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Position Paper by NOAH Friends of the Earth Denmark, SustainableEnergy and Grup de Científics i Tècnics per un Futur No Nuclear / Group of Scientists and Engineers for a Non-Nuclear Future on a Proposal for a Greenland Parliament Act to Ban Uranium Prospecting, Exploration and Exploitation

First, NOAH Friends of the Earth Denmark, SustainableEnergy and Grup de Científics i Tècnics per un Futur No Nuclear / Group of Scientists and Engineers for a Non-Nuclear Future would like to thank the Ministry of Mineral Resources for the possibility to participate in the public consultation process and submit these comments, although the last-mentioned NGO is not affiliated with Greenland or the Danish Realm. We understand that authorities, NGOs and individuals outside of Greenland and the Danish Realm have been given such an opportunity and want to compliment the government on its openness and willingness to facilitate public participation.

As green NGOs, we support the notion that the atmosphere, climate, air, water, and flora and fauna are global commons which nations hold in trust for the benefit of current and future generations based on the principle of sustainable development. Neither sovereignty nor private property give anybody the right to cause substantial and irreversible damage to the environment. Thus, we agree that everybody should be entitled to comment on activities such as uranium mining that is not only detrimental to the local environment in which it takes place, but also – due to the long reach of the nuclear fuel chain – has severe negative environmental and health impacts at a global scale.

Second, we want to congratulate the Ministry of Mineral Resources and the government on the swift fulfilment of the promise in the government coalition agreement to reinstate the uranium ban. The ban, as it is proposed in the draft bill, will prevent uranium prospecting, exploration and exploitation in connection with mineral resource activities in Greenland, regardless of whether uranium is the main product or a by-product. This will make it impossible for the Kuannersuit/Kvanefjeld uranium and rare earths mining project to proceed. Therefore, we suggest that the Ministry of Mineral Resources draws the consequence and halt the Kuannersuit/Kvanefjeld

project as soon as a uranium act is passed and not wait for the project's licensing process to play out. We also applaud the fact that no provisions are laid down on compensation to licensees for revoked or restricted licenses and that it is established that the provisions of the bill do not permit compensation to licensees for lost or restricted licences.

Although we generally support the proposal, which we think will play a significant positive role in protecting human health and preserving Greenland's environment and in the long term for these same reasons be beneficial for Greenland's economy, we would like to point out that some of the provisions in our opinion could be further elaborated on and in some cases amended.

In regard to the draft uranium bill, these provisions are the following:

(i) NOAH, SustainableEnergy and Grup de Científics i Tècnics per un Futur No Nuclear applaud the fact that pursuant to the bill, an application for an exploitation license under the provisions of the Mineral Resources Act may be refused if the contemplated handling of the uranium as a by-product in an environmentally sound manner is not possible. This applies even if the uranium content is in accordance with section 1 of the bill, cf. the explanatory notes to section 1(2). However, the proposed uranium threshold of 100 ppm in section 1(2) is only partly rooted in health and environmental concerns. Its main objective is probably to interfere as little as possible with the almost 90 large-scale mining projects in different phases of development that so far have avoided negative public attention.

In our opinion, the proposed uranium threshold of 100 ppm is too high due to uranium's ecotoxic properties, but also due to variations in the solubility of the uranium and other harmful radioactive substances in the mine. Acid forming mining wastes may be the cause of acid rock drainage for thousands of years. Especially in context of acid and other mine drainage, any level of uranium or thorium may be dangerous to the environment. Therefore, radioactive substances should be controlled by strict environmental quality standards long time after closure of a mine. In drinking water, uranium is radiotoxic and even more chemotoxic to humans, but particularly to water animals and other organisms, in very low concentrations¹. Because of the drainage, the uranium content should be considered for each subcategory of ore and waste rock.

