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Les enjeux de la filière uranifère au Québec

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Brief

Uranium industry issues in Quebec

Presented to:

The Bureau d'audiences publiques sur l'environnement (BAPE)
inquiry commission hearings on
uranium industry issues in Quebec

Presented by:

The Assembly of First Nations of
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&
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*This is a courtesy translation; please refer to the French version.

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FOREWORD

On March 3, 2014, the Ministre du Développement durable, de l'Environnement, de la Faune et des Parcs gave the Bureau d'audiences publiques sur l'environnement (BAPE) the mandate to hold an inquiry and public hearing on uranium industry issues in Quebec.

This brief is filed in the framework of this inquiry and aims to share the main concerns of the Assembly of First Nations of Quebec and Labrador (AFNQL) in regards to this subject.

The AFNQL and the First Nations of Quebec and Labrador Sustainable Development Institute (FNQLSDI) collaborated on the writing of this document.

In order to produce this brief, a great deal of documents were accessed and analyzed. Much of this information comes from documents available on the BAPE website. Discussions that were held as part of the BAPE hearings and presentations which were given by experts appointed by the commission have also contributed to the drafting of this document.

In addition, on September 24-25, 2014, the AFNQL and FNQLSDI, together with the BAPE on the 24th, jointly organized a two-day workshop on the uranium industry in Quebec City. On September 24, First Nations were able to express some of their concerns to members of the commission. The next day, First Nations gathered together to reflect on the common position to be adopted in relation to the issue of uranium. The concerns shared by First Nations during the various exchanges that took place between them—their rights, interests and values—are fully embodied in this brief.

After a brief explanation about the AFNQL and FNQLSDI, this brief will introduce the general position of the AFNQL on the subject. The brief will then outline the principal elements of concern, classified by subject, which have led the AFNQL to take a position against the development of the uranium industry in Quebec.

However, it is important to note that the arguments that follow are those of the AFNQL. The recommendations and comments expressed can not be used outside the specific context of this inquiry.

This process is carried out without prejudice to the rights and interests of First Nations and therefore can not nullify any of their positions, claims, actions or territorial negotiations in any way whatsoever.

THE AFNQL AND THE FNQLSDI

The AFNQL is a political entity constituted by the Chiefs of the First Nations of Quebec.

The FNQLSDI is a commission, and provides technical support and expertise to the AFNQL in relation to issues within its field of activity, primarily the environment and natural resources.

Founded in 1985, the AFNQL is the meeting point for the Chiefs of 43 First Nations communities. The AFNQL holds Chiefs' Assemblies about four times a year to receive different political mandates. The AFNQL is affiliated with the Assembly of First Nations (AFN) whose offices are located in Ottawa.

Conscious of the harmony between the principles of sustainable development and the values of First Nations, the Chiefs-in-Assembly founded the First Nations of Quebec and Labrador Institute for Sustainable Development in 2000.

The primary mandate of the FNQLSDI is to support the 43 communities in Quebec and Labrador to implement the First Nations of Quebec and Labrador Sustainable Development Strategy[1] and to meet the economic, social and environmental challenges facing them.

The FNQLSDI supports the communities in the protection and enhancement of their territories, social development, economic viability and recognition of First Nations rights, and provides its expertise to the AFNQL when common issues must be addressed.

The FNQLSDI is involved in the following areas:

- Consultation
- Forestry
- Mines
- Species at risk
- Energy
- Climate change
- Water
- Territorial planning
- Waste management
- Etc.

The AFNQL and the FNQLSDI have a good knowledge of First Nation issues in the areas of law, the environment and natural resources.

[1] http://fnqlsdi.ca/?page_id=34

Indeed, for several years, the AFNQL and its commissions, including the FNQLSDI, have been regularly asked to participate in various consultations related to development, land use, resource management, education, public security, health, etc.

The FNQLSDI has also established networks of experts of the First Nations in the aim of share expertise between communities on various topics related to its field of activity, to improve information transfer leading to better recognition by governments of the rights, values and needs of the First Nations.

In addition, the AFNQL and FNQLSDI regularly hold events at which representatives of First Nations communities share experiences on specific issues and develop common strategies when necessary. The workshop on the issues of the uranium industry in Quebec, held on September 24-25, 2014, is an example.

In this brief, the AFNQL raises issues that in its view are representative of the rights, interests, and values of the First Nations. The AFNQL recognizes and respects the different situations and choices of each of the Nations and this brief is not intended to harm their interests in any way.

INTRODUCTION

On March 28, 2013 the Chiefs-in-Assembly affirmed their firm and final opposition to the exploration and exploitation of uranium by passing a resolution to that effect.[2] The AFNQL regrets that rare earths were not included in the mandate of the BAPE and also has several concerns about this issue.

The concerns and arguments of the AFNQL, described in the sections that follow, supporting their rejection of the development of this sector, are fourfold:

- Legal
- Environmental
- Health and social
- Economic

In summary, under Canadian Law, Aboriginal Rights, including Aboriginal title and rights stemming from Treaty, of First Nations, is based on the prior occupation of Canada by Aboriginal Peoples. Section 35 of the *Constitution Act of 1982* gave constitutional protection to these rights and various judgments of the Supreme Court have provided clarifications. The most recent decision of the Supreme Court reminds governments and even private developers that they cannot ignore First Nations, whom have a say in the management of their lands and resources therein[3]. The inherent rights of First Nations to possess, occupy, use and benefit from their traditional lands and to decide on the use of it are also recognized by international law through the United Nations Declaration on Rights of Indigenous Peoples, September 13, 2007 (adopted by the General Assembly and ratified by Canada on November 12, 2010).

The AFNQL believes that First Nations are therefore entitled, according to their traditional legal system and under Canadian law and international law, to refuse the exploration and exploitation of uranium in their traditional territories.

Environmental issues related to uranium activities are, along with health issues, among the major concerns of the AFNQL that led to the decision. Territories in which mining activities take place, are not at all isolated, they are territories that are occupied and inhabited by the First Nations. First Nations maintain a special relationship with their natural environment, where they practice their traditional activities such as hunting, fishing, gathering and trapping.

By their lifestyle, their location and their practices, First Nations are particularly vulnerable to environmental and health impacts inherent to the exploration and exploitation of uranium. In addition, extensive information is available about the particular risks posed by uranium activities to human health and the environment.

