.

3 Introduction

The current mineral and hydrocarbon strategies expire in 2014. A new strategy is therefore needed, which offers new and specific proposals as to the direction which Greenland should take for the next five years. In addition, the strategy will also point out the areas which are in need of strengthening in order to support the development of the area of mineral resources.

Unlike the two separate strategies mentioned above, this strategy is rolled into one: Oil and mineral resources strategy 2014-2018.

The strategy contains the following areas:

- Hydrocarbons
- Minerals
- GeoSurvey Greenland
- Sustainable development (business structure, infrastructural framework, labour market/employment, training, environment, emergency response, health sectors and public involvement).

Each chapter (hydrocarbons, mineral resources and GeoSurvey Greenland) and each section (the individual sub-sections under the heading “Sustainable development”) of the strategy is structured so that it begins with a kind of status update, then follows the measures to be implemented until 2018 and it ends with a number of strategic priorities which must be delivered if the objectives of the strategy are to be attained.

The Government of Greenland’s goal with the mineral resources sector is clear. The goal is to promote prosperity and welfare by creating new income and employment opportunities in the area of mineral resources. More specifically, the Government of Greenland’s long-term goal is to further the chances of making a commercially viable oil find – and to have five to ten active mines in Greenland in the long term. Delivering the strategic priorities in the period from 2014 to 2018 will be a big step towards achieving our long-term objective. Our best guess at the moment is that three to five mines may be opened within the next five years, and it is estimated that one to two offshore drilling projects will be established every second year.

The focus of the most recent strategy was to maintain a high level of activity with regard to oil/gas and mineral exploration. The purpose was to increase the chances of making a commercial oil or gas find attractive and to ensure that new mines are opened. This focus is maintained and also further developed.

3.1 The socio-economic point of departure

In March 2011, the Tax and Welfare Commission issued its report entitled “Our wealth and welfare require action – now”.

The report pointed to a number of challenges in relation to the possibilities of preserving and expanding the welfare society. Comparing a number of basic parameters of income, income distribution, relative poverty, education and average life expectancy with the other Nordic countries, Greenland has a more skewed income distribution, a higher relative poverty rate, a less educated population and a lower average life expectancy. In 2008, average income per

inhabitant in Greenland (including the value of the block grant) was approx. 25% lower than average income per inhabitant in Denmark. Excluding the value of the block grant, the percentage in question was approx. 44%.¹

The report operates with a baseline from which the existing welfare system without improvements, the existing financing system and the present population prognoses are compared.

This baseline shows a structural deficit on the public finances which increases over the model's period until year 2030, where it reaches a level of 6% of GDP, amounting to almost DKK 1bn a year^{2,3}.

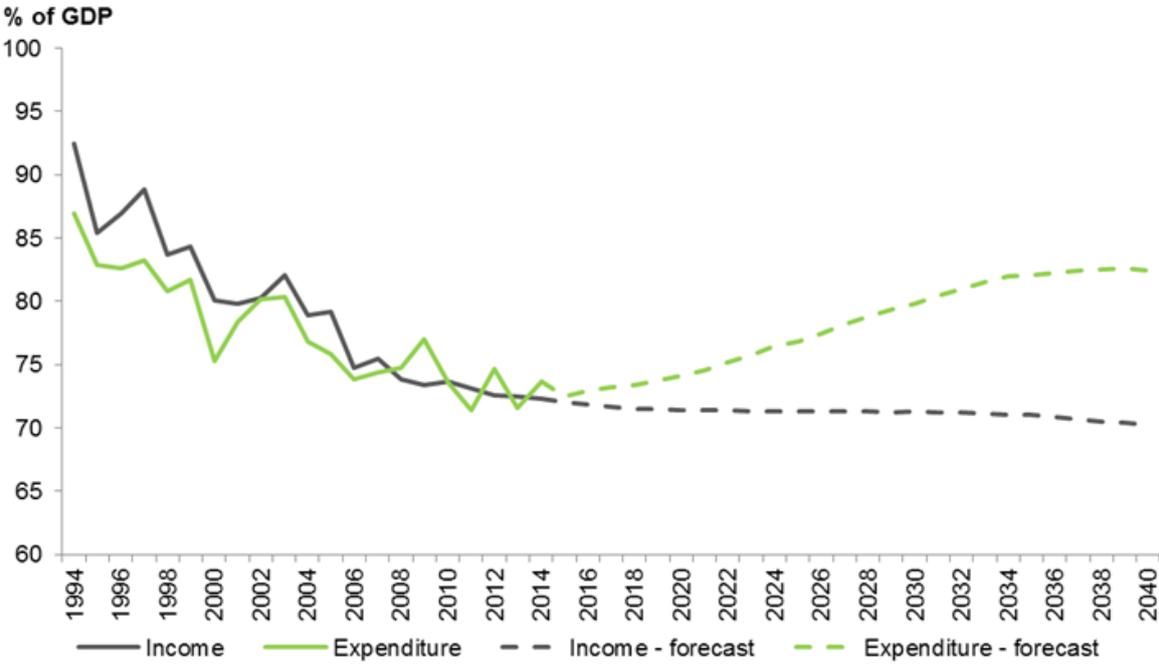


Figure 1: Socio-economic projection (the Tax and Welfare Commission).

The background to the structural deficit is a relative increase in number of senior citizens and a decrease in the workforce. This leads to an increase in public spending and a decrease in public revenues. At the same time, the development opportunities of the traditional trades are regarded by the Commission as being limited.

Obviously, such a scenario cannot be realised. And the report therefore points to a number of options which are available to society. The proposal of the report is naturally not an exhaustive list of options.

¹ The report of the Tax and Welfare Commission, p. 3 et seq.
² The report of the Tax and Welfare Commission, p. 9.
³ The report of the Tax and Welfare Commission.

The Tax and Welfare Commission recommended an overall reform package for the public sector in order to secure the foundations on which the welfare society of the future is to stand. The reform package has three main purposes. It should contribute to promoting prosperity and welfare. It should contribute to creating a more equal society. It should contribute to financing the welfare society. The Commission summed up the main elements of the proposed reforms in three crucial reform principles:

- Early prevention: a good childhood and good education
- Social balance and employment: safety net, job incentives and support
- Robust financing: a transparent and comparable tax system that supports employment

Together with other sectors, the mineral resources sector must contribute to financing the welfare society and must also be involved in the overall priority given to the different elements of the strategy at the political level. In the current economic climate, achieving the objective of increasing self-sufficiency is not realistic without substantially developing the mineral resources sector.

3.2 Demographic framework

An expansion of the mineral resources sector will contribute in the best way possible to the development of society, the more we succeed in employing national labour in the sector.

In recent years, the population has remained steady at approx. 56,000 people. In the past couple of years, this figure has decreased slightly. The reason is the relatively large net emigration rate – despite a relatively high fertility rate. Since 1995, net emigration has amounted to 7,019 persons – 6,623 of whom were born in Greenland and 396 of whom were born outside of Greenland⁴. A considerable number of emigrants were resource-rich persons.

If recent years' net emigration continues in the medium to long term, this will mean a very considerable loss of human resources for Greenland and may significantly limit the country's possibilities of increasing self-sufficiency. Net emigration therefore poses a very serious problem for Greenland.

⁴ Greenland Statistics.

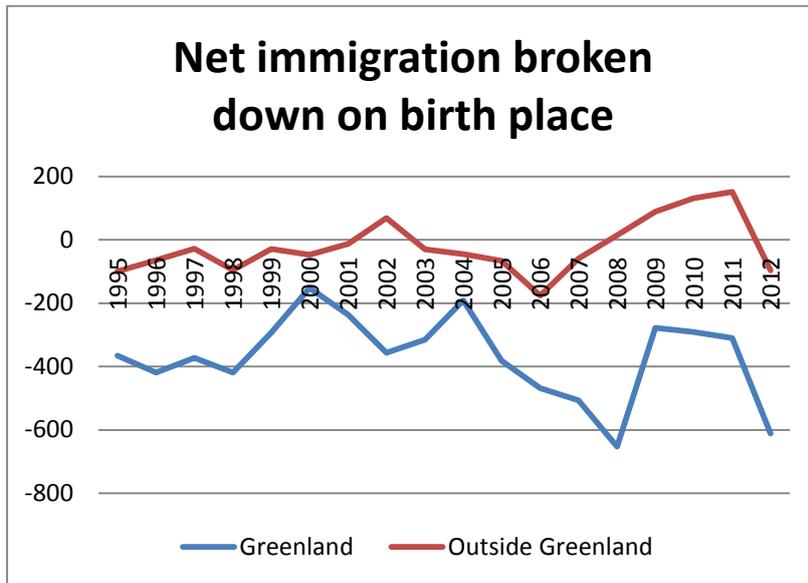


Figure 2: Net immigration and emigration, 1995-2012.

In addition to the prospects of the mineral resources industry in the long term attracting a portion of the workforce which has emigrated in recent years, it will be possible to a certain extent to free up labour from current employment as a result of efficiency improvements and productivity gains. Productivity gains of 1%, as estimated by the Tax and Welfare Commission, will thus free up approx. 300 full-time positions every year.

Apart from the above, a group of the unemployed workforce may also find employment in the mineral resources sector in the long term. For this group, a targeted effort is particularly important to ensure that the group receives continued and further training.

The development of the mineral resources sector will contribute to easing some of the structural challenges facing society, according to the Tax and Welfare Commission. It is unlikely that the sector will solve the structural problems by itself. However, a positive development in the mineral resources sector may contribute to economic growth and also provide well-paid permanent jobs. It will thus be possible to counter recent years' considerable net emigration.

Given the population situation, there will be a need to recruit skilled workers from abroad, particularly in the start-up phase of mineral resource projects which are very labour-intensive. The use of national labour in this period must be promoted, but the rest of society should not suffer substantial bottleneck problems as a consequence.

During the operational phase of the projects, it is important to achieve the highest possible employment rate of national workers. Those workers must be freed up from other employment by means of efficiency improvements and productivity gains, and unemployed workers should upgrade their skills to obtain employment in the sector.

A targeted effort to enhance the skills base of both the workforce and the businesses must therefore be supported. This goal will be underpinned by the special advisory programme targeted at businesses wanting to become subcontractors in the mineral resources sector. This programme was initiated in 2012 and will continue (for the time being) until the end of 2015.

It is also important to integrate into the overall programme a number of incentives for Greenlanders living in Denmark and elsewhere to return to Greenland to obtain employment in the mineral resources sector. This effort could be underpinned by targeted information campaigns combined with on-the-job training programmes.

3.3 How can mineral resources production reverse the trend?

In order for Greenland to fill the negative economic gap faced by the national economy at this point, it is crucial to stimulate private sector growth in order to create jobs, generate revenue and cause economic ripple effects in the economy.

So long as the mineral resources remain in the subsoil, they will create no value for Greenland. Conversely, active mining and/or oil/gas extraction activities will bring more jobs, more contracts and more revenues for the treasury.

Mining activities will also create indirect effects (subcontractors) and derived/induced effects (additional turnover in society).

Overall, the effects are contracts for Greenland businesses and the resulting profits, corporate taxes and other taxes levied from mineral resources companies and Greenland businesses as well as jobs, salary income, A taxes, etc.

The potential is much larger than the direct taxes

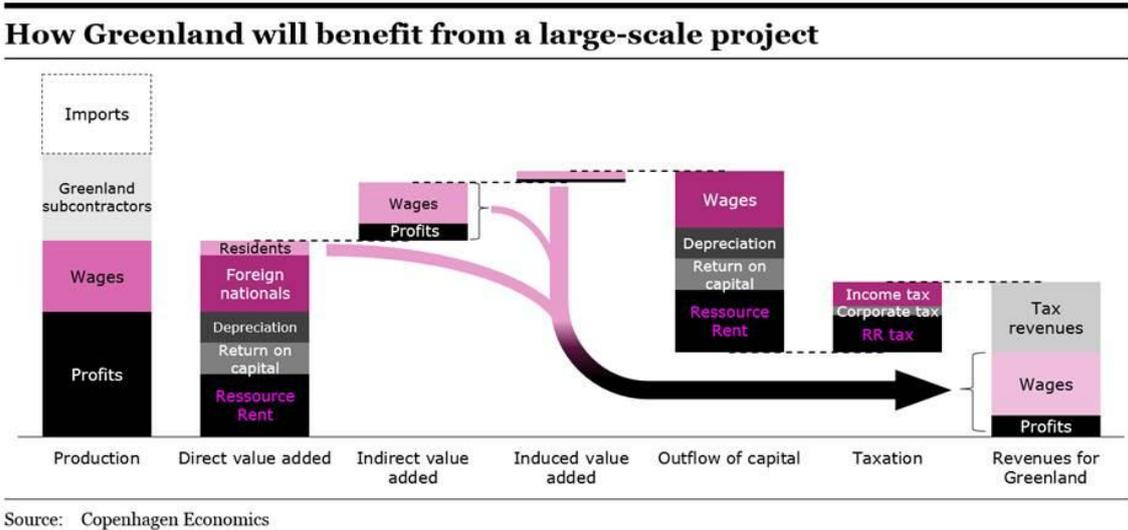


Figure 3: Development potential of mineral resources sector – framework diagram.

Economic rent is an excess payment made for a factor of production over and above what may be regarded as the normal cost of labour and normal return on invested capital. In the mineral resources sector, economic rent is income generated by, for instance, royalty and other mineral resources-specific taxes.

If the mineral resources sector is expanded, it will provide a long-term and stable source of employment for the workforce. In the mineral resources sectors, there will always be a demand for labour for areas such as transport, drilling techniques, blasting, services, maintenance, transport and catering. These are jobs which may be filled with Greenland labour, with a slight skills upgrade. These types of skills may also be useful in other sectors of industry.

It is not unrealistic that the number of mines in operation has increased in five years and that more than 1,500 people will be employed in proper mining jobs. Over a 15-year period, a simultaneous launch of these mining projects may generate more than DKK 30bn in tax revenues. Some of these revenues will go towards financing the expected phase-out of the block grant from Denmark. A very large part of the remainder will be tied up in the Mineral Resources Fund.

In the Tax and Welfare Commission's report, an estimate is also given of potential oil production revenues. The estimate is based on the computational assumption that a small drilling rig will be set up for a 500m barrel field from 2020 and a big drilling rig will be set up for a 2bn barrel field from 2025. Assuming that funds are available from the Fund to compensate for the reduced block grant, interest accrual of the Fund, etc., it is estimated that the Fund will have accumulated a capital of more than DKK 435bn by 2060.

These figures clearly show that the mineral resources sector may have an exceedingly positive impact on Greenland's economy. It is important, however, for the sector to develop in a way that ensures a stable socio-economic effect over time. This requires a certain volume in the activities of the sector.

To ensure a permanent basis for Greenland's economy, the long-term goal is to have five to ten mines and at least two oil fields in production.

3.4 The nexus between public finances and economic reform

Many and large-scale mineral resources activities may have a major impact on the labour market and the public finances. A gradual introduction of mineral resources activities will create the basis for gradually absorbing under-employed labour and thus boosting overall production.

If the important objectives for activities in the mineral resources sector are to be delivered, general economic reform is needed in order to strengthen labour supply and the skills base. A better trained workforce will in any case contribute to increasing output per person employed. Very tight control of economic policy is a precondition to succeeding in channelling labour and other resources over into the private production sector in order to limit the adverse effects that Dutch disease may have on other areas of the economy.

It is important that the resource strategy does not become a goal unto itself, but that mineral resources activities contribute towards achieving the general political and economic objectives in line with other sectors of society. A higher level of training and a general improvement in foreign language proficiency are a necessity if productivity is to increase in general, and may contribute to improving the national economy, whatever the level of mineral resources activity.

As part of its economic policy, the Government of Greenland will prepare an overall long-term viability plan. This plan will include issues such as tax revenues, economic rent taxes and accumulation of funds in the Mineral Resources Fund to secure long-term welfare. In its overall priorities, the viability plan must take into account the potential public spending and revenues caused by mineral resources activities, including administrative implications. A number of scenarios must be prepared for the expansion of the area of mineral resources activities, and the overall viability plan must be capable of cushioning unintended effects of various activities. This is intended to produce as stable a development in the overall activities as possible and thus a significant benefit for society and a high local participation rate in the projects. Moreover, it is important that financing decisions in relation to the area of mineral resources activities are co-ordinated with the general public debt and investment strategy.

4 Oil and gas

The Government of Greenland's current strategy "Exploration and exploitation of hydrocarbons in Greenland – Strategy for licence policy 2009" expires in 2014. A central element of the strategy has been the preparation and launch of oil/gas licensing rounds.

The licensing rounds have been carried out at intervals of almost two years since 2002. Apart from licensing rounds, specific areas have been designated open door areas.

Throughout the years, a number of licensing rounds and open door

procedures have been held. This means that a large number of exclusive oil/gas exploration and exploitation licences have been granted in Greenland. An exhaustive list of all licence holders is included as an appendix to the strategy.

What is an open door procedure?

In an open door procedure, the Government of Greenland designates an open door area which will be open for ongoing licensing. In the dossier, the Government describes the licence terms, the open door areas available, the selection criteria, etc.

Applications are considered in the order received.

companies must take particular care to provide for in their planning and operations in the areas.

What is a licensing round?

In the dossier, the Government of Greenland describes the licence terms, the licence blocks available, the application date, the selection criteria, etc.

After the application date, the applications are then evaluated at the same time. If there are two or more applicants for the same licence block, the applications will be evaluated on the selection criteria.

In connection with the Government of Greenland's identification of the areas to be made available, in-depth studies have been made, including a strategic environmental impact assessment of the region, an assessment of its geological potential, benchmark analyses of fiscal terms, ice studies, etc.:

Strategic environmental impact assessments (SEIA): A SEIA contributes, among other things, to determining the areas to be made available for exploration activities – and the areas which will not be available to the industry. SEIAs are also used to determine the factors in the environment and nature which the

Geological potential: From a geological perspective, Greenland is one of the most interesting areas in the world. In a report from 2008, for instance, the U.S. Geological Survey (USGS) estimated that the offshore areas of North-East Greenland may hold 31bn barrels of undiscovered oil/gas resources (middle estimate). This estimate is obviously subject to high uncertainty, and any finds which are made may turn out to deviate substantially. When the coming years' prospecting programmes have been completed, it will most likely be possible to say whether oil/gas occurs in commercially viable quantities and, if so, the size of such quantities.

4.1 Greenland's licence strategy for oil/gas

The Government of Greenland estimates that the licence strategy for oil/gas pursued so far has attained its goal of cultivating and maintaining industry interest in oil exploration activities in Greenland. The Government of Greenland's objective is to carry on its efforts to attract private investment in oil exploration activities in Greenland. The Government of Greenland's objective is to have oil exploration activities in different regions of Greenland. The current licence level is regarded as satisfactory.

In order to maintain the current level of activity, it will be necessary to offer new licence areas on a continuous basis to replace the licence blocks which will be relinquished over time.

In the period from 2014 to 2018, the Government of Greenland will invite applications for the following areas of geological interest:

- Jameson Land (2014)
- South-West Greenland (2014)
- Disco-Nuussuaq Region (2016)
- Baffin Bay (2016/2017)
- Davis Strait, west of Nuuk (2018)

The areas in question and the order in which they will be made available have been determined relative to prospectivity and the time perspective reflecting the geo-mapping activities required to make the areas available.

So far, licences have been granted for blocks of 10,000 square kilometres or more. The Government of Greenland proposes instead to license off smaller blocks of 1,000-4,000 square kilometres each. Each block should contain at least one attractive target for exploration.

For a more detailed explanation of individual regions and why and when licensing rounds will be held for individual regions, reference is made to appendix 1.

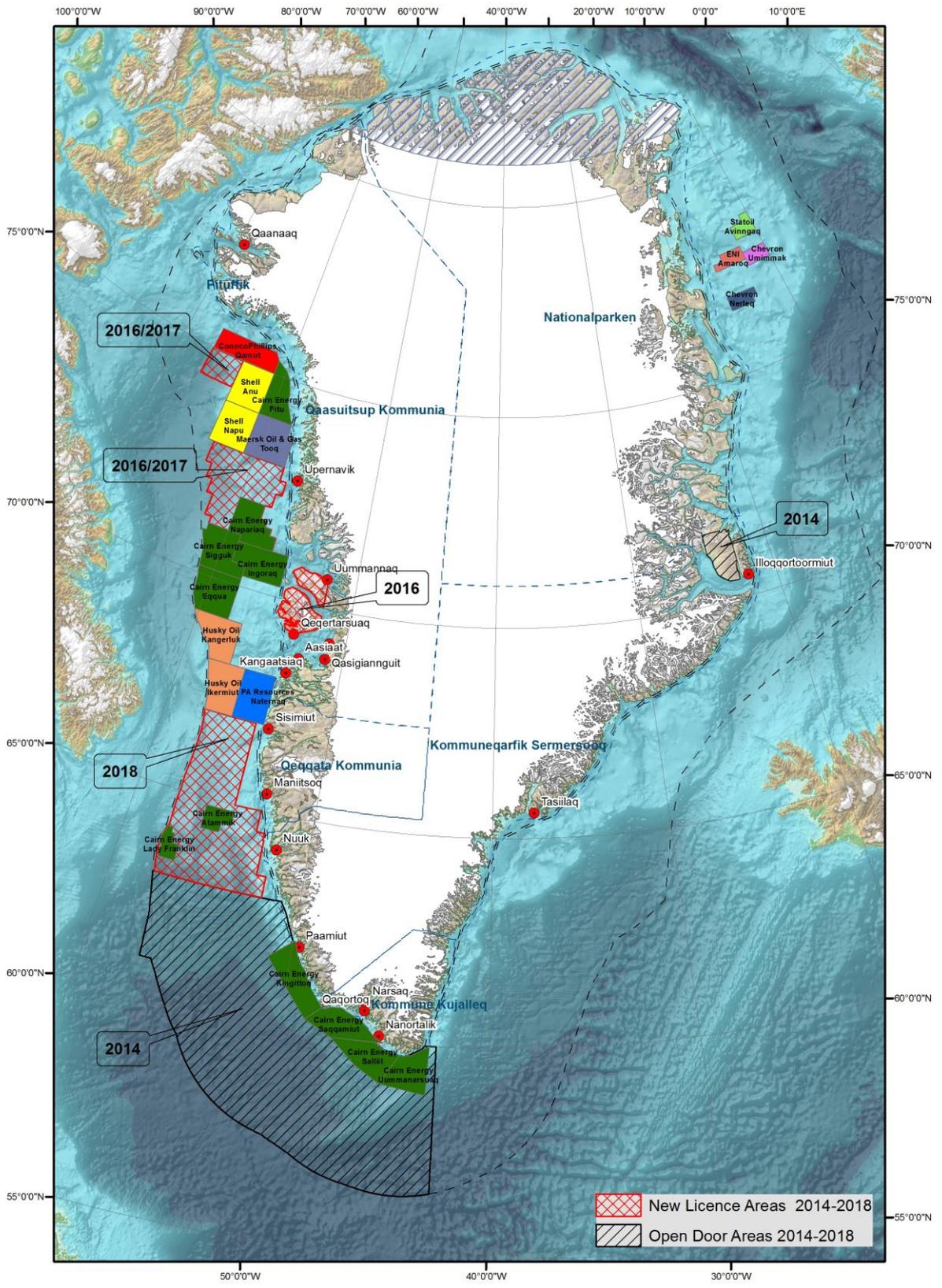


Figure 4: Oil exploration licensing rounds.

The Government of Greenland's objective is to achieve continuous efficiency gains in administrative licensing routines and procedures. In the past strategy period, the initial stages of an IT-based mineral licence management system were developed. The Government of Greenland's objective is to develop a similar system for oil/gas licences in the strategy period 2014-2018 (see also section 4.7).

4.2 Licence terms

An exclusive hydrocarbon exploration and exploitation licence is the legal instrument which sets out the licence terms, including the licence holder's filings to the mineral resources authority, and lays down the rules governing the mineral resources authority's role as supervisory and licensing body in various contexts.