We would argue that other radioactive elements such as thorium, which has similar chemical ecotoxicity as uranium and therefore additionally poses a major radiological risk, but also the daughter-nuclides of uranium, such as polonium-210 and lead-210², should not have their own

¹ Uranium may be radiotoxic to humans with concentrations of 100 micrograms/liter in drinking water. The chemical toxicity for human may occur at concentrations of 15 micrograms per liter. However, the ecotoxicity to e.g. fresh water organisms has a limit of about 0.5 micrograms per liter or even less, cf. the predicted no-effect concentration in the European Commission, Scientific Committee on Health and Environmental Risks, Preliminary opinion on the environmental and health risks posed by depleted uranium, 2009: [Microsoft Word - scher_o_119.doc \(europa.eu\)](http://www.eea.europa.eu)

² However, with respect to the uranium daughters in general, a radioactivity-based limit or an evaluation norm might be appropriate. One international norm is 1000 Bg/kg which corresponds to 40 mg/kg or 40 ppm of natural uranium (for

separate thresholds. Instead their ppms should be added up and fall under the same maximum limit defined as the radiation units Bq/kg. Considering that there is no safe content level of radioactive substances or other toxic substances, *a total sum of uranium and thorium of 50 ppm should be recognised as the permissible maximum limit.*

With respect to exploration, drill cores would need to be thoroughly chemically analysed in terms of uranium and thorium. This should also be recommended for other heavy metals. Both solid and liquid exploration wastes should be scanned for gamma and beta radiation. The measurements should be made by independent inspectors and published as quickly as possible (e.g. on the Internet) and made available to local communities. It should be noted that exploration that has taken place may already have produced dangerous and radioactive wastes, which should be properly controlled.

An additional way to regulate the uranium issue could be, like in certain respects in Finland, to impose an annual limit of 10 tons as the total amount of uranium accumulated and by applying the precautionary principle, use both the ppm maximum threshold and the 10 tons limit on the mining projects. 10 tons uranium equals 100,000 tons of ore (and/or waste rock) with a content of 100 ppm uranium.

In conclusion, we recommend that the government adopts a 50 ppm uranium and thorium limit and reserves the right to administratively lower it further, especially if scientific research substantiates the need to do so due to health and environmental concerns. In addition, the Ministry of Mineral Resources should apply a 10 tons uranium criterion. This should also have consequences for already existing exploitation licenses. Furthermore, exploration samples and mine wastes should be thoroughly analysed with regard to their content of radioactive substances and descriptions of the contents should be made publicly available according to the provisions of the Aarhus Convention (see paragraph ii below).

Furthermore, any comment on the draft uranium bill is insufficient if it does not take place in the perspective of the mineral resources legislation in general. Thus, we would like to add the following general comments:

Together with almost 140 other green NGOs from all over the world, including from Greenland, we have called for a moratorium on large-scale mining in Greenland, and argued that the Greenlandic government should be compensated for the possible loss of revenue from such a measure³.

the evaluation of radiation waste). An even lower norm could be appropriate for polonium-210 or lead-210 and possible bioaccumulating daughter nuclides of thorium when they accumulate and are soluble from the process wastes.

³ NGO declaration, Appeal to the Greenlandic and Danish Governments and the European Union to Help Protect the Greenlandic and Arctic Environment, 10 February 2021: [Declaration on large-scale mining and oil and gas extraction in Greenland 1.pdf \(noah.dk\)](https://noah.dk/Declaration_on_large-scale_mining_and_oil_and_gas_extraction_in_Greenland_1.pdf)

However, until that happens, Greenland's mineral resources legislation could benefit from the following amendments:

- (ii) Greenland is not party to the Aarhus Convention and Greenland's environmental legislation does not mandate strategic environmental impact assessments for mineral exploration areas. This means that few areas in principle are excluded from being licensed and also that the public is not informed in advance on what areas could be designated⁴. The government should adopt this convention, so that not only environmental impact assessments, but also strategic environmental assessments of the plans and programs that set the frame for all large- and small-scale mining projects become mandatory⁵.
- (iii) The government should sign and adopt the standards, measures and rules in UN's Convention Against Corruption⁶ in both the public and private sector and assure that licensing procedures are not manipulated or interfered with. There should be firm boundaries between the licensing authority and the mining companies. Conflicts of interest should be prevented by imposing appropriate restrictions for a reasonable period of time on the professional activities of former public officials and on their employment by the private sector after their resignation or retirement in situations, where their activities relate directly to the functions held or supervised by them during their tenure.