[2] Resolution NO 04/2013
[3] Nation Tsilhqot'in c. Colombie-Britannique, 2014 CSC 44

"The most important issue related to sustainable development and First Nations is the traditional bond First Nations maintain with the Earth."[4] This relationship transcends the mere desire to ensure sound management of resources. It leads them to always think seven generations ahead when the time comes to create development projects. But pollution from uranium and its derivatives continues for thousands of years.

Uranium activity is in essence incompatible with the occupation and use of the territory by First Nations, and a threat to their way of life, their culture, their health and that of their territories.

Far from being reassuring, the studies on ecology and health presented at the BAPE hearings reinforce the position that the AFNQL have adopted in opposition to the development of the uranium industry. Too many questions remain about the effects of radionuclides on ecosystems and human health. On numerous occasions, and in regards to many aspects of this activity, it was said that "the data do not support a conclusion," as if this was an argument for the development of the uranium industry. Yet the effects of uranium and its derivatives are well documented, even if it is not possible to accurately reproduce actual environmental conditions through laboratory analysis.

Rather, this uncertainty inherent to uranium activity leads to the conclusion that the risks are underestimated.

Moreover, through the *Sustainable Development Act*,[5] Quebec has committed itself to a number of principles, including the principle of precaution. It is to the honour of the government that this principle be applied to ensure First Nations and Quebeckers a healthy environment for present and future generations.

Finally, for the AFNQL there is no economic consideration that can justify taking such a risk. Especially since current economic conditions do not require us to take this path. Other opportunities, more responsible and more economically viable, are available to Quebec. The costs (environmental, health, social and economic) associated with uranium activity are far more significant than the financial benefits derived from it and that only profit the mining companies in the end.

In summary, the AFNQL opposes the development of the uranium industry and calls for the province to enforce a complete moratorium on uranium activities. The issues and arguments supporting our opposition are detailed in the sections that follow. This is not an exhaustive list, but an outline of the most disturbing elements that were identified during the analysis of the issue that was undertaken.

[4] FNQLSDI. *First Nations of Quebec and Labrador Sustainable Development Strategy*, 2009, p. 16.
[5] http://www.mddelcc.gouv.qc.ca/developpement/loi.htm#pourquoi

FIRST NATIONS RIGHTS AND GOVERNANCE

First Nations possess rights that governments must respect. Their choice to oppose the development of the uranium industry in their territories must be respected.

Occupation of the territory by the First Nations

The First Nations have occupied the territory in a dynamic way over millennia, exercising practices such as hunting, fishing, trapping and gathering. They thus maintain a specific lifestyle that includes a substantial relationship to the land and its resources. This lifestyle has never ceased to be an integral part of their distinctive culture although it has evolved and even though its practice has become more and more difficult in the current context where the territory is open to industrial development, among other factors. The uranium exploration and exploitation are a direct threat on this lifestyle.

According to these practices, the First Nations have and continue to exercise, by virtue of their inherent right to self-government, the responsibility to control, manage, preserve and protect their traditional territories. The arrival of Europeans has not terminated these rights. These rights still exist. On the contrary, they were confirmed by Section 35 of the *Constitution Act* of 1982.

Recognition of First Nations rights

Since then, a number of judgments have reinforced, clarified and guaranteed the rights of First Nations. The most significant of recent years in this regard are the following judgments:

- 1997-Delgamuukw ruling: Under this ruling, it is possible that Aboriginal nations can hold Aboriginal title, a subcategory of Aboriginal rights. This title is defined as being a collective land right that grants an exclusive right to use and occupy the territory and that may apply to different activities which are not limited to hunting, fishing and trapping. This title ensues from the exclusive occupation, prior to European sovereignty, of a territory by an Aboriginal people.
- 2004-Haida Nation rulings and 2005-Mikisew: The Supreme Court of Canada decided that the governments must consult First Nations when a project to exploit natural resources is likely to affect treaty rights or Aboriginal rights which are claimed. At the time of a consultation, governments must endeavor to find arrangements to reconcile the development activities with the rights and the claims of the Aboriginal peoples.
- 2014-William ruling: Recently, in 2014, the Supreme Court of Canada issued a ruling in the William case, *Tsilhqot'in Nation v. British Columbia, 2014 SCC 44.* In this judgment, the Supreme Court recognizes the existence of Aboriginal title for the Tsilhqot'in First Nation on a portion of its claimed territory. This judgment held that governments and other entities who want to use the land must obtain the consent of the holders of

> Aboriginal title or otherwise, the government will at least show that it is an important public interest and that it is compatible with Aboriginal interests. It also held that the Nation concerned has the right to determine land uses and to benefit from the economic gains they provide.

The James Bay and Northern Quebec Agreement (JBNQA) was signed in 1975 between the Cree and Inuit of Quebec and the provincial and federal governments. It was Canada's first modern treaty, and contains provisions for many governance-related issues within Eeyou Istchee, such as health, education, economic development. land use and management, and environmental and social protection. The JBNQA is a treaty protected under Canada's constitution.

A number of other agreements supplement and expand on the Cree Nation's rights as recognized under the JBNQA. One such agreement is the Paix des Braves, a landmark nation-to-nation agreement signed in February 2002 between the Cree Nation and the Government of Quebec. Under this agreement, the Government of Quebec provides funding for the Crees to assume Quebec's obligations under the JBNQA regarding economic and social development, for 50 years. More recently, on January 1, 2014, a new governance agreement between the Cree and Quebec came into force, establishing the Eeyou Istchee James Bay Regional Government. Through these agreements and others, the Cree Nation is establishing itself as a true and veritable partner in the development of its territory, while maintaining measures to protect and sustain the Cree way-of-life.

First Nations rights are also recognized at an international level by the United Nations Declaration on the Rights of Indigenous Peoples[6] to which Canada is a party. Article 32 of the declaration states inter alia that "Indigenous peoples have the right to determine and develop priorities and strategies for the development or use of their lands or territories and other resources."

Due to their status, First Nations therefore have special rights over the territory and its resources.

The First Nations of Quebec have affirmed these rights through the elaboration of 26 fundamental principles of peaceful coexistence.[7] Among these are the following:

- Unique status of Aboriginal peoples.
- Right to self-determination.
- Right to self-government.
- Land and resource rights.

It is in light of these rights and interests that First Nations view their relations with the governments.