In addition to the licence terms, the licence holder must comply with the Mineral Resources Act and other applicable legislation in Greenland.

Exclusive hydrocarbon exploration and exploitation licences are granted on the basis of a model licence. A model licence will be prepared for the licensing round in the Davis Strait as well as for the open door procedure for areas offshore South/South-West Greenland and areas onshore Jameson Land/Nuussuaq. The model licence will form part of the licensing terms and conditions.

To ensure a stable framework for the industry in which to operate, the new model licence will be based on the model licences used in recent years' licensing rounds and open door procedures. The model licence has been revised at regular intervals to comply with the legal framework (the Mineral Resources Act from 2009 and its amending act from 2012) and current developments in international laws and standards.

The general terms of the model licence include provisions governing the licence period, third-party activities in the licence area, technical and environmental matters, agreements on further training, procedures for approval of activities, royalty and taxes to the public sector, supervision, obligations on termination of activities, filings, labour and subcontractors, joint operating agreement between the licence holders, assignment of the licence, insurance and guarantees, obligations on termination of the licence, etc.

Before the licensing rounds in 2010 and 2012/13, licence terms were added to require socio-economic assessments to be made alongside the environmental assessments. The requirements to oil or gas-carrying vessels were also defined in more detail.

In addition, the model licence contains provisions concerning the tax filings to be made by the licence holder and its subcontractors.

Licences are granted for an exploration period of up to ten years or, in special cases, sixteen years. The exploration period is normally divided into three sub-periods. Before the end of each sub-period, the licence holder must either accept its obligation to carry out the work programme for the next sub-period or relinquish the licence. At the end of each sub-period, at least 30% of the original area must be relinquished.

4.3 Licensing terms and conditions

The licensing terms and conditions are the terms and conditions which govern the licences available in the licensing procedure in question. The licensing terms and conditions will also specify the selection criteria and whether the licensing procedure in question involves a pre-qualification process for operators.

S. 24 of the Mineral Resources Act lays down the following selection criteria:

- 1) One selection criterion is the applicant's expert knowledge, including:
 - a) The applicant's previous experience in exploration or exploitation of hydrocarbons
 - b) The applicant's previous experience in exploration or exploitation of hydrocarbons in areas with similar conditions
- 2) A second selection criterion is the applicant's financial background
- 3) A third selection criterion is the way in which the applicant intends to perform exploration work and initiate exploitation in the area covered by the application, including:
 - a) The applicant's systems and procedures in connection with safety, health and the environment
 - b) The applicant's willingness and ability to perform thorough and efficient exploration for hydrocarbons in the area covered by the application as shown by the exploration activities (work programme) offered by the applicant and related documentation

The Government of Greenland will specify in the licensing terms and conditions that the three primary selection criteria must be given equal weight. If two or more applicants are regarded as equally eligible based on the above primary criteria, the Government of Greenland will set out the following secondary selection criteria in the licensing terms and conditions:

- The applicant's willingness and ability to contribute to the continued development of a strategic environmental impact assessment for the area and contributions to relevant studies in the area concerning social sustainability and emergency response
- The applicant's CSR policy

The above selection criteria will apply to the licensing rounds for Baffin Bay, the Davis Strait as well as the areas onshore Nuussuaq, the open door procedure for areas offshore South/South-West Greenland and the open door procedure for areas onshore Jameson Land.

4.4 Marketing activities

Each year, the Government of Greenland carries out a number of marketing initiatives to promote Greenland's oil/gas potential, licence strategy, etc. to oil and gas companies. For a number of years, Greenland's oil/gas potential has been presented at industry trade shows and conferences in the US and Europe such as AAPG, NAPE and PETEX. In connection with both AAPG and PETEX, special Greenland days have been held where licensing rounds were presented from a geological, environmental and licensing perspective. Often, data collection companies have also been represented at such Greenland days.

Building on the success of previous years, the activities will be carried on and further developed in the strategy period.

4.5 Environment

The purpose of environmental protection is to prevent, abate and combat pollution of soil, sea, seabed, subsoil, water, air and ice, negative effects on climatic conditions as well as vibration and noise pollution.

Environmental protection in the context of oil/gas exploration and exploitation is the responsibility of the Environment Agency for Mineral Resources Activities (the Environment Agency). The Environment Agency's responsibilities are described in section 6.1.

As part of its regulatory regime and environmental protection activities the Environment Agency co-operates closely with the Danish Centre for Environment and Energy (DCE) and the Greenland Institute of Natural Resources (GINR) to protect the environment and conserve nature and wildlife in areas with oil/gas exploration activities.

In co-operation with GINR, DCE prepares strategic environmental impact assessments (SEIAs) which form part of the data on which the political decision to make a sea area available for oil exploration is based. Strategic environmental impact assessments describe the biological and physical background condition of the relevant area and estimate the impact of oil activities on nature and environment and how to best limit such impact.

At the same time, strategic environmental impact assessments help identify the need to increase and improve the knowledge base about the areas and their ecological contexts.

When an oil company applies for an exploration licence, e.g. for exploratory drilling activities, the application must normally be accompanied by an environmental impact assessment (EIA) report. The environmental impact assessment must describe the proposed activities and explain why the technological solutions envisaged are the best available technology and best environmental practice, and also explain how the activities will be carried out so as to minimise the environmental impact to the greatest possible extent.

In order for the company to be granted a licence for and obtain approval of such exploration activities, the environmental impact assessment will be examined by DCE and GINR and will then be put out to consultation before being presented to the Government of Greenland for approval.

If a prospecting or exploration activity is regarded as having no potentially serious impact on the environment, the licence holder may be allowed to submit a less rigorous assessment of environmental effects than the environmental impact assessment, which will then be put out to consultation and afterwards submitted for regulatory approval.

4.6 Physical conditions

The climatic changes as we witness them today with warming and melting of sea ice around Greenland and the Arctic Ocean, melting of the Greenland ice sheet and thawing of permafrost are all factors which are anticipated to affect the area of mineral resources.

Climate change will probably make future exploration activities easier, both at land and at sea. Higher temperatures and thus longer field seasons, shorter winters, a longer season with open waters and a decrease in ice extent and icebergs are all factors which will greatly

increase the possibilities of companies initiating activities to explore for mineral resources in Greenland.

In co-operation with the National Space Institute (DTU Space) and the Danish Meteorological Institute, the Government of Greenland has carried out studies of ice conditions in Baffin Bay and North-East Greenland. A study has also been made of the development in ice conditions in the Arctic Ocean and its effects on Baffin Bay and North-East Greenland.

The most important physical environmental problem in relation to oil exploration in Greenland is sea ice and icebergs. The prevalence of sea ice affects how and in which periods oil exploration activities can be carried out at the current state of the art, and in certain areas drifting icebergs constitute an operational challenge. When exploring for oil/gas along the eastern coast, it is important to look at the impact on ice conditions in the Arctic Ocean, as large volumes of sea ice float from the Arctic Ocean down along the eastern coast.

As will be seen from the figure below, the past decade has seen a significant decrease in Arctic sea ice extent, but the waters around Greenland will still be characterised by large numbers of icebergs many years into the future.

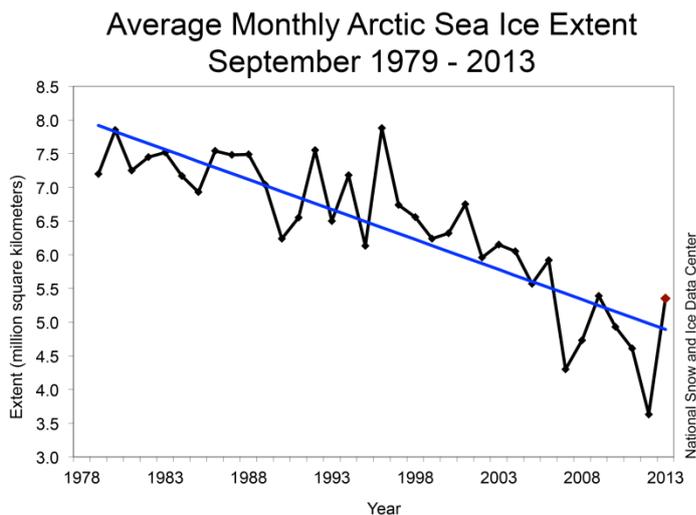


Figure 5: Average monthly Arctic sea ice extent, September 1979-2013. Source: University of Colorado Boulder.

4.7 Emergency response plans

The licence holder is responsible for planning a suitable emergency response to prevent and abate pollution caused by mineral resources activities.

In future, it will still be a mandatory requirement for licence holders to ensure that their emergency response plans for mineral resources activities are consistent with the best international standards and reflect internationally recognised good practice in similar conditions.

For oil exploration activities, the licence holder will therefore be required to contract with a major global oil spill response company which is a member of the Global Response Network (GRN). The Global Response Network is a coalition of major oil spill response companies operating throughout the world and assisting each other in case of major oil spills. The licence holder will also be required to contract with the Self-Government-owned Greenland Oil Spill Response A/S (GOSR), which maintains a relatively large stockpile of oil spill response equipment in Greenland.

The oil spill response must be categorised into three levels: Tiers 1, 2 and 3. On behalf of the licence holder, the oil spill response company must have equipment available for all three response levels which is geared to the relevant response activity. This procedure and also the categorisation of the three-tiered emergency response itself is internationally recognised and in widespread use in many oil-producing countries, including in the North Sea.

- Tier 1 is for minor spills. The equipment to handle Tier 1 must be located physically on the drilling units and the vessels around them.
- Tier 2 is for medium spills. The equipment to handle Tier 2 must be located physically in Greenland and partly on the drilling units and the vessels around them.
- Tier 3 is for major spills. The equipment to handle Tier 3 is physically located at the principal port of the oil spill response company, typically in the UK, Norway, the US or Canada. Chemicals, equipment and staff must be capable of being mobilised immediately from there to the site by aircraft. In connection with Cairn's drilling activities in 2010 and 2011, it was documented that the worst possible response time for Tier 3 equipment to a drilling location was 52 hours.

In the event of the improbable happening, that an oil spill occurs which requires even greater resources, such a scenario has been provided for by virtue of the oil spill response company's membership of the Global Response Network. The membership of GRN means that very substantial oil spill response resources will be available.

Furthermore, licence holders must still be capable of commencing and completing a drilling operation to establish a relief well, if necessary, in case of a blowout.

4.8 Oil and gas taxation model (government take)

The government take is the share of profits of a given project which accrues to the Government. The government take is a result of the overall taxation model applicable in a country. The taxation model may be composed of different elements such as corporate tax, royalty, a specific oil tax, state participation (Nunaoil), withholding tax and export taxes.

In order to provide the Government of Greenland with the best basis for deciding how to compose an appropriate taxation model for Greenland, a benchmark analysis was commissioned. The benchmark analysis compares the taxation models used by a number of countries for oil/gas extraction activities. A report has been made on the government take of the benchmark countries, including how it is collected, the percentage involved and at what stage in the process it is collected. With the country comparison, it is possible to gauge the competitiveness of the countries involved.

The existing tax regime in Greenland has thus been analysed relative to competing countries. The analysis illustrates the level of the government take in Greenland. Is Greenland competitive from a tax point of view and is the current model the best solution for Greenland in case of an increase or decrease in oil prices?

This strategy paper contains an evaluation of the different government take models, and proposes a number of adjustments to the current tax regime in the area of oil/gas and minerals in Greenland.

4.8.1 Benchmark analysis of government take models for oil/gas extraction

To set the government take level and decide on the individual elements of the taxation model for the coming strategy period, an international benchmark analysis of the tax regimes for oil/gas extraction activities has been made.

The analysis is based on the tax regime of the benchmark countries. Most often this means the tax regime in force in 2013, but in a few cases the regimes apply with effect from 2014, e.g. for Denmark and Norway.

The benchmark analysis is based on a realistic base case of a medium-sized oil field’s development over 38 years, beginning in 2013. The table below shows the parameters of the analysis.

<u>Field parameters</u>		<u>Price parameters</u>	
Field size	500 MMBBL	Oil price per barrel	USD 80
Start year	2013	Capital expenditure (CAPEX)	USD 6.735bn
Preparations	Year 0-2	Exploration – share of CAPEX	12.9%
Exploration period	Year 3-8	Closure – share of CAPEX	7.4%
Expansion period	Year 9-11	Transport costs per barrel	USD 5
Production period	Year 12-36	Operating expenditure (OPEX) per barrel	USD 25
Closure period	Year 37-38		

Figure 6: Parameters for analysis of government take, oil.

The figure below shows the nominal tax and royalty rates of the benchmark countries. It should be noted that the only countries which do not yet have oil production activities are Greenland and the Faroe Islands, which means that the other benchmark countries are at a more progressed stage in the process than Greenland and the Faroe Islands.

	Corporate tax rate	Royalty	Surplus royalty	Additional income tax (hydro-carbon tax, petroleum tax etc.)	Export tax	With-holding tax on dividends to the US	Pro-vincial tax	Other taxes	Carried state partici-pation
Argentina	35%	12%	-	-	45%	10%	-	Variable	-
Australia	30%	12.5%	40 %	-	-	-	-	-	-
Brazil	34%	5-10%	-	0-40%	-	-	-	Variable	-
Canada, Newfoundland	15%	5%	20 and 5%	-	-	5%	14%	-	-
Canada, Ontario	15%	12.5%	-	-	-	5%	11.5%	-	-
Denmark	25%	-	-	52%	-	-	-	-	-
Faroe Islands	27%	2%	-	10, 25 and 40%	-	18%	-	-	-
Greenland	30%	-	7.5, 17.5 and 30%	-	-	37%	-	-	12.5%
Kazakhstan	20%	0.5-18%	-	0-60%	USD 60 per tonne and 0-32%	5%	-	Variable	-
New Zealand	28%	5 or 20%	-	-	-	-	-	-	-
Nigeria	50-85% – but replaced by royalty and state participation in the scenario applied	0-20%	-	-	-	-	-	Variable	0-60%
Norway	27%	-	-	51%	-	-	-	-	-
UK	30%	-	-	32%	-	-	-	-	-

Figure 7: Comparison of nominal tax and royalty rates.

4.8.2 Comparison of effective tax and royalty rates etc.

The figure below shows the government take of the relevant country/region as calculated, broken down on the individual elements of the country's/region's government take model. The effective tax and royalty rates etc. will most often deviate from the nominal rates as the individual tax systems interact via deduction systems, in the same way as the effective rates are affected differently by the elements of the calculation. In a comparison between the government take of the different countries, the effective rates are the relevant rates.

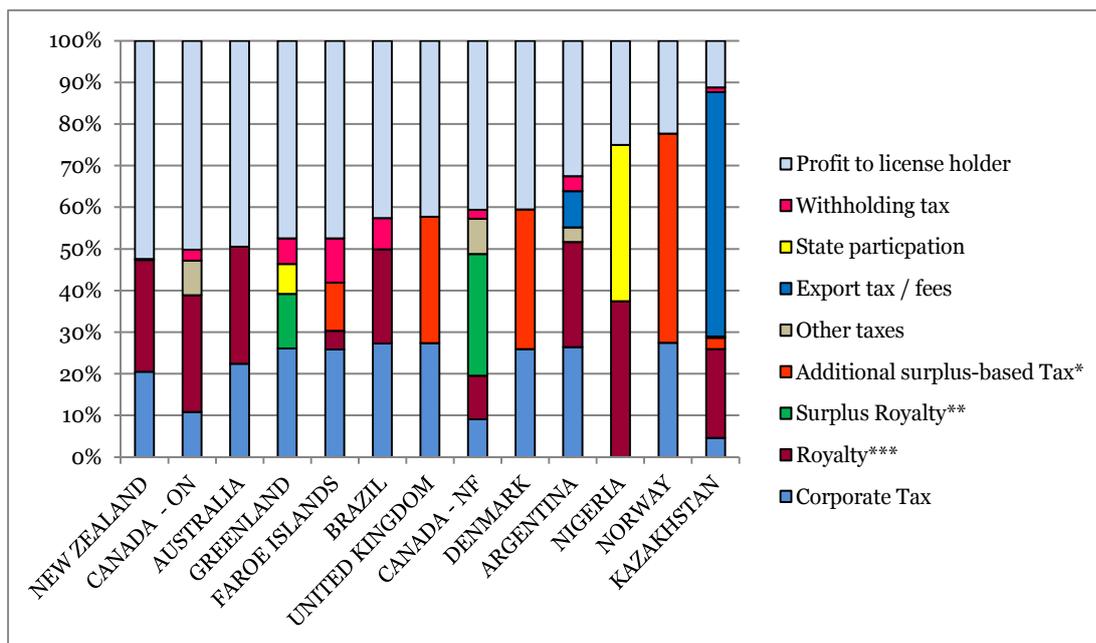


Figure 8: Comparison of government takes between 13 countries and regions.

4.8.3 Main observations and trends as well as changes under consideration

Level of government take

The main conclusion to be drawn from the benchmark analysis is that, at 53%, Greenland's overall government take is at an appropriate level. It should be noted in this connection that the surplus royalty of 13% constitutes a quite significant element in the scenario applied. In the determination of whether a slight increase would be possible, Greenland's frontier status should be taken into account since the benchmark countries with a higher government take are typically countries with a relatively mature oil extraction industry.

Corporate and withholding tax rate

Turning to the individual elements of the taxation models, Greenland's corporate tax rate is in the middle group of tax rates. If viewed in combination with the withholding tax rate of 37% instead, the corporate tax rate is one of the higher. Based on the benchmark analysis, raising the withholding tax rate is not an obvious option.

Royalty

A royalty on turnover would be less attractive to oil-producing companies if there is a risk of low earnings. On the other hand, a royalty on turnover may be attractive to governments since it means that a government take is captured already at production start. But a royalty on turnover will not always be attractive to governments since if earnings increase, the percentage government take may decline. However, the amount collected will increase in absolute figures if it is attributable to higher prices and thus an increase in turnover but, as already mentioned, the percentage government take would then decline. In a scenario like that, a progressive surplus royalty like the one in Greenland would increase the percentage government take in case of increasing profits in the project.

And in the current taxation model in Greenland, the surplus royalty is such a dynamic element. It is important that the level of both the rates and the uplift reflects a reasonable risk

premium for future investors, and also that there is a balance in the uplift between nominal interest and risk premium.

Other taxes and export taxes

In reality, the category “Other taxes” only exists in Canada and is a provincial tax. This tax can therefore be seen as an addition to the corporate taxes, which are at a relatively low level in Canada. The export tax in Argentina and Kazakhstan was primarily introduced as an incentive for companies to refine their oil products in those countries. Consequently, there seems to be no inspiration to be had from this category at this point in time.

State participation

With its current government take model where Nunaoil's participation as a carried partner in the exploration phase is required, Greenland has no real economic risk in maintaining state participation as an element in its government take model. There is thus an option to acquire an ownership interest which may have a considerable value and the only price to pay is the operating expenses involved in running Nunaoil. However, a situation may arise where it is difficult for the state-owned company to muster the financial capability necessary to keep pace if more fields are to be developed at the same time or if a single, but very investment-heavy field is to be developed. Another reason for having a state-owned company is that Greenland as a society has an interest in ensuring that oil extraction know-how is captured.

In the above circumstances, if the carried partnership is utilised to its full potential, it may result in a need for the treasury to borrow funds, which may affect Greenland's overall borrowing and, by extension, Greenland's financial resources. In such situations, any adverse scenarios which arise may be countered at the practical level by selling all or some of the ownership interest in order to finance the ownership interest held by Nunaoil A/S in whole or in part.

From a purely economic perspective, it may be considered whether other sources of government take, e.g. a royalty on turnover, would be simpler and less demanding administratively. If that is the case, such elements could be introduced without changing the aggregate government take if the elements replaced state participation in whole or in part.

Administration of control and collection of government take in Greenland

An expansion of the mineral resources activities involves a number of major challenges to the tax system. Some challenges may be handled by allocating more staff, increasing the use of IT, changing routines and procedures, etc. Other challenges require statutory amendments to make tax law better geared to an ever more international business sector. For instance, it should be considered whether to tighten the rules concerning transfer pricing, thin capitalisation and similar protective measures. An amendment of the corporate tax regime forms part of the Government of Greenland's plans for the coming years. The aim is to find solutions which are geared to the business sector of today and of the future.

4.8.4 Recommendation for future oil/gas taxation model

An amendment of the current taxation model would only affect future strategy periods, i.e. from 2014 and onwards. Exploration and exploitation licences which have already been granted or for which applications have already been invited contain provisions about surplus royalty and state participation and therefore cannot easily be changed.

Following extensive analysis (set out in an appendix to the strategy) of the tax systems of the benchmark countries, the following taxation models are recommended in order of priority:

Model 1	Corporate/withholding tax at the rate applicable from time to time
Surplus royalty based on gross profit as well as a royalty on turnover	Introduction of a 2.5% royalty on turnover
	A surplus royalty of 7.5%, 17.5% and 30%, payable when accumulated revenues exceed accumulated expenses by 35%, 45% and 55%, respectively
	Participation by Self-Government-owned company (Nunaoil) with an ownership interest of 6.25%

Motivation for model 1: This model secures Greenland a government take already from the outset and has a progressive course via the corporate and withholding tax as well as the surplus royalty. In addition, Greenland will retain the option to acquire an interest in the exploitation licence and thus participate as a carried partner in the exploration phase.

Model 2	Corporate/withholding tax at the rate applicable from time to time
Surplus royalty based on gross profit as well as a royalty on turnover	Introduction of a 5% royalty on turnover
	A surplus royalty of 7.5%, 17.5% and 30%, payable when accumulated revenues exceed accumulated expenses by 35%, 45% and 55%, respectively
	No participation by Self-Government-owned company (Nunaoil) in future

Motivation for model 2: This model secures Greenland a reasonable government take already from the outset and has a progressive course via the corporate and withholding tax as well as the surplus royalty. The downside is that Greenland will no longer be entitled to an ownership interest through the Self-Government-owned company (Nunaoil).

<p>Model 3 Surplus royalty based on uplift rates, 16.75%, 24.25% and 31.75%</p>	<p>Corporate/withholding tax at the rate applicable from time to time</p>
	<p>Introduction of a 2.5% royalty on turnover</p>
	<p>A surplus based royalty of 3.5%, 10% and 19.5%, payable when the internal rate of return exceeds 16.75%, 24.25% and 31.75%, respectively</p>
	<p>Participation by Self-Government-owned company (Nunaoil) with an ownership interest of 6.25%</p>

Motivation for model 3: This model secures Greenland a government take already from the outset and has a progressive course via the corporate and withholding tax as well as the surplus royalty. In addition, Greenland will retain the option to acquire an interest in the exploitation licence to participate as a carried partner in the exploration phase. One of the downsides is that the uplift rates must be periodically reviewed relative to the discount rate.

Model 4

Current tax model with unchanged surplus royalty rates

Corporate/withholding tax at the rate applicable from time to time

Keeping the existing surplus royalty of 7.5%, 17.5% and 30%, payable when the internal rate of return exceeds 21.75%, 29.25% and 36.75%

Participation by Self-Government-owned company (Nunaoil) with an ownership interest of 12.5%

Motivation for model 4: This model will keep the government take model of the last two strategy periods. The upside of this model is that it signals stability in a situation where no commercial find has yet been made. The downside is that there is no government take from the outset.