Also, it should be possible to annul prospecting, exploration and exploitation licenses if a license holder violates Greenland's penal code, tries to manipulate the licensing process, unduly influence the decision-making, or undermine local and general elections in order to facilitate mining projects. Furthermore, vetting of license applicants should be mandatory. A vetting procedure should be installed that among others takes into consideration possible prior criminal convictions and ties to criminal organisations by key people in the companies in question, patterns of behaviour concerning other mining projects inside and outside of Greenland, and not only the economic capacity to pay the license fees, which is currently the only requirement for being able to apply for a license.

The government should also take measures to ensure that entities or persons who have suffered damage as a result of an act of corruption, including the government itself, municipalities and local communities, have the right to initiate legal proceedings against those responsible for that damage in order to obtain compensation.

⁴ For more information on Greenland's legislation in this field, see Ellen Margrethe Basse, Juridisk responsum om den gældende grønlandske lovgivning vurderet i lyset af Århuskonventionen, Juridisk Institut, Business and Social Sciences, Aarhus Universitet, June 2014: <http://kortlink.dk/naalakkersuisut/pk6q>

⁵ The rights guaranteed by the Aarhus Convention relate to three areas: (a) The public's right of access to environmental information vis-à-vis administrative authorities and private parties with public responsibilities for environmental protection. (b) The public's right to participate in certain environmental decision-making processes. (c) The public's right of access to courts or tribunals in environmental matters. Transparency includes informing all persons and stakeholders in a way that they can assess the risk of a certain activity. Information has to be provided complete and early enough for this to happen. Link to the convention website: [Introduction | UNECE](#)

⁶ United Nation, United Nations Convention Against Corruption, New York, 2004:

[UNITED NATIONS CONVENTION AGAINST CORRUPTION \(unodc.org\)](#)

(iv) Whistle-blower protection must be seen as a necessary precondition for fighting corruption as well as for transparency and access to relevant information by the public: The government should incorporate measures into the legal system to give protection against any unjustified treatment for anybody who in good faith and on reasonable grounds reports facts about serious offences to the competent authorities.

(v) In regard to large-scale mining projects, local communities should have the right to free prior and informed consent, including a right to say no to mining⁷.

(vi) Granting of exploration licenses should not automatically lead to exploitation licenses. Every exploration license should have a disclaimer, ensuring that the government is not liable to pay damages if an exploitation license is not granted, irrespective of the reason, and also if the exploitation license is revoked at a later stage due to health and environmental concerns that have arisen during the operation of the mine.

(vii) Mining should be prohibited in conservation areas and under the sea and Heritage Impact Assessments (HIA) of all large-scale mining projects near Greenland's 3 UNESCO world heritage sites should be mandatory. A decision on granting any such project an exploitation license should not be made, before it has been presented to UNESCO for an evaluation in accordance with §172 of the operational guidelines for the World Heritage Convention⁸. The HIA should take into consideration the cumulative effect of all other mining projects in the area.

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⁷ For more on this and related subjects, see: Friends of the Earth Europe and others, Driving destructive mining, June 2021: [YLNMEU Page 1.jpg \(friendsoftheearth.eu\)](#)

⁸ World Heritage Centre, The Operational Guidelines for the Implementation of the World Heritage Convention, Paris, July 2019: [UNESCO World Heritage Centre - The Operational Guidelines for the Implementation of the World Heritage Convention](#)

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