[6] http://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf
[7] http://www.apnql-afnql.com/en/apropos/26-principes.php

Relationship between the First Nations and the Government of Quebec

The Quebec National Assembly unanimously passed a resolution recognizing the First Nations and indicating the principles that should guide government-to-government relations between the First Nations and Quebec.

On June 17, 2003, the AFNQL and Premier Jean Charest signed the Mutual Political Commitment, which affirmed a common desire to improve territorial relations in respect of the rights of both parties.

On December 3, 2012, the AFNQL and the government of Premier Pauline Marois participated in the Summit on Territories and Resources convened by the First Nations. On this occasion, the AFNQL reiterated to the Premier and the members of her government, including the Ministre des Ressources Naturelles, four issues essential to a territorial relationship between the First Nations and Quebec that was equitable, respectful and profitable for all:

- Co-management of the territory with the First Nations;
- The conservation of the territory in partnership with the First Nations;
- The obligation for consultations in order to accommodate the First Nations;
- Royalty payments to First Nations.

It is in a constructive spirit and in the hopes of concrete results that the AFNQL views its discussions with Quebec. However, after decades of meetings, discussions and negotiations, it is clear that the promises extended by the Quebec government in the discussions and documents have not been met. First Nations must fight again and again for their rights to be recognized, respected and applied.

Relationship between the First Nations and the Government of Canada

Relations with the Government of Canada are not much better. The Harper government is in its eighth year in office. It is possible to classify its laws and draft laws concerning First Nations into two groups: those that aim at controlling First Nations governments and those that seek to diminish the responsibility of the Federal Government towards them.

In the first category is everything concerning, among other things, the accountability of councils. The funds that come from the Federal Government must be spent according to the priorities established by the federal government and strictly following the standards set by the Federal Government. In the second category are found measures concerning drinking water, the environment, the highly controversial draft law on education, etc. The Federal Government has completely relinquished all responsibility for the poor socioeconomic conditions in which First Nations live.

In January 2012, the Federal Government began to talk about relations between the Crown and the First Nations. On January 24, 2012, a very formal, high-protocol meeting was organized that included First Nations leaders, the Governor-General himself and members of the government. Among other things, a new Royal Proclamation was discussed. This meeting did not lead to the results expected by the First Nations. In fact, no further progress was made until January 2013. In the wake of the Idle No More movement and the fast of Chief Spence, Prime Minister Harper agreed to meet a group of First Nations leaders on January 11, 2013, in Ottawa. During the meeting, the Prime Minister committed to upgrading the political level of discussions surrounding the implementation of treaties on the one hand, and to redesigning the comprehensive claims policy on the other. Since then, no implementation of this commitment has taken place.

Credibility of governments and their commissions

The uranium industry is, in all respects according to the departments and their commissions, strictly regulated by federal and provincial legislation, including laws pertaining to public health and environmental protection. Recently, First Nations have had several opportunities to question the credibility and independence of these governments and commissions.

Recently in Cacouna, the Quebec Minister of the Environment took the unexplained decision to authorize TransCanada to begin exploratory drilling in the beluga habitat of the St. Lawrence, right in the middle of a nursery. The population of belugas in the St. Lawrence estuary is listed as threatened and protected under the federal *Species at Risk Act* (SARA). An analysis of the decision making process by the Superior Court highlighted several flaws including the lack of information available to the Minister to make a decision, and the judge concluded that "*the reasonableness of Quebec's decision can be seriously questioned*." [8] (*translated*)

In a completely different project, lawyers for the Centre québécois du droit de l'environnement (CQDE) concluded that Environment Canada officials have "deleted" and "altered" "critical" scientific information that would have enabled Minister Leona Aglukkaq to recommend an emergency order to protect the chorus frog in La Prairie. The species is threatened in this municipality by a real estate project valued at $300 million. Since 2010, the frog been classified as at risk in Canada. Work began in July.

The independence of the Canadian Nuclear Safety Commission (CNSC) may also be questioned as the "the CNSC is mainly funded from a revenue spending authority, allowing the cost

[8] http://www.ledevoir.com/environnement/actualites-sur-l-environnement/419297/port-petrolier-la-cour-fait-cesser-les-forages-a-cacouna;
http://www.ledevoir.com/documents/pdf/cacouna_jugement.pdf

recovery of activities through fees collected from industry."[9] Thus, if the number of licenses granted decreases, a large part of the CNSC's revenue also decreases.

First Nations perspective on development

The AFNQL wishes to acknowledge the efforts of the Ministre du Développement Durable, de l'Environnement et de la Lutte contre les Changements Climatiques (MDDELCC) to set up and conduct an investigation and a public hearing on the issues of the Quebec uranium industry.

However, and this also applies to other issues, the AFNQL can only deplore the very Cartesian view adopted by policymakers. A perfect example is the lack of consideration in the mandate of the BAPE of rare earth metals and future uses of uranium, including for the risky nuclear energy and nuclear weapons, which continue to threaten humanity.

This narrow focus prevents consideration of future generations. This is a dangerous position in a sector such as the uranium industry, when the longevity of the danger this activity represents is taken into account. The principles of sustainable development and the precautionary principle are inherent in Aboriginal culture. Policymakers should benefit from this example and apply these principles.

The presence of First Nations is often seen as an obstacle to development. However, a number of experiences (in Quebec and in other provinces of Canada) demonstrate that their participation in economic activity can make a very positive contribution to regional development. First Nations are in no way opposed to development, but not in any condition. Proof of this can be found in local agreements that have been negotiated with certain mining and forestry companies and the openness First Nations have displayed in closely collaborating with different levels of government, particularly when it comes to the development and management of land and resources. But their involvement by the governments has too often come down to a simple consultation late in the process, reduced to partial information, and in total denial of their rights. First Nations do not conceive the territory as being just a resource to exploit. Ecosystems in their entirety are an integral part of the cultural heritage of First Nations who have always been, and intend to remain, closely associated with the conservation and development of the environment. Thus, the future of the territory can not unfold without the close collaboration and major involvement of the First Nations. In addition to occupying and continuing their traditional practices in the territory, they have all the legitimacy necessary to choose the development options that they wish to apply.

First Nations seek a balance between on the one hand, responsible development and on the other, protecting the environment and their traditional way of life. The uranium industry does not correspond to these criteria.