4.9 Strategic priorities with respect to oil/gas

- Licence strategy for oil/gas:
 - Open door procedure from 2014 and onwards for the areas offshore South/South-West Greenland south of 63°N (the area may be converted into a licensing round area at the end of the strategy period)
 - Open door procedure from 2014 and onwards for the area onshore Jameson Land
 - Licensing round for onshore Disco-Nuussuaq in 2016
 - Licensing round for offshore areas in Baffin Bay north of 71°N in 2016/2017, subject to the result of the anticipated oil drillings
 - Licensing round for offshore areas in the Davis Strait west of Nuuk (63°N to 67°N) in 2018
- The platform for administrative licence management will be modernised. New and better systems will be developed to handle spatial and geological data and to achieve efficiency gains in the processing of applications etc.
- New strategic environmental impact assessments will be conducted, including an analysis of the potential for degradation of oil in the water column and seabed sediment, studies of the impact of oil (toxicity) on key species in the area, impact and degradation of residues from oil burning at sea and the potential for bioremediation of beached oil
- The coastal zone atlas will be updated with the most recent research
- Additional studies will be made in the strategy period with regard to ice conditions and the physical environment in general. The studies will be conducted by public authorities as well as private oil companies. Their findings will form part of the basis on which the potential oil drillings which are expected to be carried out after the geological and geophysical studies proposed for the next ten years are planned
- The expansion of Greenland's oil spill response capability will be carried on. This must take place by further strengthening the oil spill response company GOSR A/S owned by the Self-Government
- Greenland's oil/gas potential, licensing strategy, licence conditions, etc. must be promoted at industry trade shows and conferences and other marketing activities such as initiatives towards specific target groups
- The following government take model will be used in the coming strategy period (model 1):
 - Corporate/withholding tax at the rate applicable from time to time
 - A 2.5% royalty on turnover
 - A surplus royalty of 7.5%, 17.5% and 30%, payable when accumulated revenues exceed accumulated expenses by 35%, 45% and 55%, respectively
 - Participation by Self-Government-owned company (Nunaoil A/S) as a carried partner in the exploration phase, with an ownership interest of 6.25%
- The Government of Greenland will strengthen the control and collection authorities to secure Greenland the correct taxes and duties

5 Minerals

The number of licences has been steadily increasing over the strategy period from 2009. Apart from traditional licences (exploration, prospecting and exploitation licences), a new type of licence has been introduced: the small-scale licence. This licence type is typically granted to private collectors of gemstones.

Not only has the number of licences increased. The companies' exploration expenses have also increased over the years from 2002 to 2012. They peaked in 2011 at almost DKK 700m, which is a very large figure. Since then, expenditure has decreased somewhat. This is not a phenomenon which is specific to Greenland. These years, the mining industry is operating under difficult conditions everywhere – and exploration activities have decreased dramatically worldwide. 2013 saw a global decrease of 29% in exploration budgets for precious and basic metals, diamonds, uranium and some industrial minerals.

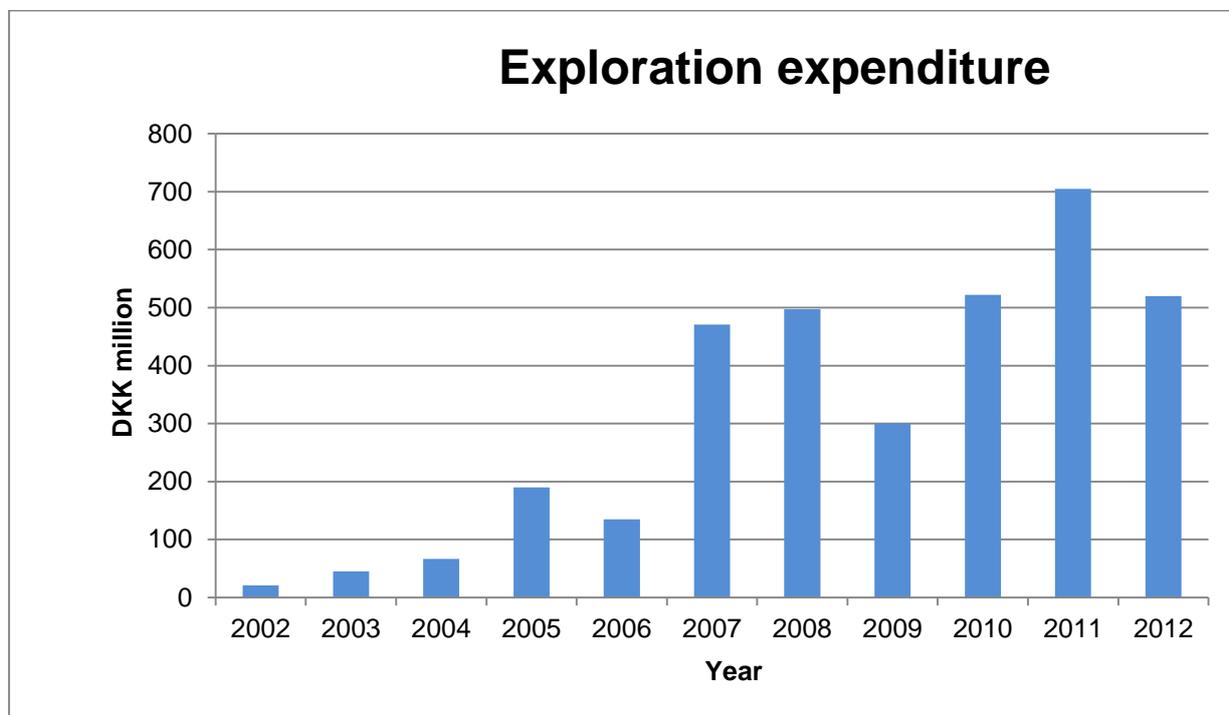


Figure 9: Exploration expenditure, 2002-2012.

When selecting an area for exploration activities, the mineral company will base its decision on a number of parameters. The most important parameters for mineral investment in a given country are the following:

- Geological potential and prospects (metals and minerals)
- Mineral legislation
- Fiscal conditions
- Institutional factors and framework conditions
- Political stability

For the very same reason, the overall goal of the mineral strategy 2009-2014 was to accumulate geological knowledge and increase specific knowledge about attractive

geological areas of mineral deposits in Greenland. These data were to be used in marketing activities aimed at potential mineral companies in the hope that they would apply for an exploration licence and subsequently an exploitation licence in Greenland.

The strategy had a special focus on the areas of limited geological data. One of the areas was South Greenland in general. The result has been a considerable increase in the geological data available for the southern area in question during the period. Another focus area was North Greenland.

5.1 Focus of new government survey programmes

The new targets have been determined based on global mineral demand.

In this context, iron ore, gold and copper are the most important minerals based on market value, iron ore constituting 39%, gold 16% and copper 13% of turnover (see Figure 10). In comparison, rare earth elements constitute only 0.15% of the overall value.

Greenland may become an important player with regard to several of the minerals mentioned. Iron ore, copper and zinc are metals which are used globally in very large quantities and which also have a fair potential in Greenland. Those metals therefore make up an important part of the total value of mineral resources. It is important to map Greenland’s resources of these metals and to persuade the world market of the potential and prospects of producing for and supplying the world market.

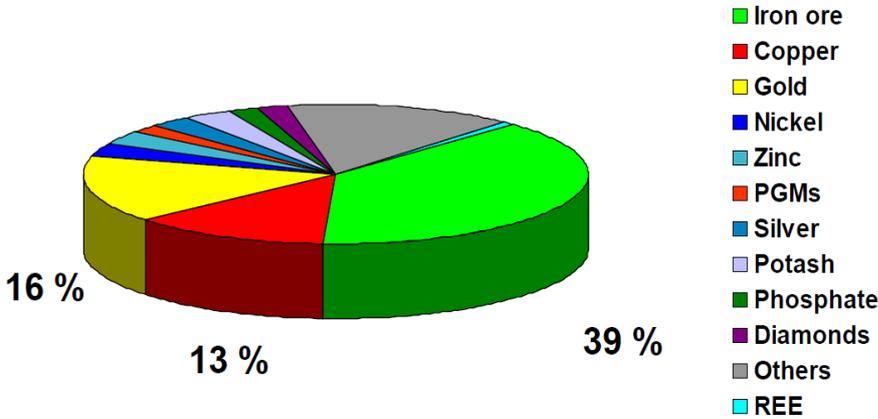


Figure 10: Diagram of value-based turnover of certain mineral resources. Source: Raw Materials Group, Stockholm, 2012.

As far as government survey programmes are concerned, the focus will be on high-volume metals/ore/gemstones – and on special metals such as gold and uranium, i.e. the following:

- Iron ore, copper and zinc
- Rare earth elements
- Gold
- Uranium
- Gemstones

In the new strategy period, we will continue to map the geographical distribution of the metals and the potential and size of deposits discovered. An obvious example in this context would be the zinc potential of North Greenland.

5.2 Small-scale licences

Under the new Mineral Resources Act, individuals with close ties to Greenland are now allowed to engage in and develop small-scale mineral activities such as mineral collection, extraction, processing and sale.

In pursuance of the Mineral Resources Act, the Mineral Licence and Safety Authority currently grants two types of small-scale licences: exclusive or non-exclusive.

The number of small-scale licences granted has increased since 2009, when the first small-scale licence was granted. Currently, twelve small-scale licences have been granted; six exclusive and six non-exclusive.

In the coming strategy period, a number of new initiatives will be implemented to strengthen small-scale activities, including:

- a) Special areas to be reserved for small-scale projects
- b) Prospector and small-scale courses at the School of Minerals and Petroleum to be given higher priority
- c) The possibility of increasing focus on local processing of gemstones to be raised in the IBA negotiations with the minerals industry

5.3 Uranium

At its autumn session in 2013, the Parliament of Greenland resolved to abolish its zero-tolerance policy with regard to uranium and other radioactive minerals.

In the spring of 2013, the Government had set up a cross-ministerial task force with representation from the Self-Government to assess the consequences of uranium extraction and export activities in a scenario where the zero-tolerance policy was abolished.

In October 2013, the task force issued its report. The report describes the international restrictions imposed on uranium extraction and export and discusses the international guidelines for such activities, the experience gained by other countries and existing Danish and Greenlandic laws and regulation.

The report concludes that there is a need to set up a new legislative and administrative framework for an export control system and a system to implement the safeguards of the International Atomic Energy Agency (IAEA) under the UN.

Greenland is already covered by the Treaty on the Non-Proliferation of Nuclear Weapons. The Treaty is the most important agreement on nuclear disarmament and promotion of the peaceful use of nuclear energy. Under the Treaty, Greenland/Denmark is required to conclude safeguards agreements with the IAEA, and also to submit to inspections of nuclear materials such as yellowcake. Greenland is also covered by a voluntary additional protocol, which extends the IAEA's safeguards to also include nuclear substances extracted by mining.

The report further recommends that Greenland should become a signatory to a number of other conventions of importance to nuclear safety and physical protection of nuclear substances and facilities.

Denmark has accepted a number of export control restrictions for dual-use products. If Greenland wishes to exploit and export uranium, Greenland would need to formally accept the relevant regulations in this area and enter into agreements for compliance with international obligations in this area.

The report also recommends that a detailed analysis should be made with regard to the framework required for the new export control and safeguards systems, and that efforts should be made to further identify the regulatory tasks involved and the draw on resources that those tasks will imply.

Based on the strategic priorities of the report, the Government and the Government of Greenland will carry on their efforts to determine the relevant areas of responsibility, including to allocate tasks and responsibility in connection with export control and compliance with the IAEA safeguards.

Moreover, implementation efforts must be initiated, among other things by laying down the regulatory framework required for the Self-Government to comply with its obligations under international law and other international rules concerning uranium and other radioactive minerals.

In addition, a co-operation structure must be set up between the Government and the Government of Greenland with regard to addressing defence and national security policy matters of importance to export of uranium extracted in Greenland.

The Government and the Government of Greenland must also co-operate on the allocation of tasks relating to compliance with the IAEA safeguards and handling of other general IAEA matters to the extent that the tasks concern defence or national security policy matters concerning export of uranium extracted in Greenland.

The preparations involved in establishing the regulatory framework and setting up the required administrative systems and procedures are expected to be completed in early 2016.

A licence to extract uranium or other radioactive elements will not be granted until the rules, regulations and administrative systems and procedures are in place.

5.4 Special conditions for North Greenland north of 81° N

For the purpose of marketing the unique zinc potential in North Greenland, licences for this region will be available on special terms in May 2014. The area is logistically difficult, and it is therefore considered necessary to offer licences on more favourable terms with regard to exploration obligations and licence period.

The area will be the subject of a number of different assessments by independent experts to identify areas of particular vulnerability in terms of nature or environment where mineral exploration activities may have an adverse impact. In this process, a number of specific areas will be identified and excluded from the process.

In addition, in connection with a licensing round for the area, the requirements and terms which apply to the exploration activities will take into account the biological data gaps. This means, among other things, that applicants will be required to analyse the natural conditions of the licensed area to identify particularly vulnerable areas and at the same time contribute to mapping the area's biodiversity. These activities must be carried out in co-operation with and according to the instructions of the Greenland Institute of Natural Resources and the Danish Centre for Environment and Energy.

5.4.1 Licence terms

In order to allow the companies to carry out basic geological studies and analyses, licences will be granted on the "Special terms" of the standard licence terms, although the licence period will be six years instead of three. The company will be required to reduce the licence area during the licence period. Other than that, the general licence terms and field rules will apply.

5.4.2 Royalty

For all licences in the area, the new royalty regime being prepared for zinc and lead will apply.

5.4.3 Licence areas

The area north of 81° N will be divided into predefined blocks, in the same way as with hydrocarbon licences. These areas will be defined to ensure that the particularly vulnerable areas mentioned above are excluded. As a general rule, the areas will cover at least 3,000 square kilometres.

5.4.4 Marketing activities

For the purpose of marketing the area, the data pack from the area with data which have already been published will be distributed at the annual marketing events, and presentations and speeches will be given on the area and the licence terms.

5.5 Environment

The purpose of environmental protection is to prevent, abate and combat pollution of soil, sea, seabed, subsoil, water, air and ice, negative effects on climatic conditions as well as vibration and noise pollution.

Environmental protection in the context of mineral exploration and exploitation is carried out by the Environment Agency for Mineral Resources Activities (the Environment Agency). The Environment Agency's responsibilities are described in section 6.1.

When applying for an exploitation licence, the company must submit an environmental impact assessment (EIA) report pursuant to s. 73 of the Mineral Resources Act. The EIA report will be examined by the Danish Centre for Environment and Energy and the Greenland Institute of Natural Resources, and will then be put out to consultation before being presented to the Government of Greenland for approval. The EIA report must be approved before other licences and permits required in order to begin mineral exploitation activities can be granted.

The purpose of the EIA report is to ensure that a mineral project complies with the provisions of the Mineral Resources Act on environmental protection, nature conservation and climate protection. In practice, this means that the EIA report must identify and procure solutions for the potential environmental impact of a project. An EIA report must describe all project phases, from before project launch (the natural condition of the project area) and until after its completion, when the area must be monitored for a relatively long period of time. An EIA is a comprehensive expert exercise which includes several years of studying the area's natural environmental condition, project relevant studies and public consultation.

There are still a lot of areas of Greenland's nature and environment which are characterised by limited geological data and which would therefore benefit from better scientific understanding and description – including wildlife and plants, ecosystem interaction and vulnerabilities, the importance of climate change, specific interactions between exploration activities and nature and environment, etc.

With their relatively high level of exploration activity, the mineral resources companies are contributing to creating knowledge on nature, environment and interactions which is of great value to Greenland, also in other contexts than the mineral resources sector. It is important to continue these studies and to continue engaging the mineral resources companies in these efforts.

With the decision to abolish the zero-tolerance policy, the road has been paved for licences to exploit uranium and other radioactive elements. For this type of minerals, the same mandatory requirement applies: that the provisions of the Mineral Resources Act on environmental protection, nature conservation and climate protection must be complied with before any exploitation activities are launched. Because of the radioactive properties of uranium, special measures must be taken before any exploitation activities can be launched. In order to ensure that a uranium exploitation project complies with the provisions of the Mineral Resources Act on environmental protection, nature conservation and climate protection, the statutory environmental impact assessment must have a particular focus on identifying and providing solutions to the potential environmental impact of a uranium mine. This means that the implications of the radioactive properties of the mineral must be described in all phases of the project from before project launch and until project completion and the transition to the phase where the area which is no longer in use is monitored. This also means that before any uranium exploitation activities are initiated, it will be necessary to carry out an analysis of and lay down rules and regulations and licensing terms which allow for environmentally acceptable exploitation of also uranium.

5.6 Marketing

In its campaign to promote business, the Government of Greenland has a particular focus on marketing Greenland's mineral resource potentials. For quite a number of years, Greenland has attended the world's largest industry trade shows, and its participation is evaluated on a regular basis so as to ensure that Greenland continues to be represented at the most important industry events.

Apart from participation in industry trade shows, the marketing efforts include activities aimed directly at carefully selected countries, exploration companies and investors. This ensures

flexibility and a clear target for the activities to ensure that the resources allocated are utilised to their full potential.

Official visits together with the Ministry of Industry and Mineral Resources are also used strategically to open the doors to potential partners in exploration as well as exploitation projects.

In the years to come, Greenland's marketing efforts must reflect the fact that not only exploration companies but also investors and purchasers are a central part of the marketing strategy.

In the coming strategy period, the marketing activities can therefore be divided into three types:

- 1) Participation in industry events where Greenland's mineral potential will be presented in connection with exhibitions
- 2) Marketing activities aimed directly at a country and/or companies as well as to attract investors
- 3) Official visits with the Ministry of Industry and Mineral Resources

For a number of years, Greenland has attended each year's Roundup conference in Vancouver and the PDAC convention in Toronto. Since 2010/2011, Greenland has also attended marketing and industry events in China and Australia, more specifically China Mining in Tianjin and various events in the Perth area. Most recently, Greenland attended the Fennoscandian exploration and mining conference in Finland for the first time, and is planning to attend the investor-related Mines and Money conference and exhibition in Hong Kong in the spring of 2014.

Official visits with the Ministry of Industry and Mineral Resources have been an important leverage in our contact with both China and South Korea. The visits have contributed to creating new opportunities for co-operation with ministries as well as underlying institutions such as geological research institutions. These opportunities for co-operation would be difficult to bring about administratively with political participation. The official visits are also used to forge contacts with investment banks and potential major purchasers of the mineral resources in Greenland's subsoil.

In the years to come, the marketing activities will be broad in focus, aiming to attract exploration companies, and also focus on investments and purchasers as well as try to gain access to markets via bipartite agreements and official visits at the ministerial level. The current activities will be carried on and further developed as and when necessary.

5.7 Greenland's licence strategy for mineral

The mineral strategy from 2009 set a number of goals for the development of the licensing structure. Weight was given to transparent and stable framework conditions to increase Greenland's chances of attracting foreign investment. A significant aspect in this context was to make licence terms robust to fluctuations in the global economy. Another objective was to make the administrative processes simple and easy to navigate.

In the period from 2009 to 2012, Greenland was successful in increasing the number of exploration licences granted – and thus increasing foreign investment in exploration activities in Greenland.

In relation to achieving additional efficiency gains in administrative processes, a new IT mineral licence management system (AMT) has been developed since 2009, which was launched on 1 January 2010.

If Greenland's economy is to develop in a more sustainable direction, it is important to ensure that the positive trend in the number of licences granted continues into the future. The goal is therefore to double the number of licences over the next five years so as to reach a figure of more than 300 licences granted.

There is therefore still a great need to achieve efficiency gains in internal routines and procedures in order to allow the authorities to handle a larger number of licences without a proportionate increase of resources.

If new and better systems are developed to handle spatial and geological data, this would free up resources which are currently tied up in manual routines, and those resources could then be allocated to the processing of applications etc.

The objective is therefore to modernise the existing mineral licence management portal over the next five years.

5.8 Mineral taxation model (government take)

The government take consists of different elements such as corporate tax, royalty, a special mining tax, withholding tax and export taxes. In connection with the benchmark analysis, a report has been made on the government take of the benchmark countries, including how it is collected, the percentage involved, at what stage in the process it is collected and how competitive each benchmark county is. Based on this analysis, the different government take models are discussed and proposals made for adjustments to the current mineral tax regime in Greenland.

5.8.1 Purpose of benchmark analysis

An international mineral benchmark analysis was made to set the government take level for the coming strategy period. The existing tax regime has been thoroughly analysed relative to competitors in the same area. The analysis illustrates the level of the government take in Greenland. Is Greenland competitive from a tax point of view and is the current model the best solution for Greenland in case of an increase and decrease in mineral prices?

5.8.2 Comparison of nominal rates

The table below shows the nominal rates of the tax elements of the benchmark countries:

	Corporate tax rate	Royalty	Additional income tax (mining tax)	Export tax	Withholding tax on dividends to the US	Withholding tax on interest	Provincial tax	Other taxes
Argentina	35%	3%	-	5-10%	-	15%	-	1%
Australia	30%	Gold: 2.5% Iron ore: 5, 5.625 or 7.5% Uranium: 5% Zinc: 2.5 or 5% Rare earth elements: calculated according to formula	-	-	-	10%*	-	
Brazil								
Canada, Newfoundland	15%	-	-	-	5%	-	14%	-
Canada, Ontario	15%	-	-	-	5%	-	10%	-
Greenland	30%	-	-	-	37%	-	-	-
Kazakhstan	20%	Gold: 5% Iron ore: 2.8% Copper: 5.7% Other: 0-18%	0-60%	-	5%	-	-	Variable
China	25 %	Variable amounts payable annually depending on size of area	USD 4.92 per medium/heavy REE ton and 3% in mineral resources tax	-	10% in some cases	10%	1-7%	2% and 3%
Peru	30%	1-12%	2-8.4%	-	4.10%	4.99% or 30%	-	4-13.12%
Sweden	22%	-	-	-	0%, if ownership of shares is for commercial reasons	-	-	-
South Africa	28% – calculated for gold according to formula	-	Refined minerals (gold, and processed copper of 99.0% purity): 0.5-5% Unrefined minerals (gemstones, iron ore, copper and other copper): 0.5-7%: 0.5-5% Unrefined minerals: 0.5-7%	-	5%	15% from 2015	-	-

Tanzania	30%	Diamonds, gemstones and uranium: 5% Metallic minerals: 4% Other minerals: 3%	-	-	10%	10%	-	0.30%
USA	35%	Royalty to land owners varies, but amounts to approx. 8%	-	-	-	-	8.84%	1%

Figure 11: Benchmark mineral taxation

5.8.3 Comparison of effective tax and royalty rates etc.

The figure below shows the government take of the relevant country/area as calculated, broken down on the individual elements of the country's/region's government take model. The effective tax and royalty rates etc. will most often deviate from the nominal rates as the individual tax systems interact via deduction systems, in the same way as the effective rates are affected differently by the elements of the calculation. In a comparison between the government take of the different countries, the effective rates are the relevant rates.

IRON ORE

In table form and bar chart, government takes on iron ore may be summed up as shown below.

IRON ORE	Corporate tax	Royalty	Surplus Mining Tax	WHT Dividends	WHT Interest	Provincial Taxes	Payment to land owners	Export taxes	Other Duties	Profit to Permit Holder	Total Government take
SWEDEN	23.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	76.8%	23.2%
CANADA - ON	13.8%	0.0%	8.9%	3.4%	0.0%	9.2%	1.0%	0.0%	0.0%	63.7%	36.3%
GREENLAND	30.3%	1.0%	0.0%	7.1%	0.0%	0.0%	0.0%	0.0%	0.0%	61.6%	38.4%
PERU - TSA	27.8%	0.0%	7.0%	2.6%	2.0%	0.0%	0.0%	0.0%	0.0%	60.6%	39.4%
PERU - OLD	27.4%	0.0%	8.2%	2.6%	2.0%	0.0%	0.0%	0.0%	0.0%	59.8%	40.2%
KAZAKHSTAN	20.2%	9.3%	8.1%	3.1%	0.0%	0.0%	0.0%	0.0%	0.0%	59.3%	40.7%
SOUTH AFRICA	23.1%	16.6%	0.0%	3.0%	1.0%	0.0%	0.0%	0.0%	0.0%	56.3%	43.7%
CANADA - NF	13.3%	0.0%	15.7%	2.9%	0.0%	12.4%	1.0%	0.0%	0.0%	54.7%	45.3%
AUSTRALIA	23.6%	22.3%	0.0%	0.0%	0.8%	0.0%	0.0%	0.0%	0.0%	53.3%	46.7%
ARGENTINA	22.5%	10.0%	0.0%	5.0%	1.1%	0.0%	0.0%	16.7%	0.0%	44.7%	55.3%

Figure 12: Benchmark – iron ore.