[9] http://www.nuclearsafety.gc.ca/pubs_catalogue/uploads/2013-14-Quarterly-Financial-Report-Q1.pdf

Mining Act

Despite the new Quebec *Mining Act*, the biggest shortcomings in the previous legislation remain, including the violation of the constitutional rights of First Nations (see the First Nations briefs on this matter tabled during the special consultations and public hearings on Bill 43, the *Mining Act*, in the fall of 2013). Specifically, the current mining law does not meet the constitutional obligation to consult with First Nations. The judgment of the Yukon Court of Appeal confirmed this principal in its Ross River decision in 2012, the government must fulfill its constitutional duty to consult and accommodate with respect to the registration of mining claims and before exploration activities are undertaken, which are likely to have a detrimental effect on the rights of First Nations.

In summary, the new mining law does not address the following problems:

- Respect for the constitutional rights of Aboriginals in connection with free-entry mining (Ross River v. Yukon decision, 2012).
- The adoption of specific environmental regulation of mines as there is for other industries.
- Stricter enforcement of laws by the responsible departments.
- Decree of a moratorium on uranium mining and rare earth elements.

The AFNQL wishes to collaborate with the Quebec government to correct the shortcomings in the law and to contribute to a fundamental rethinking of the Quebec mining regime. This would ensure that not only the rights of First Nations are respected, but that it would also be designed to avoid the ecological horrors of the past by creating a system that:

- is modern;
- is worthy of Quebec and First Nations;
- respects the rights, values and way of life of First Nations;
- protects the environment and the principles of sustainable development.

The mining industry, despite having made some steps forward, continues to pollute the rivers and lakes that First Nations depend on for their cultural survival while all too often continuing to ignore their rights and their use of the territory.

Social acceptability

In respect of the rights and status of First Nations, the position of the AFNQL must be respected. All the more so since it is fully consistent with the views of many individuals that have spoken out and local movements that have sprung up to say no to uranium, clearly indicating the absence of social acceptability in regards to the uranium industry.

It should be noted that opposition to uranium mining now extends to more than 300 municipalities, organizations and Quebec First Nations, including the Cree Nation of Mistissini, which is burdened with the most advanced uranium project in Quebec (Strateco's Matoush project). The Grand Council of the Crees adopted in august 2012 a resolution declaring a moratorium on the exploration and exploitation of uranium. In last few years, wherever uranium projects have attempted to establish , there was a stiff opposition: watershed of the Ottawa River (2005-5006) ; Laurentians region (2006-2007) ; Sept-Iles (where doctors were prepared to resign if the project went ahead)and the North Shore (2008-2009) ; Grand Council of the Crees and the Cree Nation of Mistissini in the James Bay (2010-2011) ; Pointe-à -la-Croix in the Baie-des -Chaleurs (2011); Mingan and the Lower North Shore (2011-2012) .

Social acceptability is crucial to any project and an essential component of it is the consent of First Nations.

Opposition to this industry is very strong and the government must defend its credibility and its respect for democracy by declaring a complete moratorium on uranium activities.

Rare earth elements

Even if it is not included in the BAPE mandate, AFNQL wants to raise its opposition to the exploration and exploitation of rare earth elements. The methods of production and conversion of rare earth elements, currently used in the world, are very polluting. For example, their extraction and their conversion are made with acid. Moreover, the methods used create a lot of radioactive waste which would not be subjected to the uranium regulation.

There is currently not any rare earth mine in Canada, and there is no experience of governmental regulation in that field. That is why AFNQL adopted, October 23, 2014, a resolution affirming its support of the position of the Eagle Village and Wolf Lake First Nations that a moratorium on mining of toxic rare earth elements should be included in the moratorium on uranium in Quebec.

IN SUMMARY

- First Nations have special rights over the territory and resources.
- In addition to the right to occupy their territories and to practice their tradional practices, First Nations have an inherent right to self-government that includes a right to choose how their territories will be developed.
- These rights have been recognized, affirmed and clarified by the *Constitution Act*, *1982,* various judgments of the Supreme Court of Canada and the United Nations.
- First Nations are not opposed to development.
- The AFNQL has adopted a resolution affirming its strong opposition to the development of the uranium industry.
- This rejection is based on the inherent dangers of this activity. The development of the uranium industry is inconsistent with the rights, interests, values and needs of First Nations and represents a direct threat to their way of life.
- Governments must respect the choices of AFNQL and involve First Nations in all processes related to the management and development of territory and resources, with a view to co-management of the territory.
- The *Mining Act* does not respect the rights of First Nations and is in contradiction with the constitutional obligation to consult them.
- The exploration and exploitation of uranium represent known and unknown risks to human health and the environment. As such, this industry does not meet the principles of Quebec's *Sustainable Development Act*, which the government must respect. Specifically, uranium activity contravenes the precautionary principle.
- AFNQL is not the only one to oppose uranium activities. Many citizens and local groups are firmly against the development of this activity. The uranium industry therefore does not have the level of social acceptability that would be required in a democracy to advance.
- AFNQL request the integration of a moratorium on the exploration and exploitation of rare earths in the moratorium on Uranium.

ENVIRONMENT

First Nations have a special relationship with the land they occupy and live on, and on which they practice their traditional activities. They would be the first to face the contamination brought about by uranium activities.

Chemical and radiological toxicity of radionuclides associated with uranium activities

In addition to chemical contamination (heavy metals and other pollutants) that is found in any conventional mining, the exploration and exploitation of uranium also generates risks of radioactive contamination.

Uranium is the first link in the chain of disintegration in which other chemical elements are formed, some of which are more radioactive than uranium. Over 53 radiological and chemical contaminants have been identified in the studies conducted by INSPQ on environmental contamination in connection with uranium mining, the principal ones being thorium, radium, radon, polonium, uranium, etc.[10] These elements are highly toxic (chemically and radiologically) and the radioactive pollution they generate is difficult to control and lasts for thousands of years.

Non-radioactive elements are also released: arsenic, copper, selenium, nickel, vanadium, lead, ammonia, etc.

The simultaneous presence of several metals may cause chemical and radiation toxicity greater than that of each individual metal.

Various ecosystems (water, air, soil) are impacted by exploration (drilling, storage, etc.) and exploitation (crushing, storage, transport, etc.) activities. According to INSPQ, "the uranium mines involved in the studies included in our analysis are likely to have contributed to radiological and chemical contamination of water, fish and mussels collected from their neighbouring environment."[11] (*translated*)

Contaminants and vectors of this pollution are numerous, including for example:

- Drilling activities that increase the rate of emission of radon gas into the air.
- The leaching of fluids causing the release of radioactive substances and the dissolution of metals that result in environmental contamination especially to aquifers.
- The emission of radioactive dust released during crushing, transportation and storage of metals and waste.

[10] INSPQ. *Les impacts sanitaires en lien avec les projets uranifères nord-côtiers*, 2013, p. 126
[11] Ibid, p. 150

- Exposure to air or water of pyrite residues resulting in acid mine drainage through oxidation of the rock, a major source of pollution to the surrounding environment.
- Etc.

Water treatment plants are not 100% effective. It is the same for air filtration facilities. The average efficiency of leaching processes in the words of one of the experts from the CNSC[12] at the BAPE hearings is 96%. This implies that a minimum of 4% of the contaminants present in effluent end up in the environment and accumulate there.

Environmental contamination can extend over very long distances; "... There is evidence that environmental contamination from a uranium mine site can extend over significant distances."[13] (*translated*) Dust, carrying radiation, which emanates from the mining, storage and transportation of waste, can be found up to several kilometers around the mine, even in light winds, but the data are insufficient to determine a zone of contamination around uranium sites. Long after a mine is closed, radionuclides are still present at the site.

Management of radioactive tailings

For each ton of uranium mined, thousands of tons of mining waste are generated. Two types of waste are created by the extraction of uranium: large amounts of water loaded with chemical and radioactive products and residues in the form of grains of sand, which are also radioactive. According to INSPQ, "once the uranium is mined, approximately 85% of the radioactivity of the original ore remains in the tailings or other waste. Considering their long half-lives (thousands of years), thorium-230 and radium-226 remain present for a long period of time."[14] (*translated*) This waste remains radioactive for thousands of years.

Residues can generate acid or metal leaching and present a long-term risk in terms of contamination of groundwater and soil (directly) and wildlife and people (indirectly).

The large surface area of sites where uranium tailings are deposited also means that large parts of the territory lose their value forever and can not be dedicated to other uses.

There are yet no known methods for regulating or managing a site for such a long period of time. Thus, "the (Direction de santé publique de la Côte-Nord) working group on uranium mines reported serious reservations concerning the duration of environmental monitoring and the ability to measure the long-term impacts. The report asserted that it is the same for mine waste management and decommissioning of mine sites, especially considering that these residues remain contaminated for thousands of years".[15] In addition, several people involved in France, are now wondering how to preserve institutional memory regarding the location of uranium

[12] Presentation of Jean-Luc Leclair, CNSC, BAPE public hearings, September 10, 2014, Quebec City.
[13] *Rapport du groupe de travail de la Direction de santé publique de la Côte-Nord sur les mines d'uranium*, 2014, p. 22
[14] INSPQ. *Les impacts sanitaires en lien avec les projets uranifères nord-côtiers*, 2013, p. 237.
[15] *Rapport du groupe de travail de la Direction de santé publique de la Côte-Nord sur les mines d'uranium*, 2014, p. 12.

contaminated sites in the very long term (thousands of years) so that future generations are not exposed to contaminants. The French government has still not found the answer to this problem.

The lifespan of the waste represents a danger for the present generation but also for those who will follow. Future generations will be left with problems that require interventions that will be more expensive than the value of the benefits provided for in this moment.

Furthermore, waste containers do not have a life expectancy that is as long as the radioactive materials they contain, and their degradation will cause additional environmental contamination. Both kinds of storage solutions presented by the CNSC at the BAPE hearings, submersion and burial, contain elements of risk that could result in environmental and health damage. Moreover, it is possible that future circumstances, unforeseeable at the moment, could have the effect of exposing stored residues to the air or water (in a context of climate change and increased climate extremes, for example).

Finally, the Federal Government is currently seeking sites for nuclear waste storage. There is a possibility that this will be done in the provinces involved in the uranium industry. In addition to radioactive mining waste, the province will therefore have to receive and manage nuclear waste.

Risk of accidents

Even the most state-of-the-art uranium mines are not immune to failure. There is no such thing as zero risk. According to INSPQ, "natural disasters such as earthquakes, fires or floods could significantly increase the magnitude of these risks."[16] (*translated*) A number of technological accidents and spills have occurred since 2008 in Quebec; there were at least a dozen major mining spills totalling 300 million liters of tailings or other site residues that were dumped in surrounding waterways.[17]

It is the same for the storage locations of mining waste. In February 2014, , after fifteen years of operation, the Waste Isolation Pilot Plant (WIPP), a radioactive waste repository located in New Mexico, experienced two major incidents: a fire in the facility and 9 days later, a release of radioactive contamination in the air, despite the proper functioning of the filters designed to prevent such an occurrence.[18]

[16] INSPQ. *Les impacts sanitaires en lien avec les projets uranifères nord-côtiers*, 2013, p. 238.
[17] Ugo Lapointe citing data from the Register of Environmental Emergencies of the Ministère de l'environnement, BAPE hearing on June 17, 2014.
[18] http://www.irsn.fr/FR/Actualites_presse/Actualites/Pages/actualite.aspx

Mine site rehabilitation

The decontamination of a mine site is a long and expensive process. It is even more so for a uranium mine site whose contaminants are very difficult to control.

As soon as exploration begins, there is pollution. In a presentation at the BAPE hearings of a rehabilitation project of abandoned mining exploration sites in Nunavik,[19] of 45 abandoned sites listed, no company could be located. The companies had been dissolved and therefore were not pursuing restoration activities. "The whole question of the restoration of exploration sites is (also) part of the uranium problem... One wonders about the behavior of some companies in this regard and the ability of regulators to enforce current laws and regulations to bring them into compliance. This is an important concern for which the answers are still unclear."[20] (*translated*) Recently, the Quebec Lithium mine stopped its operations; the owner company has placed itself under the Loi sur les arrangements avec les créanciers des entreprises. Many financial aids were granted by the Government of Quebec to this mine (a loan guarantee of $ 60 million to start, five million by Investissement Québec). However, the mine did not pay the 25.6 million that were intended to pay for the site restoration. This new case is added to nearly 700 abandoned mine sites at the expense of the taxpayers of Quebec[21].