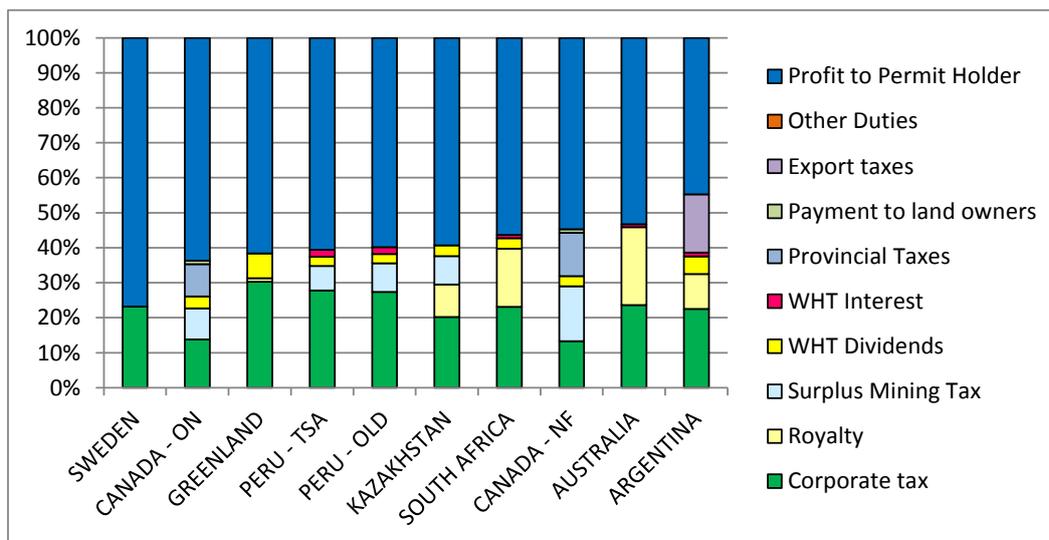


Figure 13: Benchmark – iron ore.

Level of government take – iron ore

Over time, the lowest government take on an iron ore mine corresponding to the scenario chosen is in Sweden (less than 25%) and the Canadian province Ontario and Greenland (36-38%) and the highest government take (more than 55%) is in Argentina. For Greenland, the figures are based on the licence agreement with London Mining. This agreement does not result in an actual increase of the government take relative to the withholding tax of 37%, but primarily an acceleration since the royalty means an annual minimum take is captured. But as the taxable income is negative at the beginning of the exploitation period, the royalty results in a lower increase of the government take relative to the 37%. In addition to the withholding tax, a very low amount of corporate tax is payable since the entire investment in facilities cannot be depreciated in full during the production period. That is why the scenario in question shows a government take of 38.4% for Greenland.

The government take of other countries and regions in the scenario ranges between 39 and 47%, i.e. a higher take. Those countries are all mature mining countries, which must be taken into account when evaluating the level of their government take.

GOLD

In table form and bar chart, government takes on gold may be summed up as shown below.

GOLD	Corporate tax	Royalty	Surplus Mining Tax	WHT Dividends	WHT Interest	Provincial Taxes	Payment to land owners	Export Taxes	Other Duties	Profit to Permit Holder	Total Government take
SWEDEN	22.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	77.8%	22.2%
CANADA - ON	13.2%	0.0%	8.6%	3.4%	0.0%	8.6%	1.0%	0.0%	0.0%	65.2%	34.8%
AUSTRALIA	28.0%	6.9%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	64.8%	35.2%
GREENLAND	30.2%	0.0%	0.0%	7.1%	0.0%	0.0%	0.0%	0.0%	0.0%	62.7%	37.3%
PERU TSA	28.1%	0.0%	6.0%	2.7%	0.8%	0.0%	0.0%	0.0%	0.0%	62.4%	37.6%
PERU	27.8%	0.0%	6.9%	2.6%	0.8%	0.0%	0.0%	0.0%	0.0%	61.9%	38.1%
KAZAKHSTAN	17.9%	14.1%	3.8%	3.2%	0.0%	0.0%	0.0%	0.0%	0.0%	61.0%	39.0%
SOUTH AFRICA	25.9%	0.0%	10.6%	3.2%	0.3%	0.0%	0.0%	0.0%	0.0%	59.9%	40.1%
CANADA - NF	12.9%	0.0%	15.5%	2.9%	0.0%	12.0%	1.0%	0.0%	0.0%	55.7%	44.3%
ARGENTINA	25.8%	8.5%	0.0%	5.1%	0.3%	0.0%	0.0%	14.1%	0.0%	46.2%	53.8%

Figure 14: Benchmark – gold.

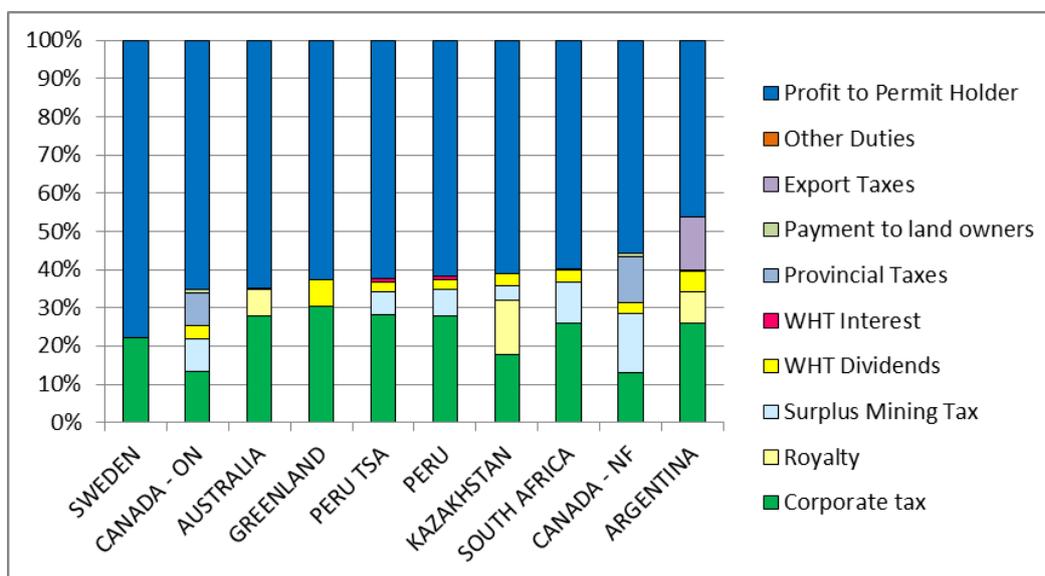


Figure 15: Benchmark – gold.

Level of government take - gold

Over time, the lowest government take on a gold mine corresponding to the scenario chosen is in Sweden (less than 25%) and the Canadian province Ontario and Australia (around 35%). Greenland and Peru are slightly higher at 37-38%. In the middle we find Kazakhstan, Newfoundland and South Africa with a government take of around 39-44%. Argentina comes in at the top (54%).

COPPER

In table form and bar chart, government takes on copper may be summed up as shown below.

COPPER	Corporate tax	Royalty	Surplus Mining Tax	WHT Dividends	WHT Interest	Provincial Taxes	Payment to land owners	Export taxes	Other Duties	Profit to Permit Holder	Total Government take
CANADA - ON	13.6%	0.0%	8.8%	3.4%	0.0%	9.3%	1.0%	0.0%	0.0%	63.9%	36.1%
GREENLAND	30.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	63.0%	37.0%
PERU - TSA	27.9%	0.0%	6.8%	2.6%	1.4%	0.0%	0.0%	0.0%	0.0%	61.4%	38.6%
PERU - OLD	27.6%	0.0%	7.9%	2.6%	1.4%	0.0%	0.0%	0.0%	0.0%	60.6%	39.4%
SOUTH AFRICA	24.5%	0.0%	11.9%	3.1%	0.7%	0.0%	0.0%	0.0%	0.0%	59.9%	40.1%
KAZAKHSTAN	17.7%	18.6%	5.3%	2.9%	0.0%	0.0%	0.0%	0.0%	0.0%	55.5%	44.5%
CANADA - NF	13.1%	0.0%	15.5%	2.9%	0.0%	12.3%	1.0%	0.0%	0.0%	55.2%	44.8%

Figure 16: Benchmark – copper.

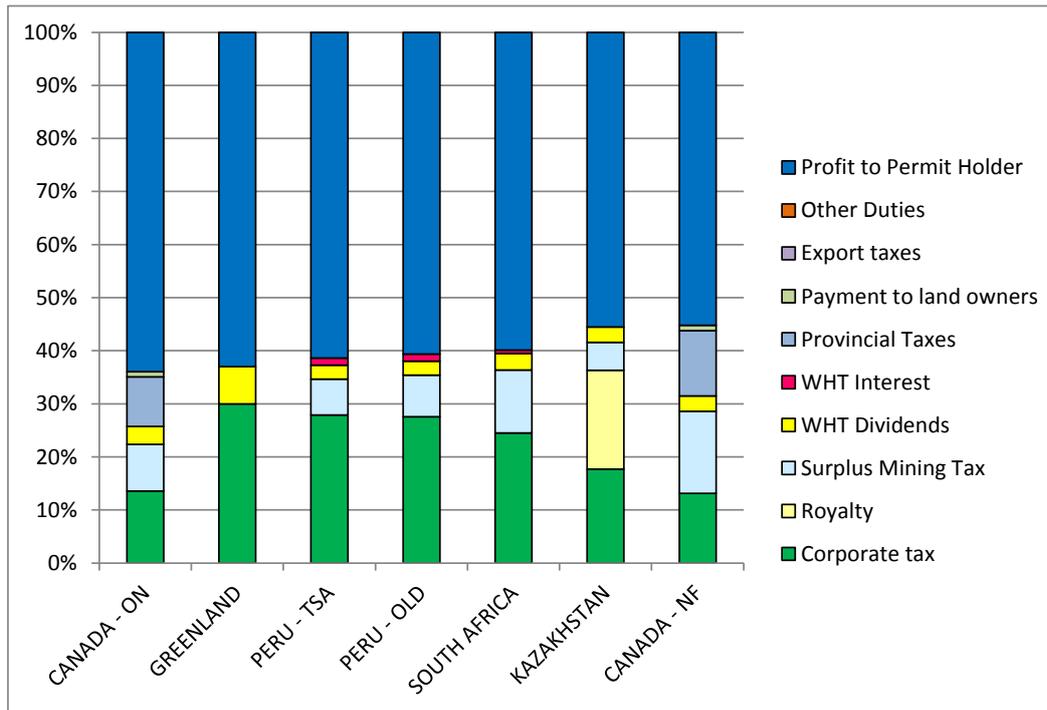


Figure 17: Benchmark – copper.

Level of government take – copper

Over time, the lowest government take on a copper mine corresponding to the scenario chosen is in the Canadian province Ontario (around 36%). Greenland is slightly higher at 37%. In the middle we find Peru and South Africa with a government take of around 39-40%. Kazakhstan and Newfoundland come in at the top at around 45%.

REEs

In table form and bar chart, government takes on rare earth elements (REEs) may be summed up as shown below.

REE	Corporate tax	Royalty	Surplus Mining Tax	WHT Dividends	WHT Interest	Provincial Taxes	Payment to land owners	Export taxes	Other Duties	Profit to Permit Holder	Total Government take
AUSTRALIA	28.3%	6.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	65.2%	34.8%
GREENLAND	30.2%	0.0%	0.0%	7.1%	0.0%	0.0%	0.0%	0.0%	0.0%	62.7%	37.3%
CHINA	22.5%	8.4%	0.0%	6.3%	0.8%	0.9%	0.0%	0.0%	4.7%	56.4%	43.6%
UNITED STATES	18.8%	0.0%	0.0%	0.0%	0.0%	3.4%	21.3%	0.0%	0.5%	56.0%	44.0%

Figure 18: Benchmark – rare earth metals.

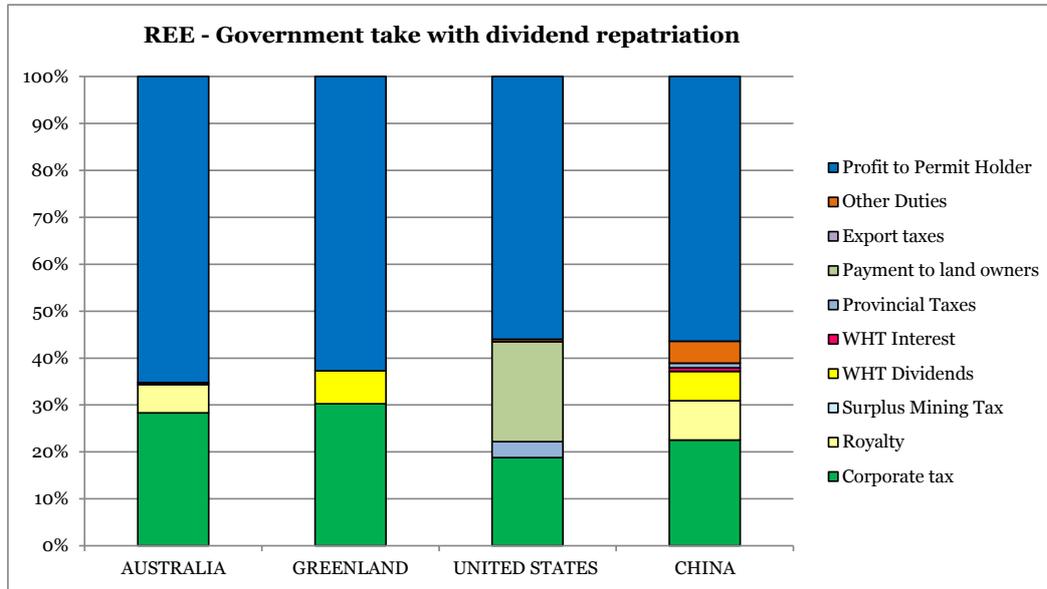


Figure 19: Benchmark – rare earth metals.

Level of government take - rare earth elements

Over time, the lowest government take on a rare earth mine corresponding to the scenario chosen is in Australia at around 35%. Greenland is slightly higher at around 37%. The other two countries, China and the US, come in at the top at around 45%, it being noted that an 8% royalty to the land owner has been included, which according to PwC California is a typical rate for rare earth mines.

GEMSTONES

In table form and bar chart, government takes on gemstones may be summed up as shown below.

GEMSTONES	Corporate tax	Royalty	Surplus Mining Tax	WHT Dividends	WHT Interest	Provincial Taxes	Payment to land owner	Export taxes	Other Duties	Profit to Permit Holder	Total Government take
GREENLAND	30.2%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	62.8%	37.2%
SOUTH AFRICA	27.3%	8.8%	0.0%	3.2%	0.1%	0.0%	0.0%	0.0%	0.0%	60.6%	39.4%
TANZANIA	28.4%	6.5%	0.0%	6.5%	0.1%	0.0%	0.0%	0.0%	0.0%	58.5%	41.5%

Figure 20: Benchmark – gemstones.

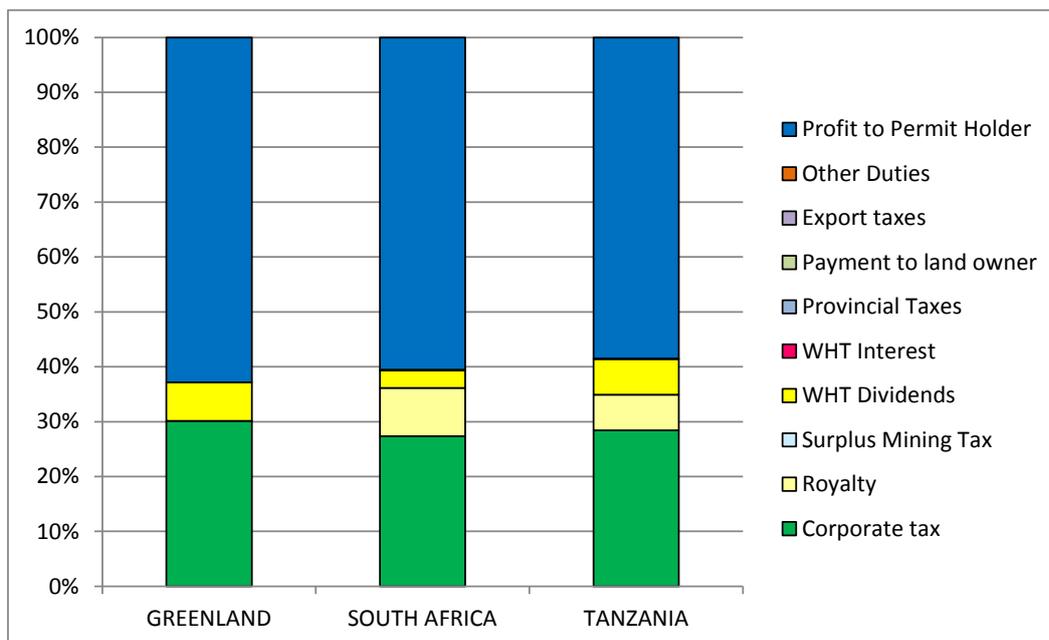


Figure 21: Benchmark – gemstones.

Level of government take – gemstones

The government take on a gemstone mine is lower in Greenland than in South Africa and Tanzania. It corresponds to the level of Namibia and Mozambique, which also operate with a separate gemstone tax.

ZINC

In table form and bar chart, government takes on zinc may be summed up as shown below.

ZINC	Corporate tax	Royalty	Surplus Mining Tax	WHT Dividends	WHT Interest	Provincial Taxes	Payment to land owners	Export taxes	Other Duties	Profit to Permit Holder	Total Government take
GREENLAND	31.2%	0.0%	0.0%	7.3%	0.0%	0.0%	0.0%	0.0%	0.0%	61.5%	38.5%
CANADA - ON	13.4%	0.0%	11.4%	3.2%	0.0%	9.9%	1.0%	0.0%	0.0%	61.1%	38.9%
AUSTRALIA	23.9%	21.5%	0.0%	0.0%	1.2%	0.0%	0.0%	0.0%	0.0%	53.4%	46.6%
CANADA - NF	13.6%	0.0%	16.1%	4.9%	0.0%	12.7%	1.0%	0.0%	0.0%	51.8%	48.2%

Figure 22: Benchmark – zinc.

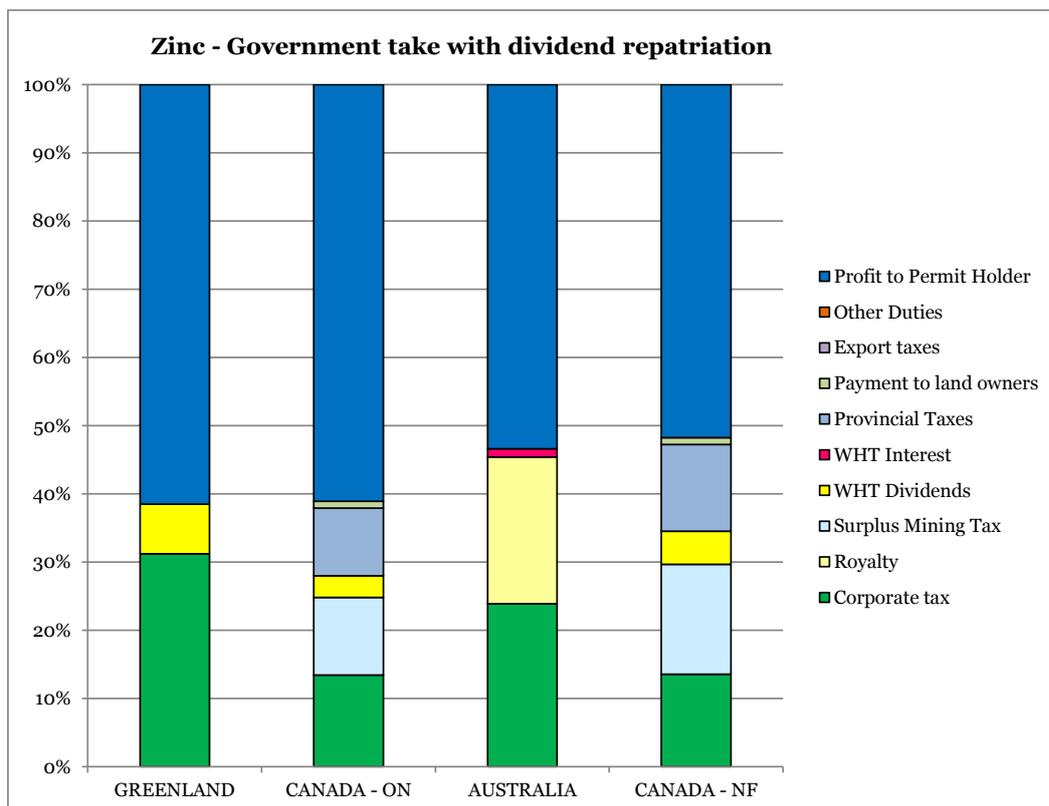


Figure 23: Benchmark – zinc.

Level of government take – zinc

Over time, the lowest government take on a zinc mine corresponding to the scenario chosen is in Greenland at 38.5%, closely followed by the Canadian province of Ontario at 38.9%. Australia and Newfoundland (Canada) are both somewhat higher at around 47-48%.

URANIUM

Level of government take – uranium

The turnover-based royalty payable in Australia and Tanzania is 5% for both countries. Both countries have a corporate tax of 30%, the same as in Greenland. In addition, Australia and Tanzania have a 10% withholding tax on interest, which means that there is room for a uranium royalty.

5.8.4 Main observations and trends as well as changes under consideration

Level of government take

Based on the individual country comparisons, the main conclusion is that with an overall government take of 37-38% Greenland is at the lower end of the scale. However, Greenland is not significantly lower than the majority of countries with government take levels between 39 and 44%, although there are a couple of countries with a much higher take.

Any increase in Greenland's government take should therefore be modest, having regard to the country's frontier status and challenging infrastructure.

Royalty

As discussed above, a royalty on turnover would be less attractive to mining companies if there is a risk of low earnings. On the other hand, a royalty on turnover may be attractive to governments since it means that a certain government take is captured already at production start. But a royalty on turnover will not always be attractive to governments since if earnings increase, the percentage government take may decline. However, the amount collected will increase in absolute figures if it is attributable to higher prices and thus an increase in turnover but, as already mentioned, the percentage government take would then decline. A linear surplus royalty would result in a constant percentage government take, and a progressive surplus royalty would increase the percentage government take in case of increasing profits in the project.

Another observation is that the royalty/tax on turnover and the surplus royalty/tax occur with more or less the same frequency in the benchmark countries. The introduction of a royalty on turnover would therefore most likely not seem strange to licence holders. Consequently, this is an option to consider. In such case, however, it must be considered if the rates of the current elements of the government take should then be reduced. In this connection, the risk of a declining government take should be considered. All in all, it is important to keep in mind that, if too onerous, a royalty on turnover may constitute an obstacle to investment.

Alternative Greenland models for consideration

The considerations involved in a potential change of taxation models for iron ore, gold, copper and zinc, respectively, share many similarities with respect to production conditions and earnings, and these are therefore discussed collectively below.

The other three minerals, REEs (rare earth elements), gemstones and uranium, are treated under separate headings.

Standard models are used for the assessments which are based on the cost structure known from mature mining countries. The parameters which decide whether a specific mine turns out to be profitable for an investor are the overall cost level including the investment sum, the price of the relevant metal/mineral and the government take model.

Iron ore, gold, copper and zinc

Based on the benchmark analysis of various tax systems and levels within iron ore, gold, copper and zinc production, Greenland – with a government take of 37-38% – is close to the mature countries in the comparison.