In addition, although today there is an obligation to dismantle all facilities and leave the site in its initial state, government departments do not have the resources to conduct systematic monitoring of all facilities. In addition, there is a blurring of responsibilities between the two levels of government (provincial and federal) on the one hand, and between various departments on the other hand (MERN and MDDELCC) which complicates the process of implementing rigorous monitoring. This ambiguity also translates into a great complexity of laws and regulations governing nuclear and uranium mining activities. This is not reassuring as to the ability of governments to ensure the safety of their citizens against the effects of these activities.

Exposure and toxicity to the surrounding natural environment

As previously discussed, uranium exploration and exploitation generate chemical and radiological pollution of the environment.

In the report "Toxicité chimique de l'uranium sur les organismes terrestres. Revue de littérature—(*Chemical toxicity of uranium on terrestrial organisms. Literature Review*)" from the Centre d'Expertise en Analyse Environnementale du Québec, several effects of radionuclides on the fauna and flora have been identified:

[19] September 8, 2014, BAPE hearings on uranium.
[20] INSPQ. *Les impacts sanitaires en lien avec les projets uranifères nord-côtiers*, 2013, p. 7.
[21] http://www.ledevoir.com/environnement/actualites-sur-l-environnement/421688/mine-quebec-lithium-un-projet-juge-prometteur-s-effondre

- Possible accumulation in the bones;
- Possible accumulation in the kidneys;
- Weight loss;
- Decrease in life expectancy;
- Dental problems;
- "Uranium toxicity is expressed in birds ... by abnormal biochemistry, liver and kidney damage, and protein deposits in the kidneys."[22] (*translated*);
- "In mammals (...). Several studies of laboratory animals (also) showed that uranium is a metal especially toxic to the kidneys and can cause kidney dysfunction. Effects on reproduction and development were also observed in mice in the laboratory."[23] (*translated*);
- Reduced growth for certain plants;
- Etc.

One chapter in this report deals with the genotoxicity of uranium. Uranium and its derivatives are in fact also likely to cause damage to DNA and cause genetic mutations that can have serious consequences. "It has been suggested that the genotoxicity of uranium may be due to its radiological toxicity as well as its chemical toxicity (Busby and Schnug, 2007). It is difficult to distinguish the two modes of action when the concentrations of uranium in the environment are low or internal doses in organisms are low."[24] (*translated*)

Uranium and its derivatives as well as other contaminants induced by uranium activities are found in and accumulate in wildlife and flora, thus in the food chain. In Saskatchewan, for example, tests have shown the presence of radioactivity in lichens, mosses, trees, fish and caribou which compose the staple diet of First Nations (study , however, does not conclude with certainty on the responsibility of mining and that of natural background). Lichens accumulate atmospheric radionuclides more efficiently than other vegetation because of their lack of roots, their large surface and longevity. Caribou eat lichen. Radionuclides transported by air, particularly cesium-137, lead-210 and polonium-210 are transferred by this vector to humans.[25]

First Nations occupy the territory dynamically. In addition to environmental impacts and in terms of access to the territory, common to all mining activities, uranium exploration and exploitation add radiological risks. Through their activities, including the fact that First Nations take their food in the territories, they are particularly vulnerable. The risks to health, human and animal, add fears that could lead some to stop practicing their traditional activities and access certain areas they judge dangerous.

[22] Centre d'expertise en analyse environnementale du Québec (2014) *Toxicité chimique de l'uranium sur les organismes terrestre*. *Revue de littérature,* p. 113.
[23] Ibid.
[24] Centre d'expertise en analyse environnementale du Québec (2014) *Toxicité chimique de l'uranium sur les organismes terrestre*. *Revue de littérature*, p. 107.
[25] Thomas, P. A., and T. E. Gates. "Radionuclides in the lichen-caribou-human food chain near uranium mining operations in northern Saskatchewan, Canada." *Environ. Health Perspect. 1999.* 107(7): 527-537.

IN SUMMARY

- First Nations are particularly vulnerable to environmental impacts of uranium mining because they occupy the territories that would be affected by such activities and derive their food (flora and fauna) from these territories.
- In addition to the risk of contamination by heavy metals and other types of pollutants, uranium mines involve risks of radioactive contamination.
- The impacts generated by the exploration and exploitation of uranium persist for thousands of years. This is incompatible with the culture of the First Nations wherein any reflection must be focussed on the long term for the present generation but also for the seven which will follow.
- For every ton of mined uranium, thousands of tons of mine waste are generated.
- Up to 85% of the original radioactivity is found in the tailings.
- Mining waste remains toxic and radioactive for thousands of years.
- There is very little certainty about the effectiveness of methods of managing and isolating tailings.
- Chemical and radioactive contamination impacts surrounding ecosystems (environment, wildlife and plants). Chemical and radioactive elements are also found in the food chain affecting humans.
- Some environmental risks are still very poorly documented.
- Even the most modern uranium mines are not immune to failure.
- Environmental contamination can spread over long distances.

HEALTH

First Nations occupy and derive their food from the territory. The health dangers of uranium activities directly threaten their health and lifestyle.

Chemical and radiological toxicity of radionuclides

Items previously presented in the section on the toxicity of radionuclides to the environment are also applicable to this section.

Uranium mines add to the risks, particularly in terms of radioactivity and the potential for a number of contaminants to combine, that are already present in traditional mines. Indeed, during the exploration and exploitation of uranium ore, several radionuclides that have different impacts on human health can be found in the environment, including uranium-238 and the products of its disintegration.

Half of the material of the uranium decay chain consists of alpha emitters and the other half consists of gamma- or beta-emitters having a high penetration ability, which have a very long period of activity.

The exploitation of uranium mines may release other contaminants besides radionuclides into the environment. These chemical contaminants are inherently toxic. Similarly, certain radionuclides can have a toxic potential in addition to their associated radioactivity effects. For example, uranium is nephrotoxic (toxic to the kidneys) in addition to the effects related to the radiation it can emit.[26]

Uranium is also genotoxic and thus has an effect on DNA, which may cause genetic mutations in victims of contamination. These mutations may have different effects, such as making people more vulnerable to tumors.

Many uncertainties remain about the precise impacts of radionuclides on human health. Among other things, the combined effects of different radioactive elements and other factors (silica dust, diesel, cigarettes) and chemical elements are not documented. Exposure to multiple sources of carcinogens could not only add to the risks but could very well multiply them. The INSPQ study was cited and presented on numerous occasions during the BAPE commission hearings. Consultation of this report, including Appendix 2, provides a good view of the known health effects of radionuclides. These effects are proven. However, it lacks a number of data on other potential risks and studies are limited in their ability to fully integrate the multitude of factors that come into play in real life. In its conclusion, the INSPQ says that “no assessment of the total risk (i.e., including all possible means of exposure) was found.” (*translated*) This does not minimize the risk, on the contrary, it indicates that it is underestimated.

[26] INSPQ. *Les impacts sanitaires en lien avec les projets uranifères nord-côtiers*, 2013, p. 276.

As for the document produced by the DIVEX network,[27] it does not address head on one of the major issues of uranium mining, which is the very long-term management of thousands of tons of toxic and radioactive residue left behind, and the risks this waste poses to health, safety and the environment.

There are three sources of danger to humans related to uranium activities: inhalation of radon, ingestion of radionuclides and radiation exposure. Internal exposure to radioactive materials during the mining and processing of uranium can result from inhalation, ingestion, or through a cut on the skin. Then, they are deposited in the organs for a long period where they emit radiation. External radiation exposure (for example, exposure to beta or gamma radiation, and to a lesser extent, alpha rays) can also be a health risk.

Effects of radionuclides on health

The effects of radioactive elements on human health are multiple and complex. The chemical and radiological toxicity of uranium and its derivatives is involved and there is no threshold below which there is zero risk. Any radiation dose, however small it may be, carries some danger, an increase in risk to the health of individuals.

The main documented risks are the following:

- Documented increased risk of lung cancer among mine workers.
- Suspected increase in risk of leukemia deaths for the population. The studies reviewed by INSPQ document leukemias with a fatal outcome. The risk is underestimated because it does not take into account cases which did not cause death.
- Suspected increased risk of genetic mutations and adverse pregnancies. "The risk of damage to the DNA is present, although small, even when exposed to low doses of radiation. Ionizing radiation would be the initiator phenomenon of cancers. Alpha radiation causes the most severe biological damage by breaking the two arms of the spiral of the cell's DNA. The probability that errors will occur during repair is higher."[28] (*translated*)

The sixth report of the United Nations Scientific Committee on the biological effects of ionizing radiation[29] explains that even when alpha particles pass through a cell only once, there is a risk of cancer developing if the cell is not properly repaired.

In his essay, "Impacts de l'exploitation des mines d'uranium sur la santé humaine" (*Impacts of the Exploitation of Uranium Mines on Human Health*) Vincent Amabili Rivet lists several studies

[27] Divex, UQAM, Université Laval. *L'état des connaissances, les impacts et les mesures d'atténuation de l'exploration et de l'exploitation des gisements d'uranium sur le territoire québécois.* 2014.
[28] Vincent Amabili-Rivet, Masters thesis in environment at the Université de Sherbrooke. *Impacts de l'exploitation des mines d'uranium sur la santé humaine*, 2013, p. 24.
[29] UNSCEAR. *Rapport du Comité Scientifique des Nations Unies pour l'étude des effets des rayonnements ionisants.* 2010.

that have highlighted the effects of uranium on human health. His study on the subject has enabled him to identify that:

- The radiological toxicity of uranium is based on its presence in the bones over a long time from which is emitted gamma and alpha radiation that damages various biological tissues (Auger et al., 2010).
- That a number of studies demonstrate elevated health problems associated with uranium 238 such as an increased risk for people exposed to it of developing cancers such as Hodgkin lymphoma (A. Dosman et al., 2009);
- It also seems that uranium could contribute to osteoporosis, have neurotoxic and hepatotoxic (toxic for the liver) effects and be an endocrine disruptor (hormone secretion) (Auger et al., 2010);
- Because of the types of radiation emitted, radium-226 could reach several areas of the body and cause leukemia, bone cancer and lymph cancers (Auger et al, 2010);
- The effects of radiation exposure do not fade with time, but accumulate (Brenner and Hall, 2007). Indeed, the exposure limit accumulates each year. The addition of a few mSv received each year becomes a dose of 100mSv and more (J. Gonzalez, 1994).

Children and the elderly are particularly vulnerable to these risks. What about people already affected by a disease, such as cancer, who would be exposed to an additional source of carcinogenic elements? There is no extensive study on this subject or on the cross-contamination of different elements.

Several studies have shown the impact of radionuclides on workers, such as the development of cancer. According to the CNSC, new measures have been taken to limit the risks. However, these new practices have not been tested over a long enough period of time and it is not yet possible to assess whether these measures are effective. Indeed, the latency of cancer, that is to say, the time between contamination and the development of cancer, can be very long (thirty years). Studies show that there is a relationship between exposure to radiation and the risk of developing cancer. This means that even very low levels of radiation can cause cancer in people who have been exposed.[30]

First Nations are an extremely vulnerable population to the risks because, besides the fact that they occupy and inhabit areas where mining activities take place, they derive their food from these territories. This means that in addition to being infected by direct contact with radionuclides (inhalation of radon, radioactive waste sites, etc.), First Nations are increasingly contaminated by the ingestion and the use of contaminated elements (fauna and flora). Moreover, as explained at the BAPE hearing on September 24, 2014, First Nations do not limit themselves to eating the meat of an animal. Out of respect for it and in accordance with their traditional values, First Nations use the animal in its entirety: bones, antlers, organs, etc.

[30] *Uranium mining in Virginia*, National Academy of Sciences, committee on uranium mining in Virginia, 2012.

However, as indicated in the section on toxicity to fauna and flora, among the documented effects, some radionuclides accumulate more readily in these parts.

Psychosocial effects

Psychosocial effects specifically related to uranium mining have not been particularly documented. Social impacts associated with the presence of a conventional mine in a territory are also found in populations living near a uranium mine. These effects include problems related to alcohol and drug use, growing social and economic divisions in a population, a social climate affected by the health and safety conditions in mining, restrictions related to the accessibility of the territory, distress, etc. These impacts occur before and during the exploitation phase but equally when operations cease, when people suddenly find themselves unemployed.

People living in and occupying territory in the vicinity of a uranium mine are most impacted. Indeed, in addition to the effects mentioned above, these populations develop greater anxiety related to radioactivity and its effects (actual and perceived) and the fear it causes.