If a royalty is to be added on top of the existing government take, there is a risk that the government take will reach an uncompetitive level. With gross profits of around 33%, a royalty on turnover will increase the government take by around 2 percentage points for each percentage point of royalty on turnover. With a royalty on turnover of 2%, the government take will thus come out at a level between 41-42%. This level is higher than in countries like Peru and South Africa, on a par with Kazakhstan (higher than Kazakhstan for iron ore and gold, but lower for copper) and substantially higher than Sweden and Ontario (Canada), but still lower than Newfoundland/Labrador (Canada) and Argentina. A level of more than 2%, perhaps 3%, would hardly be realistic to introduce for these minerals.

If, by contrast, a royalty on turnover is introduced which corresponds to the London Mining model with a set-off between royalty and income tax, a higher royalty on turnover could be introduced without the percentage government take increasing. Even if it does not increase the percentage government take, it will nevertheless be an advantage to Greenland as it means that the government take will be captured at an earlier point in time. It is noted in this connection that existing tax legislation does not permit set-off of royalty against corporate/withholding tax on a krone for krone basis. The only set-off model which is currently possible is thus the model applied in the London Mining licence where corporate/withholding tax is set off against the royalty calculated. Therefore, if royalty set-off against tax is to be allowed, a change in legislation will be needed.

It should in general be considered whether to introduce a profit-dependent royalty whereby the government take can be increased if the economy allows it, i.e. in the form of progressive taxation which will not be triggered until a certain gross profit has been reached. This may be combined with a royalty on turnover. Kazakhstan has introduced such royalty on turnover across several tax bands depending on the accumulated gross profit on a cash flow basis before interest. The surplus royalty rates range from 10% to 60%.

It could in general be considered to phase in turnover-based royalty rates which are lower at the beginning with no or only limited earnings and which then increase to a higher level at a later point in the life of the mine where earnings must be expected to have increased.

Finally, it should be considered whether to exempt small-scale licences from the provisions on royalty. In Australia, licences worth less than AUD 100,000 are exempted from royalty.

An element used by many mining countries is interest withholding tax. It could be considered to supplement the future tax system at some point with such withholding tax. At present, Greenland has included a limit in the form of a capitalisation requirement for the companies of 2:1, but on major projects substantial amounts of interest may accrue even if the capitalisation rules are observed, which may reduce the corporate tax. A royalty on turnover would be unaffected by interest expenses and a surplus royalty may also be defined so that

no deductibility is allowed for interest. If such royalties are introduced, the problem with interest will thus be reduced.

Administration of control and collection of government take in Greenland

It is part of the Government of Greenland's strategy to secure the presence of the required expertise and resources in order to ensure correct control and collection of taxes and duties from mineral resources companies. The Government of Greenland will secure this in part by co-operating with international audit experts within the area of mineral resources and in part by strengthening the control authorities.

5.8.5 Recommendations for future taxation of all metals and minerals, except for uranium, rare earth elements, gold, copper and gemstones

The following models are recommended, listed in order of priority:

Tax model no. 1 consists of:

1. Corporate/withholding tax at the rate applicable from time to time
2. Introduction of a 2.5% royalty on turnover where corporate/withholding tax is deducted from the royalty calculated

In the basic scenario, this will result in a government take of around 39.4%.

Motivation for model 1: This model secures Greenland a reasonable take already from the outset. At the same time, the model is believed to maintain Greenland's existing competitive power.

Tax model no. 2 consists of:

1. Corporate/withholding tax at the rate applicable from time to time
2. A 2.5% royalty on turnover
3. A 2.5% royalty on turnover where corporate/withholding tax is deducted from the royalty calculated

In the basic scenario, this model will result in a government take of around 44.7%.

Motivation for model 2: This model secures Greenland a higher take from the outset than the other models. However, the higher royalty rate involves a risk for the licence holder, because this royalty in reality becomes an additional expense compared to the tax level of 37% in a year where the royalty calculated cannot be reduced in full by the corporate/withholding tax paid.

Tax model no. 3 consists of:

1. Corporate/withholding tax at the rate applicable from time to time
2. Introduction of a 5% royalty on turnover where corporate/withholding tax is deducted from royalty calculated
3. A surplus royalty, based on gross profits with the spreads 25-30%, 30-40%, 40-50% and above 50%, at rates of 10%, 20%, 30% and 40%, respectively. Gross profits based on accumulated cash flow before interest.

In the basic scenario, this model will result in a government take of around 42.7%.

Motivation for model 3: This model secures Greenland a higher take from the outset than the other two and also has a progressive course via the surplus royalty. However, the higher royalty rate involves a risk for the licence holder, because this royalty in reality becomes an additional expense compared to the tax level of 37% in a year where the royalty calculated cannot be reduced in full by the corporate/withholding tax paid.

Tax model no. 4 consists of:

1. Corporate/withholding tax at the rate applicable from time to time
2. Introduction of a 1.5% royalty on turnover
3. A surplus royalty, based on gross profits with the spreads 25-30%, 30-40%, 40-50% and above 50%, at the rates of 10%, 20%, 30% and 40%, respectively. Gross profits are measured on the basis of accumulated cash flow before interest. The model is inspired by the surplus royalty model in Kazakhstan.

In the basic scenario, this will result in a government take of around 42.3%.

Motivation for model 4: This model secures Greenland a take already from the outset and also has a progressive course via the corporate/withholding tax as well as the surplus royalty.

5.8.6 Recommendations for future taxation of gold and copper

Based on the benchmark analysis of various tax systems and levels for gold and copper, there seems to be a possibility for Greenland to increase the level of its existing government take of 37.3% by a couple of percentage points.

This proposed tax model consists of:

1. Corporate/withholding tax at the rate applicable from time to time
2. Introduction of a 2.5% royalty on turnover where corporate/withholding tax is deducted from the royalty calculated

This will result in a government take of 37.4 - 37.7%.

5.8.7 Recommendations for future taxation of rare earth elements

Based on the benchmark analysis of various tax systems and levels for rare earth elements, there seems to be a possibility for Greenland to increase the level of its existing government take of 37.3% by a couple of percentage points.

This corresponds to the above for iron ore, gold, copper and zinc.

This proposed tax model consists of:

1. Corporate/withholding tax at the rate applicable from time to time
2. A 5% royalty on turnover where corporate/withholding tax is deducted from the royalty calculated

This will result in a government take of 38%.

5.8.8 Recommendations for future taxation of uranium

Based on the benchmark analysis of various tax systems and levels for uranium, there seems to be a possibility for Greenland to increase the level of its existing government level of 37.3% by 5-10 percentage points.

This corresponds to the above for iron ore, gold, copper and zinc. This proposed tax model consists of:

1. Corporate/withholding tax at the rate applicable from time to time
2. A 5% royalty on turnover

5.8.9 Recommendations for future taxation of gemstones

Based on the benchmark analysis of other countries with a production of gemstones, it seems to be common practice to charge a royalty on turnover. This royalty typically ranges between 5% and 7%.

Using South Africa and Tanzania as a benchmark, there are limits, though, as to how substantial the increase in government take can be.

If a royalty is to be added on top of the existing government take, there is a risk that the government take will reach an uncompetitive level. With gross profits in the basic scenario of 77%, a royalty on turnover will increase the government take by around 0.8 percentage points for each percentage point of royalty on turnover. With a royalty on turnover of 5%, the government take will thus come out at 41%. This level corresponds to Tanzania and is higher than South Africa.

If, by contrast, a royalty on turnover is introduced which corresponds to the London Mining model with a set-off between royalty and corporate tax, a higher royalty on turnover could be introduced without the percentage government take increasing. Even if it does not increase the percentage government take, it will nevertheless be an advantage to Greenland as it means that the government take will be captured at an earlier point in time. Reference is made to the above comments for iron ore, gold, copper and zinc.

It should in general be considered whether to introduce a profit-dependent royalty whereby the government take can be increased if the economy allows it, i.e. in the form of progressive taxation which will not be triggered until a certain gross profit has been reached. Reference is made to the above comments for iron ore, gold, copper and zinc.

It could in general be considered to phase in turnover-based royalty rates which are lower at the beginning with no or only limited earnings and which then increase to a higher level at a later point in the life of the mine where earnings must be expected to have increased.

For the gemstone area, it would not be a very obvious option to apply special terms for small-scale licences in the form of an exemption from the provisions on royalty.

The following models are recommended, listed in order of priority:

Tax model no. 1 consists of:

1. Corporate/withholding tax at the rate applicable from time to time

2. Introduction of a 5.5% royalty on turnover
3. A surplus royalty which will be based on gross profits above 40%, at a rate of 15%

In the basic scenario, this model will result in a government take of around 44.9%.

Motivation for model 1: This model secures Greenland a take already from the outset and also has a progressive course via the surplus royalty. However, the higher royalty rate involves a risk for the licence holder, because this royalty in reality becomes an additional expense compared to the tax level of 37% in a year where the royalty calculated cannot be reduced in full by the corporate/withholding tax paid. However, this risk is lower for gemstones than for other minerals.

Tax model no. 2 consists of:

1. Corporate/withholding tax at the rate applicable from time to time
2. Introduction of a 3% royalty on turnover
3. A surplus royalty which will be based on gross profits above 40%, at a rate of 15%

In the basic scenario, this will result in a government take of around 43.1%.

Motivation for model 2: This model secures Greenland a take already from the outset and also has a progressive course via the corporate/withholding tax as well as the surplus royalty.

Tax model no. 3 consists of:

1. Corporate/withholding tax at the rate applicable from time to time
2. Introduction of a 5% royalty on turnover

In the basic scenario, this will result in a government take of around 41.5%.

Motivation for model 3: This model secures Greenland a reasonable take already from the outset.

5.9 Administrative consequences of the choice of royalty models

Regardless of the specific royalty models chosen, there will be a need to strengthen the collection authorities' overall administrative resources.

A strengthening is to contribute to further securing a correct assessment of the mineral resources sector. In this connection, the use of international benchmarks and international audit companies will be only natural.

As regards the different royalty models presented in the preceding section, these are not believed in themselves to increase the need to strengthen the collection authorities as compared to the existing taxation model for hard minerals, which only involved the collection of corporate tax.

5.10 Strategic priorities with respect to minerals

- The Government of Greenland's objective over the next five years is to grant three to five mineral exploitation licences on an environmentally and socially sustainable basis. The mining projects may include:
 - The Isukasia (Isua) project (London Mining, northeast of Nuuk)
 - The ruby project (Fiskenæsset, south of Kuannersuit)
 - The Killavaat Alannguat/Kringlerne project in South Greenland
 - The Kvanefjeldet project at Narsaq in South Greenland
 - The Citronen Fjord project in North Greenland
 - The Anorthosit project in White Mountain in West Greenland
- In the coming strategy period, focus will be on the potential for occurrences of new major deposits of iron alloy and base metals, rare earth elements, gold and gemstones
- Analysis of the zinc potential of North Greenland is one of the areas which will receive special attention in the coming strategy period
- New initiatives to strengthen small-scale activities will be given priority, including reservation of special areas for this type of activity and strengthening of small-scale course activities at the School of Minerals and Petroleum
- The platform being used for the administrative management of mineral licences will be brought up to date. New and improved systems must be developed to handle spatial and geological data and to increase efficiency in the processing of applications, etc.
- New legislative and administrative frameworks must be established for an export control system for radioactive minerals as well as a system for implementation of the IAEA safeguards
- The specific regulatory tasks and draw on resources must be further identified
- The Self-Government must become subject to all relevant international obligations, agreements of international law and other international rules concerning uranium and other radioactive minerals
- A co-operation structure must be set up between the Government and the Government of Greenland concerning defence and national security policy matters of importance to export of uranium extracted in Greenland
- The preparations involved in establishing the regulatory framework, setting up the required administrative systems and procedures and accepting international obligations, etc. must be completed at the beginning of 2016
- In May 2014, applications on special terms in North Greenland will be accepted concerning predefined licence blocks directed towards the unique zinc potential of the area
- The accumulation of knowledge about Greenland's natural and environmental conditions must be strengthened through specific projects and surveys. The Environment Agency will use this knowledge to assess and plan potential new mineral resources activities having regard for local natural and environmental conditions, including to assess the necessity of giving priority to sensitive areas, e.g. areas with breeding colonies of birds

- Efforts will be made to carry out a number of new strategic environmental impact assessments in the coming strategy period with a focus on land and fiord areas in relation to mining
- Marketing efforts will be divided into three categories: 1) participation in industry events where the mineral potential of Greenland will be presented in connection with exhibitions, 2) marketing activities aimed directly at a country and/or companies and in order to attract investors, 3) official visits with the attendance of Government of Greenland member(s)
- The following government take model is recommended for all metals and minerals except for rare earth elements, uranium and gemstones:
 - Corporate/withholding tax at the rate applicable from time to time
 - A 2.5% royalty on turnover where corporate/withholding tax is deducted from the royalty calculated
- The following government take model is recommended for rare earth elements:
 - Corporate/withholding tax at the rate applicable from time to time
 - A 5% royalty on turnover where corporate/withholding tax is deducted from the royalty calculated
- The following government take model is recommended for uranium:
 - Corporate/withholding tax at the rate applicable from time to time
 - A 5% royalty on turnover
- The following government take model is recommended for gemstones:
 - Corporate/withholding tax at the rate applicable from time to time
 - Introduction of a 5.5% royalty on turnover
 - A surplus royalty, which will be based on gross profits above 40%, at a rate of 15%

The Government of Greenland will strengthen the control and collection authorities in order to secure Greenland the correct taxes and duties.

6 GeoSurvey Greenland (GSG)

Increasing global demand for hydrocarbons, metallic mineral resources and industrial minerals increases the need for geological expertise, both locally with respect to information and handling of geological data and with respect to assessing Greenland's mineral resources potential. Another important role is to co-ordinate international research groups so that their research may contribute to knowledge creation within the geotechnical area to the benefit of Greenland.

A GeoSurvey for mineral and oil/gas research (GSG) will actively contribute to geotechnical knowledge being utilised for the efficient and sustainable management of Greenland's mineral resources and environment to ensure that Greenland's mineral and potential hydrocarbon resources will make up an important part of Greenland's revenues. The GSG will safeguard Greenland's interests within geological, geophysical and geochemical data. The GSG will collect and keep these data for use in the development of Greenland's mineral resources as well as to heighten awareness of Greenland's mineral resources potential through marketing activities. Geological data will be stored in databases which will constitute Greenland's archive for information of new as well as old data – information of great interest to society and the industry.

The GSG will provide geological advice to public authorities on mineral resource questions and assist in the regulatory duties to be carried out in this area. A GeoSurvey will be a national geological data centre and is in that capacity to make data and knowledge available to authorities, educational institutions, etc.

The Danish GEUS has so far performed these functions in good and constructive co-operation with the Greenland authorities. A new co-operation agreement will thus be concluded with GEUS to maintain the good relations within, for instance, the projects area.

The establishment of an independent geological survey in Greenland is in this context to be viewed as a natural extension of Greenland's assumption of independent responsibility for the area of mineral resources.

6.1 Minerals

It is of decisive importance to the desired development within the area of mineral resources in Greenland that the Greenland geological survey is capable of producing a reliable and investment-friendly picture of the prospects of and conditions for mineral exploration and exploitation in Greenland. The most essential parameters in this connection are that Greenland is able to make probable that prospectivity is high, i.e. geological data and surveys which make probable the potential of commercial mineral deposits.

6.2 Oil/gas

The international financial/economic crisis has so far given rise to no drastic decline in the oil companies' long-term interest in Greenland's oil/gas potential. Rather the reverse. For instance, the so-called KANUMAS companies have shown considerable interest in utilising their preferential position in the waters off North-East Greenland. These are long-term commitments where the companies' time horizon for starting up actual production probably lies quite a few years ahead. These are thus also strategies which do not vary with

fluctuations in oil and gas spot prices and which intend to secure the oil/gas companies a long-term resource base.

Exploration activities for oil and gas are characterised by substantial investments and not least substantial exploration risks. A key element in oil/gas exploration is thus to maintain a continuously high level of exploration activity in different regions of Greenland. The reason for this is that varying degrees of exploration success must be expected in the various regions of Greenland. Consequently, it is impossible to predict in advance which region will first lead to the desired breakthrough in oil/gas activities.

6.3 Organisation

The GSG will be located in Nuuk with its good infrastructure and close ties to the political system. In addition, Nuuk is the place where companies set up offices and representations, which means that the geological survey will be close to the users of the companies that will need geological information. Today, the drill core archives are located in Kangerlussuaq and Narsarsuaq. The long-term aim is to bring together all functions regarding drill cores in Nuuk, to obtain not only a better administration and supervision but also to give the companies' easier access to the drill core archives.

The plan is for the GSG project to be realised in the strategy period, where the GSG will be on the Self-Government's budget. The current 5-year agreement with GEUS expires at the end of 2014. The GSG is to be an independent institution under the Self-Government, having the status of a state company. The GSG can participate in national and international research programmes and receive grants from research funds.

6.4 Examples of functional and key areas

Below are some examples of areas which a geological survey in Greenland should be in charge of.

Geological mapping with associated basic surveys is to be carried out on a regional as well as local scale and in areas of high mineral resources potential as well as in less known areas to seek to open up new areas for exploration activities.

Together with onshore mapping, ore geology is one of the core areas where expertise in mineral resources, mineralogy and geological processes is required. The mapping activities require use of advanced methods like, for instance, remote sensing and hyperspectral and thermal methods together with photogrammetric interpretations.

Before an onshore geological mapping project is initiated, regional **geophysical** data and **geochemical** data from, for instance, brook sediments should be collected. Both geophysical and geochemical data are used to single out favourable areas for additional exploration for ore deposits. The favourable areas for ore deposits are evaluated and 3D modelled, and data packs concerning an area are then made available to the exploration industry.

At present, less than half of Greenland is covered by geophysical data such as airborne magnetic and gravimetric data. Around two-thirds of Greenland is covered by regional brook sediment data. One of the first tasks is to prepare a plan for collection of data on the rest of Greenland. Geophysical data in particular are cost-consuming.

Geodata may be collected in co-operation with other science institutions, which with their access to Greenland are allowed to carry out research of special relevance to mineral resource exploration in Greenland against passing on all collected data to the GSG. A concrete indicator of industry interest is the considerable sale of commercial seismic data and other geophysical data on the waters off North-East and North-West Greenland.

Laboratories are an important part of a GeoSurvey to allow immediate preparation of tests, such as separation of sediment samples, cutting and grinding of rock samples and analyses of samples. In the long term, the possibility of performing these tests in on-site laboratories will be an advantage to Greenland, as it has the potential of attracting exploration companies as well as oil and gas companies which could lease facilities from the laboratories for a period of time and thus obtain the data needed to continue their exploration activities much quicker.

Within the **IT** area, a GeoSurvey must be capable of handling GIS programs for the making of digital geological, geophysical and geochemical maps as well as ore geological modelling. It must also be capable of interpreting both seismic, gravimetric and magnetic data as well as different types of log data. Furthermore, it must be capable of making advanced reservoir models in order for the maturity and generating potential of the reservoirs to be documented.

Databases are a very important part of a GeoSurvey. The GSG will continuously ensure that the databases are up-to-date.

All geodata about Greenland will be based in the GSG and compiled in databases. This applies to data collected by companies, scientific expeditions and public authorities. The GSG may also itself collect data, e.g. in co-operation with other scientific institutions which with their access to Greenland are allowed to carry out research against passing on all data collected to the GSG.

Contributing to the **education** of Greenland geologists and geophysicists and securing that **information** is communicated to the public and the surrounding world about Greenland's mineral resources and oil/gas are important tasks for a geological survey, and a good website will be important in that connection.

The GSG will also be in charge of **Ujarassiorit** campaigns.

The GSG will keep and also manage **drill core depots**. It will be the responsibility of the GSG to ensure that society, industry and citizens have access to geoscientific data about Greenland which are reliable and of the highest possible standard.

At present, there are three drill core depots in Greenland. There are two depots in Kangerlussuaq, one for drill cores from the mineral exploration industry and one for drill cores from the offshore oil industry. A third drill core depot is located in Narsarsuaq and mainly contains samples from Nalunaq. The mineral drill core depot in Kangerlussuaq is full. New drill core depots are needed. It would be natural to place a depot in Nuuk, which is currently the centre of heavy exploration activity. A modern drill core depot must be an integral part of a GeoSurvey.

6.5 Strategic priorities with respect to GeoSurvey Greenland (GSG)

- During the course of the strategy period, a geological survey of Greenland, GeoSurvey Greenland (GSG), must be established as a parallel to the Greenland Institute of Natural Resources. The GSG will be a sector research institution under the Self-Government

7 Sustainable development

The current development of the mineral resources sector must be based on sustainability. It is important that the development takes place in an environmentally safe manner, and the education system, infrastructure, industrial structure and the labour market, etc. must be adapted on an ongoing basis so as to best form part of and underpin the development. The strategy thus sets specific priorities as to which areas are to be explored in more detail and developed further.

7.1 Environmental protection

The Environment Agency for Mineral Resources Activities was set up on 1 January 2013 when Greenland Parliament Act No. 26 of 2012 to amend the Mineral Resources Act came into force. The field of responsibility of the Bureau of Minerals and Petroleum was divided between the Ministry of Industry and Mineral Resources, the Mineral Licence and Safety Authority and the Environment Agency for Mineral Resources Activities.

The Environment Agency for Mineral Resources Activities is responsible for administrative processing within all environmental areas in connection with mineral resources activities, e.g. companies' EIA reports (environmental impact assessment) in connection with applications for exploitation of mineral resources.

A key aspect of environmental protection within the area of mineral resources is that it has popular legitimacy. This means that environmental protection is in fact and is also seen as independent from the concession authorities. The amendment of the Mineral Resources Act in 2012 was a step towards establishing a politically and administratively free and independent environmental protection authority in the area of mineral resources.

In 2014, it will be decided how the division of political and administrative responsibility in the area of mineral resources is to be separated, between the licensing authority and the environmental protection authority. Specifically, the aim is to present a proposal to amend the Mineral Resources Act for environmental protection to be handled on a completely autonomous basis.

It is emphasised that environmental protection within the area of mineral resources may be considered a "pioneering area" in Greenland when viewed from the perspective of:

- the demands being placed on the companies
- the surveys being performed and the new knowledge about nature and environment being generated
- the contributions of the mineral resources sector to environmental protection and nature conservation, financially as well as technically.

The Environment Agency works closely together with the Danish Centre for Environment and Energy (DCE) under Aarhus University and the Greenland Institute of Natural Resources (GINR), which jointly provide external independent advice at a scientific level. For a number of years, DCE has provided scientifically-based advice on environmental regulation in connection with mineral resources activities in Greenland. The work has included, among

other things, environmental impact assessments, technical input in terms of the environmental studies which are relevant to make as well as environmental consultancy on a case-by-case basis. With the act to amend the Mineral Resources Act, this scientifically-based environmental consultancy has been carried on.

The co-operation with GINR and DCE is based on the promotion of a general accumulation of knowledge on environmental, climate and nature aspects in the area of mineral resources in Greenland. GINR and DCE hold up-to-date scientific knowledge and regularly carry out research studies and advise on the environment and nature in Greenland, which has created the basis for its thorough scientific background knowledge on these matters.

GINR will set up an environmental unit with special capabilities in the area of mineral resources and DCE's assistance with advice and task performance will be aligned to GINR's added technical expertise and capacity in the environmental protection field. Project assignments and various environmental and nature impact assessments are still intended to be carried out through a contractual co-operation between GINR and DCE.

When applying for an exploitation licence, the applicant must prepare an EIA report pursuant to s. 73 of the Mineral Resources Act. If the EIA report is approved by the Government of Greenland, it may form the basis of other licences and permits required to initiate mineral resource exploitation activities.

The purpose of an EIA report is to identify, predict and procure solutions for the potential environmental impact of the project. An EIA report must describe all project phases, from before project launch (the natural condition of the project area) and until after its completion when the project area must be monitored for a long period of time.

The existing guidelines for preparing an EIA report will be revised and expanded in 2014. The revision of the EIA guidelines will be carried out in co-operation with DCE and GINR. When revised, the EIA guidelines will go out to public consultation.

7.1.1 Strategic priorities with respect to environmental protection

- An amendment to the Mineral Resources Act will be sought implemented in 2014 which clearly establishes that the regulatory function in the environmental area was separated from the rest of the regulatory function in the area of mineral resources on 1 January 2013
- The work involved in further developing an independent environmental regulatory authority within the area of mineral resources includes, among other things, a closer integration with the activities of the already existing departments of the Ministry of Environment and Nature which support and reflect the independent environmental regulatory authority in the area of mineral resources
- The co-operation agreement of the Government of Greenland with the Danish Government about the Danish Centre for Environment and Energy's assistance in the area of mineral resources will be renewed in 2014
- A multi-annual plan will be introduced for the transfer of competence to the Greenland Institute of Natural Resources

- New and more detailed guidelines for the preparation of EIA reports for mining activities will be adopted

7.2 How to best integrate Greenland's business community in mineral resources development

Greenland's business structure is characterised by a lot of small and local businesses concentrated in towns and a few villages spread across an enormous geographical area. Transport between towns and villages takes place by plane, helicopter or ship. As a result, the individual towns function as very small and often isolated markets. The exception is the capital of Nuuk, where Greenland's biggest companies are located.

The public sector plays a major role in Greenland, and a number of the few big companies are owned by the Self-Government, often enjoying a near-monopoly status in their market. In addition to the public administration, the business structure in Greenland is characterised by skilled, service and traditional trades. Building and construction, transport services and business services will be the most essential industries where there will be a great demand for labour in step with an increase in oil exploration and mining activities.

The business structure in Greenland is characterised by many sole traders and small businesses with a few employees. This is also the case for the three industries which are very relevant in relation to the mineral resources industry. The businesses within these industries typically have less than 20 employees. Most of them have one to ten employees. Only a few businesses within the three industries have more than 20 employees and only six businesses have more than 100 employees.

In 2012, a number of interview surveys were performed with both Greenland businesses and international companies operating in the oil and mineral sector in Greenland, and they resulted in a GAP analysis describing the gap between the capabilities in demand by the mineral resources industry and the capabilities possessed by Greenland businesses today.

The GAP analysis concluded that a large majority of the respondents were small building and construction businesses and they had relatively little knowledge of the mineral resources industry. It was therefore estimated that there is a substantial need to enhance the capabilities of these types of businesses as well as among the medium-sized businesses with up to 100 employees (Rambøll, 2013: p. 1). The few big Greenland companies with more than 100 employees all have substantial knowledge of the mineral resources industry in Greenland, and they are typically able to provide a wide range of goods and services directly to the mineral resources industry.

The number of small and medium-sized businesses in the Greenland business structure poses a challenge as large volumes of goods and services are in great demand by the mineral resources industry, and the major part of Greenland businesses are of a size which does not allow them to supply the goods and services in the volumes which the mineral resources companies will demand. In addition, the oil and mineral companies often prefer to co-operate with one or two or a few subcontractors whom they already know. Therefore, the majority of all projects and services will be put out to tender under a few contracts or lots, and so their scope of such contracts and lots will make it difficult in economic terms or in

terms of size for Greenland businesses to compete for them. In that connection, it will mainly be the small subcontracts which the Greenland businesses will have the capacity to perform.

Another challenge faced by Greenland businesses is that the oil and mineral companies are subject to stringent requirements in relation to health and safety, environmental and other issues and, as a result, the companies have high demands when it comes to quality and service from their subcontractors, which only very few of the small and medium-sized Greenland businesses are able to meet today. In that connection, the mineral resources industry is very strict in their requirement that local suppliers must have knowledge of international safety and quality certifications. It is therefore estimated that only very few Greenland businesses have the capabilities required to act as main contractors (Rambøll, 2013: p. 8). As a result, the majority of Greenland businesses will supply goods and services to the mineral resources industry indirectly through subcontracts with the main contractor.

A third challenge is that Greenland's capability level is generally low, which is a major barrier in a society which is increasingly shifting towards an industry which has high demands when it comes to professionalism and quality (the Self-Government of Greenland, 2012: p. 55). The GAP analysis points out in this connection that, on the one hand, the mineral resources industry is generally seeking capabilities which the Greenland businesses often do not possess today. On the other hand, most small and medium-sized businesses in Greenland appear to be content with the status quo, and only very few focus on developing their business or developing the capabilities and of the business and its employees. This is a factor which contributes to maintaining a situation where the range of capabilities available is narrow and the level of capabilities is low, which is a significant challenge (Rambøll, 2013: p. 19).

7.2.1 Challenges

There is a great need for capability development, particularly for small and medium-sized businesses.

In that connection, there is a special need to create further co-operation and partnerships between Greenland businesses as the individual businesses do not have the capacity required to supply the volumes which the mineral resources industry will be demanding. Co-operation with foreign companies could also improve the local businesses' chances of winning contracts in the mineral resources industry.

Experiences from Canada show that local businesses have been dependent on foreign partners for access to the required know-how and capital, while foreign companies on the other hand may gain an edge in the contract tenders if they co-operate with local businesses (Niras, 2012: p. 54).

The GAP analysis concluded that Greenland businesses are very much in need of knowledge of and access to obtaining international safety and quality certifications in order to become competitive subcontractors. It is important in this connection that Greenland businesses become more aware of the importance of preparing safety plans and procedures at the workplace. That could be the first step towards a stronger focus on safety procedures for small and medium-sized businesses, which could then lead to the next step: obtaining international safety certifications. Similar experiences have been made in Newfoundland and

Labrador where local business used to have no tradition for taking safety procedures seriously, but that changed when the oil industry became a mature sector, and this has benefited the area of health and safety at work in general (Niras, 2012: p. 53).

As regards certifications, it is equally important that the oil and mineral companies accurately describe the certifications which they will be demanding so as to enable Greenland businesses to obtain the right certifications. The experience which Newfoundland and Labrador have had with the interest organisation NOIA, whose object is to create a network and co-operation between local businesses and the oil industry, is good (Niras, 2012: p. 55). It is thus recommended that a similar co-operative body is established between local Greenland businesses and mineral resources companies either within the framework of one of the existing employer organisations in Greenland or by establishing a new industry organisation for subcontractors to the mineral resources industry in Greenland. The organisation should have both local businesses and mineral resources companies operating in Greenland as its members.

The final conclusion of the GAP analysis is that the capability level of Greenland businesses in general is too low, and it is therefore recommended that additional capability-building programmes are offered to Greenland businesses also in the years ahead to improve their chances of making competitive bids for mineral resource project contracts in Greenland.

The capability-building programmes should be targeted at businesses with a clear and high-priority desire to become subcontractors to the mineral resources industry. The important thing here is that Greenland businesses should acquire capabilities which can also be used in connection with future mineral resource projects. There are many indications that early involvement of local businesses may be the key to capability building in the mineral resources industry (Niras, 2012: p. 50 and p. 57). The capability-building programmes should therefore focus on the areas which are not particularly knowledge-intensive or do not require special capabilities and where Greenland businesses stand a realistic chance of being able to provide services to the mineral resources industry. The capability-building efforts build on the experiences gained from the capability development project in 2012 and 2013, and in that connection a new capability-building programme could focus on the importance of the participants acquiring a number of basic certifications which are essential to providing services to the mineral resources industry.

7.2.2 Strategic priorities with respect to Greenland's business community

- The Government of Greenland intends to continue the capability-building efforts which have been made over the past couple of years via a contract with a private service provider. Specifically, tenders will be invited for a project in the form of a service contract with a focus on further building the capabilities of Greenland businesses and increasing their competitiveness as contractors in the mineral resources sector
- The Government of Greenland will invite all relevant parties to co-operate in the efforts to find the best way of involving the local business community in the mineral resources activities
- In 2014, the Government of Greenland and the Danish Government will present a joint report with proposals as to how to strengthen commercial business co-operation

between Greenland and Denmark in relation to the mineral resources sector and various other sectors

7.3 Is the infrastructural framework aligned to the industry's needs?

7.3.1 Is it possible to procure alternative financing of infrastructure facilities?

When mineral resources companies open mines in Greenland, one of the biggest challenges faced by the companies is often how to finance mineral resource projects. In order to be able to support this financing in the best way possible, it may be necessary to clarify how Greenland can best help these projects along. This will be particularly relevant in connection with investments in the major mineral resource projects which are expected to be launched in the coming years. In Alaska, a body has been established (AIDEA – the Alaska Industrial Development and Export Authority) with the aim of furthering, developing and promoting economic growth in Alaska through different types of financing and investment. The purpose is to generate employment opportunities in the north-western part of Alaska through the development of a transporting system to support, for example, mining activities.

In the case in point from Alaska, structure and ownership are in the form of a private company and are thus not supported directly by the State. The source of finance is sale of bonds.

At the Red Dog zinc mine in Alaska, AIDEA invested around DKK 1.4bn in a road project around 80 kilometres long from the mine to an established harbour. The road is designed for a greater number of users and can therefore be used in connection with other projects in the vicinity. It is thus important for the investment to have a long perspective and thereby seek to create spill-over to other projects.

The operator of the Red Dog zinc mine has entered into an agreement with AIDEA until year 2040 concerning permission to use the road. The company pays a road charge to use the facility and must operate and maintain the road. In addition, there are plans to connect another nearby project to the network so as to further strengthen business earnings.

By separating parts of a project, for instance because parts of the investments can be transferred to a company which can manage this independently of the mining company, it will in principle be possible to reduce the often substantial capital investments faced by the companies. In this way, several parties acting together will be able to raise the financing necessary for the project and thereby hopefully increase the likelihood of profitable and lasting investments in Greenland.

In some areas, the model may be compared to public-private partnerships (PPP).

At an international level, experiences from using PPPs have been mixed. It should therefore be clarified whether a similar financing arrangement in a public-private partnership would be possible in Greenland. The special feature about PPPs is that tenders are not only invited for the construction of a facility or building, but that financing, design, establishment as well as operation and maintenance are joined in a single tender.

A PPP project will typically involve a considerable investment from the private partner, which will be paid on an ongoing basis by the public partner during the contract period. In that way, PPP projects are distinct from traditional public projects in that there is a transfer of operating risk over a long contract period, typically stretching over 20-30 years.

Internationally, the PPP model is used in a wide range of different areas. Experiences have especially been drawn from projects within infrastructure, education, sports, health as well as public administration buildings. Positive as well as negative experiences have been drawn from PPPs. In some situations, PPPs can result in socio-economic gains in commercial projects which would otherwise not have been carried out. One of the reasons for this may be lack of financial capacity or because new knowledge and capabilities are added through the project.

However, a PPP project also involves material risk elements which will have to be included in the overall assessment. First of all, the total costs involved in PPP projects will often be higher than in traditional public financing. Additional transaction costs are incurred and the interest rate level in PPP financing is usually higher than the interest rate level for a loan raised by the government. Secondly, PPP projects may reflect that project financing is chosen in order to keep certain projects out of the overall political priorities. In some countries, there are also examples of PPP financing having been used in order to keep the directly calculated public debt artificially down. It is thus important to ensure that all public obligations are included in the calculation of the public debt and that all investments directly or indirectly payable by the government are given overall priorities.

In any project where PPP is considered, an assessment must be made of whether the advantages of a PPP outweigh the disadvantages and what can be done to compensate for the disadvantages.

In relation to mineral resource projects in Greenland specifically, it should be examined how mineral resources companies can co-operate with public or semi-public institutions and/or with institutional investors on the basis of the PPP model. From the perspective of the public sector, it must especially be clarified how it can contribute, not necessarily financially, but especially with other resources which are already available.

7.3.2 Strategic priorities with respect to alternative financing of infrastructure facilities

- The Government of Greenland will invite industrial partners to jointly examine whether it is possible to support the mineral resources sector by encouraging the financing arrangement known as public-private partnership (PPP) – a co-operation between public and private interests or, in the alternative, between one or more mineral resources investors and institutional investors. A special feature of PPPs is that tenders are not only invited for the construction of a facility or building, but that financing, design, establishment as well as operation and maintenance are joined in a single tender

7.4 Do we have optimum conditions for supply of energy to the mineral resources sector?

The part of the industrial world which has ratified the Kyoto Protocol has committed to a marginal reduction of the greenhouse gas emissions of the individual countries in the reference year 1990. However, this also means that these countries can emit most of their carbon dioxide production without having to buy carbon credits or the like.

The launch of energy-intensive industry in Greenland, such as mines, oil production, aluminium smelters, will result in a significant increase in Greenland's current emissions compared to the reference year and will thus, by extension, without a territorial exemption impose carbon credit expenses on Greenland which by far exceed what the corresponding industries in other parts of the world must pay. This will weaken Greenland's competitive standing and thus hamper the initiation of mine projects and the like.

In conjunction with the international negotiations conducted for a number of years about the conclusion of a global climate treaty in continuation of the Kyoto Protocol, the Government of Greenland and the Danish Minister for Climate have therefore agreed that Greenland is to be secured a territorial exemption from Denmark's commitments to reduce its carbon dioxide emissions as regards the Kyoto Protocol's second commitment period until 2020.

At the same time, however, the policy of the Government of Greenland is to seek to minimise emissions as much as possible. In relation to the mineral resources sector, this means that alternative energy sources such as hydro power are to be applied where practicable.

Mining companies are to set up and finance their own utility systems etc. and are required under the provisions of the Mineral Resources Act about best environmental practice to explore the possibilities of establishing hydro plants as an alternative to fossil fuels.

The topographical factors are important within many areas. It must be possible to create sufficient head, i.e. the terrain should not be too flat. A lake must be available which can be used as reservoir, as damming in a flat area will be too expensive.

The climatic conditions are of decisive importance, both with respect to precipitation and/or deglaciation and also with respect to temperatures which may cause ice problems. Especially the occurrence of permafrost may add to the costs of a hydro plant. As a result, the possibilities of hydro power are mainly limited to the western coast from South Greenland to the Disco Bay.

The topography of the eastern coast does not include a lot of high-lying lakes. In addition, most of the coast has permafrost. Nor does the topography of North Greenland include any lake, and precipitation is very low. The west coast north of Upernavik is without land areas with lakes.

The Kvanefjeld and the Kringlerne may be potential users of hydro power. On first analysis, two possibilities seem to exist for hydro power: Johan Dahl Land and extension of Qorlortorsuaq.

The supply of the Isua mine with hydro power could be of immense importance to Greenland's overall oil displacement. Nonetheless, the possibilities are limited as a result of the reservation of the Imarsuaq lake for the Alcoa project.

The table below illustrates the estimated energy requirements and provides a status of the analyses of the hydro power potential among the mining projects which in 2013 have either submitted an application for an exploitation licence or have announced that they are planning to do so.

Figure 24: Estimated power requirements and examined hydro power potentials.

Mining company	Location	Requirement [MW]	Analysis completed	Relevance of hydro power
Ironbark Zinc	Citronen Fjord	23		Not deemed relevant as a result of climatic and hydrological conditions (NIRAS, 2013).
Arctic Mining	Maarmorilik	6.1	Possibilities examined.	Not deemed relevant as hydro power renders project unprofitable (NIRAS, 2013).
Hudson Resources	At Kangerlussuaq	3-5	Mapped possibilities.	Doubtful whether it is relevant due to project size.
London Mining	Isukasia (Isua)	150	Three possibilities examined.	Hydro power is currently not an option as the water in the area has been reserved for the Alcoa project.
True North Gems	Fiskenæsset	/ 3	Potential localised but not analysed further.	Not deemed relevant as a result of project size (NIRAS, 2013).
Tanbreez	Kringlerne	3.7	Possibility of supply from Qorlortorsuaq.	Should be examined whether in the course of time any mine opened can use hydro power for power supply.
Greenland Minerals & Energy	Kvanefjeldet	25	Potential in Johan Dahl Land.	The company has initiated new hydrological measurements (NIRAS, 2013).
KMGH	Malmbjerget	?		

Source: NIRAS, 2013, and the companies' feasibility studies.

The table shows that hydrologically and geologically, a hydro power potential does not necessarily mean that the mines will automatically be supplied with electricity from hydro power. The establishment of hydro power in connection with mines depends on a number of factors (NIRAS, 2013):

- 1 The collection and availability of data, e.g. hydrological and geological data, from prospecting activities.
- 2 Distance from the mine to the hydro plant
- 3 The hydro plant must be capable of meeting the demands of the mining activities
- 4 The life of the mine must be long enough to cover the plant's depreciation period
- 5 In most cases, an emergency system will be established in any event which is based on a diesel generator

7.4.1 Strategic priorities with respect to energy supply to the mineral resources sector

- The Government of Greenland will invite industrial partners to jointly examine the possibilities of co-ordinating public and private interests on a commercial basis so as to provide for the best possible utilisation of the hydro power potentials in connection with future mining projects

7.5 How to align airports to the needs of the mineral resources sector?

Mining as well as oil companies have a substantial need for labour and spare parts being flown in and out. Access to an airport for fixed-wing aircraft and related waiting facilities are thus important.

In the oil companies' exploration phase with test drillings there is a great need for labour to be flown in from destinations outside Greenland. This puts the waiting facilities of the relevant airports under substantial pressure as the oil companies need separate waiting facilities for their personnel.

7.5.1 Existing airport structure and air traffic

Today, there are two civil airports with runways along Greenland's west coast which are capable of servicing jet planes to and from areas outside Greenland (Atlantic airports). These are the airports in Narsarsuaq and Kangerlussuaq. The two airports are operated by Mittarfeqarfiit (MIT).

Apart from the Atlantic airports, there are eleven airports which can be used by small fixed-wing aircraft (e.g. Dash 8s or 7s). These airports have been built on very rocky terrain near the coast and the runways are too short for the bigger aircraft types normally used for overseas flights.

7.5.2 The companies' current experiences and future challenges

Oil/gas exploration

In connection with Cairn's exploratory drillings in 2010 and 2011, Cairn Energy chartered a jet plane to take personnel from Edinburgh to Kangerlussuaq three times a week. To transport personnel from Kangerlussuaq to the Greenland towns with the advance supply base harbours, Nuuk and Aasiaat, Cairn Energy chartered Dash planes from Air Greenland.

The main helicopter bases were located in Nuuk and Ilulissat, respectively, as a result of their hangar facilities. However, Aasiaat airport functions as an additional advance supply base in Greenland for the drilling activities west of Disco. In connection with the potential exploratory drillings in Baffin Bay before the end of 2018, hangar facilities for helicopters are expected to be in strong demand almost regardless of the level of activity (COWI, 2013). In

connection with future exploration activities, airports will be selected on the basis of the below criteria:

- Dash 8s and Dash 7s must be able to land and take off from the airport(s)
- The airport(s) must be located within the flight time required under the SAR contingency plan
- The airports must have hangar facilities for helicopters
- Distance to the exploration fields

Mineral exploitation

The company True North Gems is considering whether to establish a heliport/helistop in connection with potential exploitation activities. The heliport/stop must be constructed in accordance with the “Provisions for construction and operation of heliports” and is envisaged as being licensed for big helicopters. Following establishment of the mine and start-up of operations, London Mining is considering whether to establish a runway. The large number of workers at the mine means that a separate runway at the mine would probably be expedient. The runway must be approved for use by planes like Dash 8s and 7s. The need to fly foreign labour in directly from Canada or Iceland will require set-up of the facilities required under the aviation rules to allow flights directly to and from other countries.

The company Tanbreez states in its feasibility study that it expects to establish a heliport/stop and, like True North Gems, Tanbreez expects that this heliport/stop will be capable of servicing a bigger type of helicopter. Tanbreez does not expect the heliport/stop to be used other than for project-related purposes. Tanbreez is further considering whether to leave the actual flying to Air Greenland.

In its pre-feasibility study, the company Ironbark Zink has carefully considered the issue of airports. During the construction phase, which is expected to stretch over two, perhaps three years, the company expects that the landing facilities used in the exploration phase will be sufficient. This will, however, depend on the regulatory requirements which will be imposed if the airport is used on a more permanent basis, including in relation to the number of flights and the number of passengers per flight.

A gravel track has been used in the exploration phase, which can be used during summer by small planes (e.g. Twin Otters), and a winter runway on the sea ice, where it is possible to use relatively big planes like the Hercules for freight.

In the operating phase, it will be necessary to establish a more permanent runway which has been approved for regular traffic. Maritime traffic is only possible for a short period of time from July to September, and personnel shifts as well as a major part of the necessary supplies will have to take place by plane.

7.5.3 Strategic priorities with respect to airports

- The Government of Greenland will initiate a more thorough process to identify mineral resources companies’ need for base airports for the next five years, the flexibility of their flyings and the perspectives in sharing facilities with other exploration companies and existing users, which may form the basis of a prioritisation of which airports

should be extended with a hangar and waiting facilities in order to meet the companies' needs

- This process should include the derived effects in the air transport sector and provide the basis for future priorities in relation to an investment in the airport area. The reason for this is that the scope of the exploration activities in Baffin Bay as well as off the coast of South Greenland in the next years is still subject to a great deal of uncertainty. As a result, any public investment must be examined in the context of the requirements of society as a whole
- Based on the information received from the above, it is recommended that the peak requirement is compared against the capacity available in the relevant base airports
- The Government of Greenland will explore the possibilities of using the facilities at Pituffik/Thule Air Base in an exploration phase. The airport in Pituffik has an optimum location for the northern concessions in Baffin Bay and has all of the necessary facilities. In addition, it will be able to serve as a point of departure for an improved SAR coverage of the area. A more simple procedure for the concession companies' potential use of facilities at Pituffik is deemed to significantly change the possibilities of air transport service to the northern concessions
- As regards the capacity of the existing infrastructure at the airports, the concurrence of activities at the individual concessions will be of decisive importance. Activities in this context mean not only the activities of the mining companies but also the offshore projects and the activities related to daily air traffic in the Greenland society
- An analysis should be prepared of the existing traffic structure for the purpose of ensuring maximum Greenland participation in mining projects

7.6 Mineral resources companies' need for harbour capacity

7.6.1 Oil/gas

The oil companies wish to minimise their supply costs, and in the exploration phase the companies and their subcontractors will thus need and use harbours which are located as close to the fields as possible. Short distances reduce the run for supply ships, which improves overall operations.

The offshore industry's supply ships are typically 70-100 metres long and need a water depth of around eight metres, and each operator is assumed to require around 5,000-10,000 square metres of storage space.

The companies need a supply base which can receive supply ships, any hotel ships or the like. The base is to function as a place to store supplies of drill pipes, containers for materials, chemicals, emergency response equipment, etc. and must be capable of offering repair facilities for machinery, engines, etc. In addition, the base must be capable of supplying ships with, for instance, drinking water and bunker oil and receiving waste from ships and drilling rigs. The base must also be capable of accommodating a number of administrative functions for the operators.

In the exploration phase, focus will naturally be on avoiding permanent investments and on being sufficiently manoeuvrable to be able to respond to changing conditions and, if necessary, relocate or scale the activities up or down. For this reason, in connection with

their exploration activities so far the companies have been tolerant of the need to spread out on to more towns, even though that has not been the best solution for them.

The activities make the following overall demands on the ideal harbour in an exploration phase: Big accessible berth with a water depth of at least eight metres and connected storage yards. Being 70-100 metres long, the supply ships will require a berth of around the same length. Special mooring systems permit shorter berths, if necessary. An operator is estimated to need an area of around 10,000 square metres in connection with the exploration activities. Sufficient water supply. Well-functioning handling facilities (cranes and trucks, etc.) and fair weather conditions.

In connection with the exploratory drillings in 2010 and 2011 at Disco West, Cairn Energy used Aasiaat as its primary base harbour and Nuuk as a secondary base harbour. In connection with the exploratory drillings off Nuuk in 2011, Nuuk was used as a secondary base harbour instead of Sisimiut as it did not have sufficient facilities for storage of materials (lack of rear area) or berthing facilities.

The experiences drawn from Aasiaat were that it had very limited space for storage and materials. Also the Nuuk harbour had limited storage space and it was therefore necessary to transport materials through town by truck to/from the storage yard at Nuuk Imeq on Qeqertanut. A storage yard was established in Qinngorput in the summer of 2013.

The harbour facilities are generally, and specifically in Nuuk, under pressure in Greenland from coasters, Royal Arctic Line's supply ships, cruise ships and fishing boats, and the areas available for storage in proximity to the harbours are very limited.

7.6.2 Minerals

A common characteristic of mining projects is that they are often located in open land areas outside existing town and village communities and without any connection to infrastructure such as harbours and, as regards some of the projects, in relatively inaccessible regions of Greenland where climatic conditions like ice present major challenges to maritime traffic. This means that shipping harbours will typically need to be established in connection with the projects.

To the extent possible, mining companies use the already existing infrastructure such as harbours in connection with exploration activities and the subsequent establishment of mines and related facilities.

Maps of areas outside the urban communities and the existing harbours in Greenland are only available to a very limited degree. This applies to maps of land areas (topographical maps etc.) as well as maps of sea areas. This means that the companies themselves must develop the necessary maps on the basis of their own surveys.

The need for harbour facilities in connection with extension and production with respect to draught, length, etc. depends on the individual mineral resource-specific requirements to the vessels which mining companies will have in connection with the transport of products and supplies.

As a result, mining companies will often need to establish new berths near the mine, dimensioned to match specific requirements with respect to vessel sizes etc.

Maritime traffic from the mines is expected to take place by use of vessels around 180-250 metres long, i.e. vessels requiring berths with water depths of at least 15-20 metres. These vessels will therefore not be able to use the existing harbours.

7.6.3 Strategic priorities with respect to harbour capacity

- The Government of Greenland will examine which of the harbours along the west and south coast of Greenland may best, in terms of capacity as well as location, be extended and upgraded to main supply base for offshore activities in order to be capable of handling two or more operators involved in exploration activities, as seen in relation to proximity to airports
- The examination will include the derived effects in the area of transport by sea and provide the basis for future priorities in relation to an investment in the harbour area. The reason for this is that the scope of the exploration activities in Baffin Bay as well as off the coast of South Greenland in the next years is still subject to a great deal of uncertainty. As a result, any public investment must be examined in the context of the requirements of society as a whole
- The mining companies must themselves examine and determine their physical needs in relation to transport by sea, both as concerns supplies and also as concerns transport of products, i.e. the possibility of establishing new harbours near the mines in relation to access, climatic conditions and plant engineering challenges

7.7 Mineral resources companies' telecommunication needs

Greenland's telecommunications infrastructure consists of a submarine cable to Iceland and Canada, a radio link on the west coast of Greenland between Nanortalik to the south and Uummannaq to the north and satellites covering areas (East and North Greenland) which are not connected to the submarine cable or the radio link.

The companies' needs differ, depending on the project phase they are in and on whether it is a mining company or an oil company. When minerals exploration companies carry out prospecting and exploration activities, satellite phones and the like will often be sufficient to cover their telecommunications needs. This does not challenge the existing telephone network and its capacity to any significant extent. A mining company in the construction or extraction phase, by contrast, will need to establish certain installations and facilities as a result of its telecommunications need in order to obtain connections of the required capacity to the Greenland telecommunications network and to the global network.

By statutory order, TELE Greenland A/S has been granted a concession to establish and operate telephony and data communications services. However, the concession holder must tolerate that the concession may be restricted as a result of deregulation/privatisation.

7.7.1 Oil/gas exploration

In connection with its exploratory drillings west of Nuuk and west of Disco in 2010 and 2011, Cairn Energy used a VSAT connection provided by a foreign operator, which was a satisfactory solution for the company. Solutions of this type require an authorisation from the

telecom agency of Greenland. TELE has stated that it supplied capacity via KU bands capacity.

Exploration for minerals

According to TELE Greenland, between seven and eight VSAT terminals were in use during the autumn of 2013 in connection with minerals exploration activities. This solution has a capacity of between two and four end-users with their own telephone number and makes it possible to use faxes and IP telephony. TELE Greenland expects to be able to offer mobile telephony via VSAT from 2014. More precisely, the test for a mobile solution is expected to be completed during the first half of 2014. A successful test means that TELE Greenland will be able to make eight to ten mobile telephone numbers available, facilitated via VSAT.

7.7.2 Construction and production phase for mines

In the construction and production phase, mining companies need to establish connections to the Greenland as well as the global network. So far, TELE Greenland has thus offered services the use of which requires a fixed satellite dish or a link connection.

As regards the latest mining operation in Greenland, TELE Greenland has a radio link connection to the gold mine in Nalunaq as well as a satellite connection with a fixed satellite dish to the olivine mine at Fiskefjorden south of Maniitsoq. That allowed the close to 140 workers at the Nalunaq mine and the close to 50 workers at the mine at Fiskefjorden to communicate via the Internet, fixed-line telephones and mobile telephones.

In connection with the launch of its large-scale project at Isukasia (Isua), London Mining is planning to establish local networks at the harbour area as well as at the processing plant based on fibre cable connections. These two local networks are intended to be connected by a fibre cable running along the planned road between the processing plant and the harbour. Communication to and from the networks in the mining area is expected to probably take place via satellite. However, TELE's preferred solution here is a link connection with terminal stations and possibly repeaters (intermediate stations).

True North Gems, which in the last half of 2013 submitted an application for permission to exploit a ruby deposit at Aappaluttoq, is expecting to have around 60-70 workers in the operating phase. According to its pre-feasibility study, the company expects its telecommunications to be transmitted by satellite. TELE Greenland has offered to provide a radio link connection.

Tanbreez, which also submitted an application in the autumn of 2013 for permission to exploit a deposit at Kringlerne in South Greenland (south of Narsaq and west of Qaqortoq), has stated that they expect to establish a VSAT connection to their project. As a result of the relatively limited capacity provided by the VSAT connection, external communication from the mining area is intended to be possible only from administrative work stations. During the course of the two-year construction phase, the number of workers is expected to range from 30 and up to as many as 140 persons in the summer months.

In connection with an exploitation of the zinc and lead deposit at Citronen Fjord, which lies at around 83° N, the only means of communication available is Iridium's satellite services. The

company intends to use Iridium’s OpenPort service. As a result of the high satellite communication costs, the telecommunication options made available by the company to the workers for work-related and not least private purposes will be somewhat limited. However, the workers will be able for their own account to use the other communication services offered by Iridium, in case of a bigger communications need than can be accommodated by the capacity made available by the mining company.

7.7.3 Strategic priorities with respect to telecommunications

- The Government of Greenland will analyse whether it would be expedient to deregulate the implementation and operation of telecommunication systems in connection with mining and mineral resource projects

7.8 Labour market and employment

The recruitment of Greenland labour for the mineral resources sector depends in part on the outcome of the negotiations of the impact and benefit agreements (IBA agreements) with the licence holders, which lay down the levels to be pursued, and in part on the success of the labour market efforts, which are to ensure that the labour force matches demand and is able to find the jobs.

Today, Greenland has no joint collective public job placement service on the Internet as we know it from jobnet.dk in Denmark or from platsbanken.se in Sweden, but a number of small job banks which are interest-driven and a single professional job advertisement market which is connected to the newspaper SermitsiaqAG. A collective public job portal has been adopted and is expected to be developed within the next few years.

However, successful recruitment often requires prior upskilling and reskilling. The individual worker must usually attend several courses in order to be able to match the requirements of the mineral resources sector, and many functions require hands-on experience. The industry has high requirements – but is also used to upskilling unskilled labour through their own on-site training courses and programmes. As regards time frame and available resources, it would therefore make most sense to spend the public resources on upskilling initiatives which may lead to long-term employment.

The expected employment figures for the mining projects which are at the most progressed stage can be seen from the table below.

Figure 25: Expected employment, progressed mining projects.

Project	Geographical location	Expected application for exploitation	Expected jobs (operation)	Expected jobs (construction)
Eudialyt/rare earth elements	Killavaat Alannguat (Kringlerne) – between Narsaq and Qaqortoq	2013	80	Around 35-135
Ruby/sapphire	Qeqertarsuatsiaat (Fiskenæsset)	Application received in 2013	Around 60-80	Around 40-50
Iron ore	Isukasia (Isua) – north of Nuuk	Application received in 2012	680-810	Peak: Around 3,300
Zinc/lead	Citronen Fjord – North Greenland	2013/2014	Around 300	-

Rare earth elements/ uranium	Kuannersuit (Kvanefjeldet) – Narsaq	2013/2014	Around 380	Around 1,000
Anorthosit	Søndre Strømfjord close to Kangerlussuaq	2014	Around 50	40

7.8.1 The mining industry's labour need in the construction phase

If it is assumed, by way of example, that three mining projects (one large-scale project and two small ones) start up at the same time only a few years apart, the labour need in the construction phase could be more than 3,400 jobs annually. It is clear that even with massive efforts being applied to adapt Greenland labour to jobs in the mineral resources industry, Greenland labour will not be able to fully meet the needs of the mineral resources sector. Foreign labour will thus be needed which can play a part in creating the basis for a mining industry with jobs of a long-term character.

7.8.2 The mining industry's labour need in the operating phase

How much Greenland will benefit from the mineral resources sector will be determined by the extent to which labour demand in the operating phase is covered by Greenland labour to the furthest extent possible.

In the operating phase, three simultaneous projects would generate around 1,300 jobs, distributed on the following skills levels:

Around 60% of the jobs are expected to be filled by unskilled workers with quasi-specialist worker courses.

Around 30% of the jobs are expected to be filled by skilled workers.

Around 10% of the jobs are expected to be filled by workers with further education.

In the operating years, the number of applications concerning residence and work permits ending positively should come out at around a minimum of 400 annually ⁵, i.e. the number of reviews has more than doubled compared to current figures.

7.8.3 Labour in the exploration phase in the oil industry

Exploratory drillings, seismic surveys and other forms of oil prospecting activities are specialist work mainly performed by highly-skilled specialists for a short intensive period during the summer half-year.

Such activities involve opportunities for Greenland workers especially within cargo and logistics, in guard and security functions as well as within servicing of oil rigs and oil exploration vessels. Greenland labour is also used for tasks in connection with wildlife observation.

⁵ "Report on immigration", 2013. Calculations based on estimate of labour need, length of service and a marked increase in the share of Greenland labour in the operating phase. Several reviews end in rejection by the Danish Immigration Service. The review of these applications is added to the above figures.

In connection with Cairn Energy's test drillings in 2011, the total number of Greenland workers was approximately 7%, around 50 persons, including workers at Cairn's subcontractors. The exploration phases in the oil industry thus do not generate extensive employment opportunities but may be a way into the industry for the persons in question in the long term.

7.8.4 Development of local government

The development in the area of mineral resources will affect the administration of the labour market area at local government as well as Self-Government level within a number of areas. Focus will thus be on general upgrading and upskilling of the local authorities in co-operation with the responsible departments in order to be able to handle these challenges.

Local government plays an important role in connection with future mineral resource projects and projects may affect the finances and development of the individual local authorities. The local authorities must thus be strengthened in terms of actively getting involved in IBA negotiations in connection with future mining projects.

Despite demands for use of Greenland labour in connection with mineral resource projects, there will be a need to strengthen the labour market offices in order for them to be able to handle foreign labour. As mentioned above, the national job portal is intended as an active tool which is available to local government when assigning jobs to the unemployed. The launch of the portal may have administrative consequences to the individual local authorities.

In addition, focus will be on upskilling local government, e.g. in relation to their legal competences in order to prepare them for the development of the mineral resources sector. For instance, separate units could be set up at the local authorities to handle and co-ordinate these administrative and organisational challenges. It could be done in co-operation between the Self-Government and the individual local authorities.

In order to obtain the best effect of these efforts, it is decisive that the required interaction is created between local government and the Self-Government and that the right courses etc. are offered to the persons involved. The skills requirement of the public sector will therefore be analysed.

7.8.5 Strategic priorities with respect to labour market and employment

It is key to the welfare of Greenland in the long term that labour market initiatives receive increased attention in the years ahead and that they underpin industries where there are jobs to be had. The needs of the business community and of society should thus be absolutely pivotal to the development and adaptation of workers' skills, mobility and employability.

The Government of Greenland has initiated the preparation of a comprehensive plan to combat unemployment, aiming at cutting it in half before the end of 2017. Some of the crucial elements of the plan are as follows:

- Focus on IBA agreements, with close co-ordination between the mineral resources industry, the social partners and the public authorities, one of the aims being to increase local employment through recruitment programmes, upskilling, involvement of Greenland contractors, etc.

- The matching efforts must be intensified in order to be able to assign relevant labour to the mineral resource sector
- The number of course participants at qualifying courses under the project to develop skills for people without an education (PKU) must be increased. A separate skills development strategy must be formulated which accommodates the needs of the mineral resources sector as well as the underlying businesses
- Vacant positions must be assigned nationally via a joint public job portal, which also provides information about new job types, reskilling possibilities, upskilling courses, etc., at all levels of the labour market
- The guidelines for the Mobility Promotion Fund must be adjusted so as to support the new industrial structure
- Young people who are currently unemployed must be upskilled for later education via the Piareersarfiit centres
- The skills requirements of the public labour market administrations will be analysed

7.9 Training

Mining projects and oil/gas projects have different needs for labour and different requirements to the qualifications to such labour, just as the qualifications required of labour will differ depending on whether the project is in the construction phase or the operating phase.

The construction phases of mining and oil/gas projects will often imply a comprehensive development of infrastructure in the form of harbours, mining facilities, roads, energy supply, housing, etc. For this phase a large labour force is needed for a short period of time with a variety of different skills ranging from unskilled workers to highly specialised engineers. Part of the labour force already has these qualifications, but it must be expected that the part of the labour force needed who possesses the required skills or can be freed up from other sectors will not be sufficiently large.

In the production phase of mineral resource projects, the need for labour will be wide-ranging from unskilled workers to highly educated academics and engineers.

Below is an estimate of the expected demand for labour broken down on a number of functions.

Mechanics	150-200
Electricians	50-90
Machine operators, crane operators, etc.	200-300
HWS	8-20
Welding operators	10-40
Other skilled groups	15-50
Operators of processing plant etc.	25-70
Terminal and dock workers	25-100
Catering and cleaning	60-90

Administrative etc.	40-80
HSE and health service	10-20
IT	
Unskilled workers	30-70
Blasting experts	6-20
Geologists, engineers, laboratory technicians, etc.	10-20
Other occupational groups, including oil exploratory drillings	20-100

Figure 26: Expected need for labour based on two big open pit mines and three small mines.

A large part of the labour force has no or only limited formal education, see figure 27 below. In recent years, therefore, intensive focus has been on ensuring that more young people and others fit for work get access to education or upskilling to enable them to find employment in the relevant industries in step with developments in society.

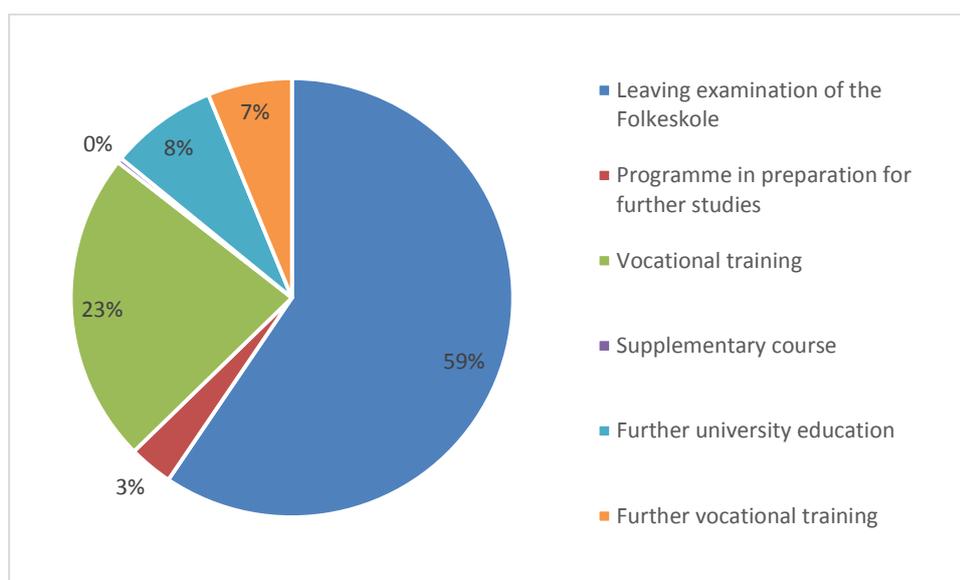


Figure 27: Educational profile of persons between 24 and 65 years living in Greenland in 2011.

Education/semi-skilled workers	Number of persons
Mechanics	240
Electricians	148
Terminal and dock workers	152
Machine operators (from the School of Minerals and Petroleum)	33

Figure 28: The number of persons in the Greenland labour force within selected functions.

As can be seen from the above table, positions within the selected functions can already today be filled by Greenland labour. This will have serious consequences for the surrounding community, though, as it will result in a serious lack of skilled workers elsewhere. In a status quo situation there will thus be a need to import foreign labour to fill the jobs in the mineral resources sector or in the surrounding community.

The wish to develop the mineral resources sector brings with it a need for training and upskilling programmes to reflect the need in the coming years for a labour force with the specific qualifications which the mineral resource industry will be demanding.

7.9.1 Strategic priorities with respect to training

- Training and upskilling initiatives and programmes must be targeted at securing jobs for parts of the Greenland labour force in the building and construction industry. In the construction phase of mineral resource projects the need for labour will be concentrated around building and construction projects. The qualifications which the Greenland labour force must have in order to be employable in these projects are qualifications which can also be used in the building and construction sector in general
- More apprentice/trainee jobs. If some of the jobs in the construction phase are to be filled by Greenland labour, without this resulting in a lack of skilled labour elsewhere in Greenland, it will be necessary to ensure that more people are able to get craftsman training, hence the need for more apprentice jobs. Therefore, efforts must be targeted at this problem, and the project companies and their subcontractors must be required to make a suitable number of apprentice jobs available. The need is especially great for electricians and mechanics (not least in the production phase)
- More apprentice jobs in the mineral resources sector (e.g. skilled miners), administrative and catering functions
- All of the skilled trades should remain general, but a range of optional subjects should be available in the course of the programme or it should be possible to add specialisation modules after graduation. In that way, the vocational training programmes may be used in the mineral resources sector and in other sectors
- Upskilling programmes must be available to semi-skilled workers so that they can learn to operate the wide range of machines and vehicles being used in and around the mines
- Training and upskilling initiatives and programmes to secure jobs for Greenland labour in the production phase of mineral resource projects must be initiated as and when mineral resource projects are realised. In this connection, it is important for the framework to ensure that training and upskilling efforts targeted at the mineral resources sector are aligned to the needs of the business community and society in general
- The capacity of the industry schools to provide school apprenticeships will be given priority so that maximum advantage is gained from apprentice job opportunities in the construction phase of mineral resource projects, even if the construction phase stretches over less than a full training period
- Initiatives to promote medium-long and long further education programmes for parts of the young people of Greenland must be strengthened

7.10 The health and social sectors

7.10.1 The health sector

Within the next years, in the transition from exploration to exploitation, the oil and mineral sector will become a permanent part of society. The sector will thus be interacting much more closely than in the past with big and financially heavyweight publicly funded sectors like the health and social sectors in terms of jointly solving the social and health-related needs of workers in the mineral resources sector.

The purpose of the oil and mineral strategy is to ensure that the consequences to the healthcare system and social sector are well-described and addressed.

Even if the mining project is local, it may still impact on the entire community because of the development of growth and non-growth areas, migration and immigration. Mining projects will thus impact on public health and give rise to regular surveys of public health. With the establishment of big mining communities it may become necessary to protect the population against unwanted health implications from mining activities.

The healthcare system is currently geared to the needs of the local population. It is important to be able to facilitate the capacity required to provide healthcare to workers in the mineral resources industry. At the same time, it is important to keep in mind the financial and practical challenges which the healthcare system may be faced with as a result of the increased demand as it is difficult even today to attract highly-specialised professionals to the healthcare system in Greenland.

Potential effects on public health in general as well as on the healthcare need will invariably differ in a short and hectic construction phase with a large foreign labour force and in an operating phase with fewer workers where a higher portion are from Greenland. For mines not located in towns and villages, the question will be who is responsible for the services and how is the healthcare servicing of these mining activities to take place.

The legal rights aspects of patient care must also be ensured for activities outside the public healthcare system, including the right to complain about healthcare services and monitoring of the health status at the mines and of the healthcare professionals working for the mines.

Although, under applicable rules, the resources for the activities are the responsibility of the mineral resources industry itself, a high degree of bridge building must be ensured to the healthcare system and the resources of the other public sectors. The practical solution to specific problems may only be found through close co-operation between the mineral resources industry and the local health service administration. In addition, there is a need for a delimitation of mineral resources law relative to healthcare law and not least a need to decide at the overall level how the political and economic challenges caused by the integration of a new industry into existing structures should be tackled.

In connection with the build-up of the mineral resources sector, special requirements and guidelines will be prepared with respect to monitoring public health in areas where new

mineral resource projects are launched. These efforts lean on the general monitoring of public health. The objective is to gain insight into and with time the necessary tools to counter any negative effects or promote any positive effects, as the case may be, on public health in general.

7.10.2 The social sector

The development of a new mineral resources sector may lead to problems concerning social security benefits.

The Greenland Parliament Regulation on social security benefits provides that any person staying in Greenland is entitled to social security benefits in the event of acute need, if the person in question is unable to support himself or his family.

The only eligibility requirement for social security benefits under this provision is that the person in question must be staying in Greenland. This means that there is no requirement that the person in question has a permanent address in Greenland or is registered with the national residence register. The person must be in an acute state of need. This means having no money for food and drink and no place to stay.

According to the Regulation, the local council may offer help in the case of acute need if the applicant has experienced a social event in the form of illness, childbirth, unemployment, discontinuance of cohabitation or the like and has no chance of procuring the bare necessities of life for himself and his family.

The state of the law therefore means that any person in acute need is entitled to social security benefits, provided that the person in question has experienced a social event. It is not possible to specifically define such social event and it will not be possible under the law to reject an application for acute social security benefits, even if the applicant in question is only in the country as foreign labour. This may potentially result in substantial public expenses.

The benefits which may ultimately become the most widespread and potentially biggest problem as a result of a large number of foreign workers entering Greenland is the one mentioned above. However, this is not the only benefit where problems are conceivable.

Hypothetically, problems may also occur with respect to incapacity pension benefits, depending on the length of the person's stay in Greenland. To this must be added any children the foreign workers may have in Greenland with residents. If it is not possible to determine the paternity of a child, e.g. because the worker in question has left Greenland, this will also impose a financial burden on the social system.

The problem concerning social security benefits is an area where it should also be considered whether agreements should be concluded with the mineral resources companies, for instance concerning the duty to take out insurance cover.

7.10.3 Strategic priorities with respect to the health and social sectors

- Foreign labour for mining projects and the like must be given a health check. This must be done before they enter the country and, similarly, vaccinations must be given according to current recommendations
- In the strategy period, an analysis will be made to clarify the responsibility for provision of healthcare services to mines that are opened outside already existing residential areas and how the development of the mineral resources sector will specifically impact on the need for healthcare services and the capacity requirements which developments will make on the healthcare system
- In the exploration and construction phase a co-operation agreement must be concluded for all projects with the Ministry of Health & Infrastructure, including for the purpose of establishing the necessary insurance schemes for all foreign workers to cover the costs of providing healthcare services in Greenland's healthcare system
- For the operating phase, a similar co-operation agreement concerning provision of healthcare services in Greenland's healthcare system must be concluded between a specific mineral resource project and the Ministry of Health & Infrastructure
- Workers in the mineral resources sector will have a right to complain about the healthcare services through the established complaints system
- An analysis will be carried out in the strategy period to determine whether existing legislation on social security benefits and legislation on other benefits may have unintended consequences in connection with the use of foreign labour in the mineral resources sector

7.11 Citizens, local community and stakeholders

A socially sustainable development of the mineral resources sector requires broad support from citizens, stakeholders and the players which affect or are affected by developments in the mineral resources sector. The understanding and support of individual citizens play a key role in the mineral resources sector becoming a new leading industry in balanced co-existence with the fishing industry and other important sectors in Greenland society.

When we speak about a Greenland where exploration and exploitation of mineral resources is the driving force behind social developments, it is not only a matter of adjusting the economy, the services provided by local businesses and the upskilling and training programmes provided to the labour force to be able to service the new industry. It is also necessary that the transition is taking place in a manner which enables citizens to adjust to the new requirements, challenges and possibilities.

Additional focus will be on securing citizen involvement in the development of the mineral resources sector. As players in the sector, mineral resources companies, individual citizens, stakeholders, the local community, local government and the Self-Government share an active role in securing that the development of the mineral resources sector is socially sustainable. There will still be a need for regional and nationwide information campaigns and other initiatives. An informed public with a balanced understanding of the mineral resources sector will have more realistic expectations to a sustainable mineral resource development.

In the development of mineral resource projects, it is of decisive importance that dialogue and consultations between affected parties start at an early stage of the project development

phase as this will help build co-operative relations and goodwill towards the mineral resources company. It is crucial that this process begins early enough for the information about the project to become known and for the affected parties and stakeholders to have an influence on the project in its final form.

7.11.1 Guidelines for social impact assessments

The “guidelines for social impact assessments” (SIA), which were prepared in 2009, will be revised and independent guidelines prepared for mineral resource and oil/gas projects, respectively. The guidelines prescribe how stakeholder and citizen involvement must take place throughout the development of a mineral resource project. The mineral resources companies will organise a large number of meetings and perform interviews with stakeholders, key persons and citizens throughout the project’s development phase. However, the revised SIA guidelines will be more specific with respect to how stakeholder and citizen involvement is to take place in connection with the development of a mineral resource project.

7.11.2 The public consultation process

The public consultation process in connection with the development of mineral resource projects is important in order to ensure that affected citizens, local communities and other stakeholders gain an understanding of and insight into possible future developments. The experiences which have been drawn from the consultation process in relation to specific mineral resource projects in recent years have spurred a wish to strengthen this part of the citizen involvement process.

An environmental impact assessment (EIA) and a social impact assessment (SIA) and related reports and appendices are documents which go out to public consultation for comments by stakeholders, citizens and public authorities. These comments will be incorporated in a white paper to be prepared by the relevant mineral resources company, and the company is to give an account of the changes this will cause to project planning. Furthermore, the mineral resources company will host information meetings for the public and the Government of Greenland will host public consultation meetings in the consultation period.

7.11.3 Amendment of the Mineral Resources Act

Going forward, the public consultation process is sought strengthened to formalise the procedures and form of consultation processes to a still higher degree within the mineral resources sector and to ensure early stakeholder and citizen involvement in the form of pre-consultations. The Parliament of Greenland will be presented with a proposed amendment of the Mineral Resources Act intended to incorporate procedures and rules for the public consultation process into the Mineral Resources Act. These efforts will take place in co-operation with various players.

The amendment of the Mineral Resources Act means that a mineral resources company will be required to inform the authorities when it wishes to initiate the environmental impact assessment (EIA) and the social impact assessment (SIA) and an early project draft must be submitted. This draft will be put out to pre-consultation with the relevant authorities, stakeholders and the general public for comments, ideas and proposed changes. Responses

must be sent to the mineral resources authority. The pre-consultation period will be 35 days. After that, the contents of the EIA and SIA will be formulated on the basis of the project proposal and consultation responses.

The proposed amendment of the Mineral Resources Act also implies that the existing practice with a public consultation period of eight weeks for a mineral resources company's draft EIA and SIA reports for its mineral resource project will be incorporated into the Mineral Resources Act. Furthermore, it will be specified in the Mineral Resources Act that public consultation meetings will be held in the public consultation period and that minutes will be taken of the meetings. In that way, a clear statutory procedure is created.

In addition, work has been initiated to set up a foundation with the object of improving the participation of affected citizens, local communities and relevant civil society organisations and other relevant stakeholders who are interested in contributing to the public consultation process. The purpose of this is to ensure that the public social and environmental assessment processes are carried out with the widest possible participation of affected groups of society.

Citizen contributions are furthermore intended to secure that their views, knowledge and concerns are taken into account in the decision-making process concerning a specific mineral resource project. The foundation may contribute with funds to obtain independent expertise and advice in connection with special problems with a specific mineral resource project. The foundation will have an independent board of trustees which will review applications sent to the foundation and must distribute funds on the basis of objective and transparent criteria according to detailed rules. The foundation is expected to be funded through contributions from players in the mineral resources sector and the public sector.

The Greenland consultation process does not differ materially from current legislation in, for instance, Denmark and the Canadian provinces of Newfoundland and Labrador. The legislation of both these places applying to EIAs prescribes that project proposals are to go out for public consultation. However, Canadian federal legislation requires access by the public to a "participating foundation" for citizens' own initiatives in order to clarify matters concerning a specific mineral resource project.

The above proposal contributes to the codification of existing practice similar to international best practice and in keeping with the laws of the countries with which Greenland prefers to compare itself.

7.11.4 Strategic priorities with respect to citizens, local community and stakeholders

- Going forward, the public consultation process will be sought strengthened to formalise public consultation in the mineral resources sector to an even higher degree and to ensure early stakeholder and citizen involvement in the form of pre-consultation. Specifically, this will be done by presenting the Parliament of Greenland with a proposed amendment to the Mineral Resources Act incorporating public consultation procedures and rules into the Mineral Resources Act. These efforts will take place in co-operation with various players

7.12 Sustainable social benefits

7.12.1 IBA agreements

In order to ensure that the mineral resources sector furthers a sustainable social development in Greenland to the greatest extent possible, expectations to involvement of local businesses, job creation, upskilling the labour force and providing trainee jobs to the young and growth in the local business community must be incorporated into an agreement between the mineral resources company, the Government of Greenland and the local authority(ies). In everyday usage, this agreement is referred to as an IBA agreement (impact and benefit agreement). The IBA agreement concluded by the mineral resources company, the Government of Greenland and the local authority(ies) is an important tool in ensuring that the individual mineral resource project contributes to social development. The conclusion of an IBA agreement should also be viewed in the context of and in fulfilment of the obligation of a licence holder under the provision in s. 18 of the Mineral Resources Act about the use of Greenland labour and Greenland businesses.

Under the previous oil and gas strategy 2009-2013, two IBA agreements were concluded in connection with Cairn Energy's exploratory drillings in 2010 and 2011. Valuable experiences were drawn from these two agreements which can be used in future IBA agreements.

IBA agreements will consist of a legal main document which sets out the legal matters between the mineral resources company, the Self-Government and the local authority(ies). This main document covers the entire life of the project from the turn of the very first sod and until the mineral resource project is completely closed down. Apart from that, a number of appendices will have to be negotiated each year. These appendices will contain a number of targets for involvement of Greenland businesses, Greenland labour, including women, apprentice/trainee jobs, training and upskilling/skills enhancement and human resource development. The appendices will also include matters concerning cultural understanding, relationship with the local community and matters which are intended to make jobs at the mineral resource project more attractive. These objectives and requirements must be monitored and evaluated on a current basis and new objectives and requirements with respect to, for instance, a larger share of Greenland labour and businesses will be agreed each year. This makes the IBA agreement a dynamic document.

Negotiations about the IBA agreements will be concluded in close co-operation with relevant Greenland stakeholders and relevant authorities and must be signed before construction activities may be initiated.

Obviously, from the perspective of the investor, the IBA agreements will, other things being equal, contain a certain additional costs element. The possibilities of obtaining benefits of a substantial economic nature must thus be viewed in the context of the overall government take.

IBA agreements will be made available to the public upon signing.

7.12.2 Strategic priorities

- The IBA concept must be developed on a regular basis in dialogue with the local authorities, the social partners and the mineral resources sector with the aim of maximising local involvement in the projects

8 Summary of strategic priorities of the mineral resource strategy

Below follows a summary of the strategic priorities of the mineral resource strategy for the period from 2014 to 2018:

Strategic priorities with respect to oil/gas

- 1) Licence strategy for oil/gas:
 - Open door procedure from 2014 and onwards for the areas offshore South/South-West Greenland south of 63°N (the area may be converted into a licensing round area at the end of the strategy period)
 - Open door procedure from 2014 and onwards for the area onshore Jameson Land
 - Licensing round for onshore Disco-Nuussuaq in 2016
 - Licensing round for offshore areas in Baffin Bay north of 71°N in 2016/2017, subject to the result of the anticipated oil drillings
 - Licensing round for offshore areas in the Davis Strait west of Nuuk (63°N to 67°N) in 2018
- 2) The platform for administrative licence management will be modernised. New and better systems will be developed to handle spatial and geological data and to achieve efficiency gains in the processing of applications etc.
- 3) New strategic environmental impact assessments will be conducted, including an analysis of the potential for degradation of oil in the water column and seabed sediment, studies of the impact of oil (toxicity) on key species in the area, impact and degradation of residues from oil burning at sea and the potential for bioremediation of beached oil
- 4) The coastal zone atlas will be updated with the most recent research
- 5) Additional studies will be made in the strategy period with regard to ice conditions and the physical environment in general. The studies will be conducted by public authorities as well as private oil companies. Their findings will form part of the basis on which the potential oil drillings which are expected to be carried out after the geological and geophysical studies proposed for the next ten years are planned
- 6) The expansion of Greenland's oil spill response capability will be carried on. This must take place by further strengthening the oil spill response company GOSR A/S owned by the Self-Government and by initiating local accumulation of oil spill response capability
- 7) Greenland's oil/gas potential, licensing strategy, licence conditions, etc. must be promoted at industry trade shows and conferences and other marketing activities such as initiatives towards specific target groups
- 8) The following government take model will be used in the next strategy period (model 1):
 - Corporate/withholding tax at the rate applicable from time to time
 - A 2.5% royalty on turnover
 - A surplus royalty of 7.5%, 17.5% and 30%, payable when accumulated revenues exceed accumulated expenses by 35%, 45% and 55%, respectively
 - Participation by Self-Government-owned company (Nunaoil A/S) as a carried partner in the exploration phase, with an ownership interest of 6.25%
- 9) The Government of Greenland will strengthen the control and collection authorities to secure Greenland the correct taxes and duties

Strategic priorities with respect to minerals

- 10) The Government of Greenland's objective is to license the opening of three to five mines on an environmentally and socially sustainable basis over the next five years. The mining projects may include:
 - The Isukasia (Isua) project (London Mining, northeast of Nuuk)
 - The ruby project (Fiskenæsset, south of Nuuk)
 - The Killavaat Alannguat/Kringlerne project in South Greenland
 - The Kvanefjeldet project at Narsaq in South Greenland
 - The Citronen Fjord project in North Greenland
 - The Anorthosit project in White Mountain in West Greenland
- 11) In the coming strategy period, focus will be on the potential for occurrences of new major deposits of iron alloy and base metals, rare earth elements, gold and gemstones
- 12) Analysis of the zinc potential of North Greenland is one of the areas which will receive special attention in the coming strategy period
- 13) New initiatives to strengthen small-scale activities will be given priority, including reservation of special areas for this type of activity and strengthening of small-scale course activities at the School of Minerals and Petroleum
- 14) The platform being used for the administrative management of mineral licences will be brought up to date. New and improved systems must be developed to handle spatial and geological data and to increase efficiency in the processing of applications, etc.
- 15) New legislative and administrative frameworks must be established for an export control system for radioactive minerals as well as a system for implementation of the IAEA safeguards
- 16) The specific regulatory tasks and draw on resources must be further identified
- 17) The Self-Government must become subject to all relevant international obligations, agreements of international law and other international rules concerning uranium and other radioactive minerals
- 18) A co-operation structure must be set up between the Government and the Government of Greenland concerning defence and national security policy matters of importance to export of uranium extracted in Greenland
- 19) The preparations involved in establishing the regulatory framework, setting up the required administrative systems and procedures and accepting international obligations, etc. must be completed at the beginning of 2016
- 20) In May 2014, applications on special terms in North Greenland will be accepted concerning predefined licence blocks directed towards the unique zinc potential of the area
- 21) The accumulation of knowledge about Greenland's natural and environmental conditions must be strengthened through specific projects and surveys. The Environment Agency will use this knowledge to assess and plan potential new mineral resources activities having regard for local natural and environmental conditions, including to assess the necessity of giving priority to sensitive areas, e.g. areas with breeding colonies of birds

- 22) Efforts will be made to carry out a number of new strategic environmental impact assessments in the coming strategy period with a focus on land and fiord areas in relation to mining
- 23) Marketing efforts will be divided into three categories: 1) participation in industry events where the mineral potential of Greenland will be presented in connection with exhibitions, 2) marketing activities aimed directly at a country and/or companies and in order to attract investors, 3) official visits with the attendance of Government of Greenland member(s)
- 24) The following government take model is recommended for all metals and minerals except for rare earth elements, uranium and gemstones:
 - Corporate/withholding tax at the rate applicable from time to time
 - A 2.5% royalty on turnover where corporate/withholding tax is deducted from the royalty calculated
- 25) The following government take model is recommended for rare earth elements:
 - Corporate/withholding tax at the rate applicable from time to time
 - A 5% royalty on turnover where corporate/withholding tax is deducted from the royalty calculated
- 26) The following government take model is recommended for uranium:
 - Corporate/withholding tax at the rate applicable from time to time
 - A 5% royalty on turnover
- 27) The following government take model is recommended for gemstones:
 - Corporate/withholding tax at the rate applicable from time to time
 - Introduction of a 5.5% royalty on turnover
 - A surplus royalty, which will be based on gross profits above 40%, at a rate of 15%
- 28) The Government of Greenland will strengthen the control and collection authorities in order to secure Greenland the correct taxes and duties.

Strategic priorities with respect to GeoSurvey Greenland

- 29) During the course of the strategy period, a geological survey of Greenland, GeoSurvey Greenland (GSG), must be established as a parallel to the Greenland Institute of Natural Resources. The GSG will be a sector research institution under the Self-Government

Strategic priorities with respect to sustainable development – environmental protection

- 30) An amendment to the Mineral Resources Act will be sought implemented in 2014 which clearly establishes that the regulatory function in the environmental area was separated from the rest of the regulatory function in the area of mineral resources on 1 January 2013
- 31) The work involved in further developing an independent environmental regulatory authority within the area of mineral resources includes, among other things, a closer integration with the activities of the already existing departments of the Ministry of Environment and Nature which support and reflect the independent environmental regulatory authority in the area of mineral resources

- 32) The co-operation agreement of the Government of Greenland with the Danish Government about the Danish Centre for Environment and Energy's assistance in the area of mineral resources will be renewed in 2014
- 33) A multi-annual plan will be introduced for the transfer of competence to the Greenland Institute of Natural Resources
- 34) New and more detailed guidelines for the preparation of EIA reports for mining activities will be adopted

Strategic priorities with respect to sustainable development – Greenland's business community

- 35) The Government of Greenland intends to continue the capability-building efforts which have been made over the past couple of years via a contract with a private service provider. Specifically, tenders will be invited for a project in the form of a service contract with a focus on further building the capabilities of Greenland businesses and increasing their competitiveness as contractors in the mineral resources sector
- 36) The Government of Greenland will invite all relevant parties to co-operate in the efforts to find the best way of involving the local business community in the mineral resources activities
- 37) In 2014, the Government of Greenland and the Danish Government will present a joint report with proposals as to how to strengthen commercial business co-operation between Greenland and Denmark in relation to the mineral resources sector and various other sectors

Strategic priorities with respect to sustainable development – alternative financing of infrastructure facilities

- 38) The Government of Greenland will invite industrial partners to jointly examine whether it is possible to support the mineral resources sector by encouraging the financing arrangement known as public-private partnership (PPP) – a co-operation between public and private interests or, in the alternative, between one or more mineral resources investors and institutional investors. A special feature of PPPs is that tenders are not only invited for the construction of a facility or building, but that financing, design, establishment as well as operation and maintenance are joined in a single tender

Strategic priorities with respect to sustainable development – energy supply to the mineral resources sector

- 39) The Government of Greenland will invite industrial partners to jointly examine the possibilities of co-ordinating public and private interests on a commercial basis so as to provide for the best possible utilisation of the hydro power potentials in connection with future mining projects

Strategic priorities with respect to sustainable development – airports

- 40) The Government of Greenland will initiate a more thorough process to identify oil companies' need for base airports for the next five years, the flexibility of their flyings and the perspectives in sharing facilities with other exploration companies and existing

- users, which may form the basis of a prioritisation of which airports should be extended with a hangar and waiting facilities in order to meet the companies' needs
- 41) This process should include the derived effects in the air transport sector and provide the basis for future priorities in relation to an investment in the airport area. The reason for this is that the scope of the exploration activities in Baffin Bay as well as off the coast of South Greenland in the next years is still subject to a great deal of uncertainty. As a result, any public investment must be examined in the context of the requirements of society as a whole
 - 42) Based on the information received from the above, it is recommended that the peak requirement is compared against the capacity available in the relevant base airports
 - 43) The Government of Greenland will explore the possibilities of using the facilities at Pituffik/Thule Air Base in an exploration phase. The airport in Pituffik has an optimum location for the northern concessions in Baffin Bay and has all of the necessary facilities. In addition, it will be able to serve as a point of departure for an improved SAR coverage of the area. A more simple procedure for the concession companies' potential use of facilities at Pituffik is deemed to significantly change the possibilities of air transport service to the northern concessions
 - 44) As regards the capacity of the existing infrastructure at the airports, the concurrence of activities at the individual concessions will be of decisive importance. Activities in this context mean not only the activities of the mining companies but also the offshore projects and the activities related to daily air traffic in the Greenland society
 - 45) An analysis should be prepared of the existing traffic structure for the purpose of ensuring maximum Greenland participation in mining projects

Strategic priorities with respect to sustainable development – harbour capacity

- 46) The Government of Greenland will examine which of the harbours along the west and south coast of Greenland may best, in terms of capacity as well as location, be extended and upgraded to main supply base for offshore activities in order to be capable of handling two or more operators involved in exploration activities, as seen in relation to proximity to airports
- 47) The examination will include the derived effects in the area of transport by sea and provide the basis for future priorities in relation to an investment in the harbour area. The reason for this is that the scope of the exploration activities in Baffin Bay as well as off the coast of South Greenland in the next years is still subject to a great deal of uncertainty. As a result, any public investment must be examined in the context of the requirements of society as a whole
- 48) The mining companies must themselves examine and determine their physical needs in relation to transport by sea, both as concerns supplies and also as concerns transport of products, i.e. the possibility of establishing new harbours near the mines in relation to access, climatic conditions and plant engineering challenges

Strategic priorities with respect to sustainable development – telecommunications

- 49) The Government of Greenland will analyse whether it would be expedient to deregulate the implementation and operation of telecommunication systems in connection with mining and mineral resource projects

Strategic priorities with respect to sustainable development – labour market and employment

- 50) Focus on IBA agreements, with close co-ordination between the mineral resources industry, the social partners and the public authorities, one of the aims being to increase local employment through recruitment programmes, upskilling, involvement of Greenland contractors, etc.
- 51) The matching efforts must be intensified in order to be able to assign relevant labour to the mineral resource sector
- 52) The number of course participants at qualifying courses under the project to develop skills for people without an education (PKU) must be increased. A separate skills development strategy must be formulated which accommodates the needs of the mineral resources sector as well as the underlying businesses
- 53) Vacant positions must be assigned nationally via a joint public job portal, which also provides information about new job types, reskilling possibilities, upskilling courses, etc., at all levels of the labour market
- 54) The guidelines for the Mobility Promotion Fund must be adjusted so as to support the new industrial structure
- 55) Young people who are currently unemployed must be upskilled for later education via the Piareersarfiit centres
- 56) The skills requirements of the public labour market administrations will be analysed

Strategic priorities with respect to sustainable development – training

- 57) Training and upskilling initiatives and programmes must be targeted at securing jobs for parts of the Greenland labour force in the building and construction industry. In the construction phase of mineral resource projects the need for labour will be concentrated around building and construction projects. The qualifications which the Greenland labour force must have in order to be employable in these projects are qualifications which can also be used in the building and construction sector in general
- 58) More apprentice/trainee jobs. If some of the jobs in the construction phase are to be filled by Greenland labour, without this resulting in a lack of skilled labour elsewhere in Greenland, it will be necessary to ensure that more people are able to get craftsman training, hence the need for more apprentice jobs. Therefore, efforts must be targeted at this problem, and the project companies and their subcontractors must be required to make a suitable number of apprentice jobs available. The need is especially great for electricians and mechanics (not least in the production phase)
- 59) More apprentice jobs in the mineral resources sector (e.g. skilled miners), administrative and catering functions
- 60) All of the skilled trades should remain general, but a range of optional subjects should be available in the course of the programme or it should be possible to add specialisation modules after graduation. In that way, the vocational training programmes may be used in the mineral resources sector and in other sectors
- 61) Upskilling programmes must be available to semi-skilled workers so that they can learn to operate the wide range of machines and vehicles being used in and around the mines
- 62) Training and upskilling initiatives and programmes to secure jobs for Greenland labour in the production phase of mineral resource projects must be initiated as and when

mineral resource projects are realised. In this connection, it is important for the framework to ensure that training and upskilling efforts targeted at the mineral resources sector are aligned to the needs of the business community and society in general

- 63) The capacity of the industry schools to provide school apprenticeships will be given priority so that maximum advantage is gained from apprentice job opportunities in the construction phase of mineral resource projects, even if the construction phase stretches over less than a full training period
- 64) Initiatives to promote medium-long and long further education programmes for parts of the young people of Greenland must be strengthened

Strategic priorities with respect to sustainable development – the health and social sectors

- 65) Foreign labour for mining projects and the like must be given a health check. This must be done before they enter the country and, similarly, vaccinations must be given according to current recommendations
- 66) In the strategy period, an analysis will be made to clarify the responsibility for provision of healthcare services to mines that are opened outside already existing residential areas and how the development of the mineral resources sector will specifically impact on the need for healthcare services and the capacity requirements which developments will make on the healthcare system
- 67) In the exploration and construction phase a co-operation agreement must be concluded for all projects with the Ministry of Health & Infrastructure, including for the purpose of establishing the necessary insurance schemes for all foreign workers to cover the costs of providing healthcare services in Greenland's healthcare system
- 68) For the operating phase, a similar co-operation agreement concerning provision of healthcare services in Greenland's healthcare system must be concluded between a specific mineral resource project and the Ministry of Health & Infrastructure
- 69) Workers in the mineral resources sector will have a right to complain about the healthcare services through the established complaints system
- 70) An analysis will be carried out in the strategy period to determine whether existing legislation on social security benefits and legislation on other benefits may have unintended consequences in connection with the use of foreign labour in the mineral resources sector

Strategic priorities with respect to sustainable development – citizens, local community and stakeholders

- 71) Going forward, the public consultation process will be sought strengthened to formalise public consultation in the mineral resources sector to an even higher degree and to ensure early stakeholder and citizen involvement in the form of pre-consultation. Specifically, this will be done by presenting the Parliament of Greenland with a proposed amendment to the Mineral Resources Act incorporating public consultation procedures and rules into the Mineral Resources Act. These efforts will take place in co-operation with various players

Strategic priorities with respect to sustainable development – Sustainable social benefits

- 72) The IBA concept must be developed on a regular basis in dialogue with the local authorities, the social partners and the mineral resources sector with the aim of maximising local involvement in the projects