Furthermore, the uranium industry is characterized by a distinct lack of social acceptance on the part of the population. The operation of a uranium mine in a territory therefore leads to a sharp deterioration of the social climate and a loss of confidence in public authorities on the part of some citizens.

First Nations will be the most affected. They are first in line—as they are for environmental risks—they are the first to be affected because they live in the territories where the mines operate. Aware of the risks they incur through their traditional practices and the occupation of their territories they have, some might put an end to these activities, thus question their lifestyle. Hunting, gathering, fishing are all activities necessary for the continuity of this lifestyle inherent to the culture of First Nations. The relationship between government and industry on the one hand and First Nations on the other hand may become more degraded leading to an unstable and conflictual social climate.

IN SUMMARY

- There is no acceptable level of risk.
- First Nations occupy the territories where mining activities take place.
- First Nations are on the front line, and are therefore particularly vulnerable to the health and social risks—numerous and documented—implied by uranium activities.
- First Nations derive sustenance from animals and fruits from the territory. They also use the plants they gather there.
- Out of respect for nature, the entire animal is used (bones, organs, etc.).
- The effects and accumulation of radionuclides in wildlife (in the meat, but also in the bones, organs, etc.), flora and humans are documented, proven in some cases, "suspected" in others.
- The risks to the population are likely to increase with the increased level of regional pollution from uranium activities.
- The risk to the population is likely to exceed recognized standards and criteria.
- Uranium miners face an elevated risk of lung cancer.
- There are unknown risks associated with uranium. There is insufficient data to reach definitive conclusions on the incidence of non-fatal cancers and of other types of diseases. Since 1959, the WHO has conducted only limited studies on the effects of uranium on health (agreement with the International Atomic Energy Agency).
- In addition to psychosocial risks found in conventional mining activities, uranium activity and the danger it represents would result in a decrease of confidence in the authorities and increased anxiety among local populations.
- First Nations are particularly vulnerable to these psychosocial risks to the degree that their traditional way of life is directly threatened.

ECONOMY

The long-term social, environmental, health and economic costs outweigh any financial benefits from the exploration and exploitation of uranium. For AFNQL, the uranium industry is not a viable development option, neither for current generations nor for future ones.

Social and environmental cost

For the AFNQL, no economic consideration would justify Quebec engaging in the development of the uranium industry. The health, social and environmental costs are too high, and the potential financial benefits would be negligible in comparison. Especially since it is mainly the mining industries that would profit from these benefits, leaving the population to live with the impacts of these activities. In addition, the ambiguity that characterizes departmental responsibilities and between governments in this area and the lack of resources to conduct monitoring do not enable government authorities to rigorously assume their responsibilities.

Global demand for uranium

Quebec closed its only nuclear power plant in 2012, which means that the products derived from uranium mining would be dedicated exclusively for export, while the risks of contamination and the costs associated with long-term management of million of tons of radioactive residue left behind would rest on the shoulders of the Quebec government and its taxpayers.

This also means that the value of the uranium mined would be highly subject to market fluctuations. Quebec is a very small player in the global uranium market and therefore very vulnerable to fluctuations in uranium prices and to the machinations of larger producers such as Saskatchewan, Kazakhstan and Australia; these three jurisdictions respectively make up about 8%, 12% and 31% of global resources.[31] The resources of Quebec consist of small quantities at low concentrations, 10 to 1,000 times less rich than in Saskatchewan. As a result of the Fukushima disaster in Japan in 2011, the price of uranium has fallen by 50-70% since 2008. In addition, the uranium market in the United States, the largest market for uranium in the world, has been declining for a number of years, which has severely reduced the price of uranium. Several countries are reassessing their investments in nuclear energy and some now prefer to invest in other energy sources, including renewable energy.

According to the *World Nuclear Industry Status Report*,[32] nuclear energy as a percentage of the global energy market fell to 4.4% in 2013, the lowest level in 30 years. Conversely, the proportion of renewable energy has been rising by over 25% annually, exceeding for the first time global nuclear power capacity in 2012.

[31] www.world-nuclear.org accessed Aug. 18, 2014, 2009 public data
[32] World Nuclear Industry Status Report, 2014. http://www.worldnuclearreport.org/WNISR2014.html.

Short-term development

In essence, mining activities are not sustainable. Once the necessary ore has been extracted, or if the company can not maintain its operations, the mine ceases operations and closes. This is all the more unacceptable in the case of an activity whose pollution persists for thousands of years and whose known health effects are very dangerous.

AFNQL believes that people's health and their way of life should not be mortgaged, especially for an activity whose economic benefits are not sustainable.

According to the Ministère de l'Énergie et des Ressources Naturelles, the most advanced sites in Quebec—Strateco and ABITEX (Otish area)—contain deposits of barely 0.1% of global resources (concentrations of 0.01-0.7%). These sites have a life expectancy of 7 years. This amounts to less than 4 months of global uranium consumption. Profits from the mining of uranium will be short lived, but will leave behind tons of mining waste that will remain toxic and radioactive for thousands of years. This is not sustainable development and this represents an unacceptable burden on future generations.

The closing of a mine is accompanied by a program of long-term monitoring in the light of which the liability of the licensee may eventually be lifted, a step called exemption or license to abandon. Uranium tailings pose risks in perpetuity and require large investments for secure storage. Are mining companies, who are subject to the extreme price volatility of the resource, able to guarantee financing over such a long period? Will they keep population safe and preserve the environment for generations to come? Nothing could be less certain.

Alternatives

Across North America, the priority is to reduce the consumption of the most expensive electricity produced, mainly from fossil fuels and nuclear energy. In Quebec, the situation is completely different since electricity is generally less expensive and is a completely renewable resource. The province of Quebec has invested heavily in both wind and hydropower. In Quebec, electricity is a source of energy that is 99% renewable. Nuclear energy faces major technical and financial challenges: it is becoming more and more expensive and currently provides only 11% of the world's energy in 2013, down over twenty years from 17% in 1993. In contrast, renewables are growing at annual rates of 20-25%. The recent report of the Intergovernmental Panel on Climate Change (IPCC) also recognizes that nuclear power faces a number of problems related to the entire uranium life cycle, from uranium mining to the safe management of nuclear waste.

Several countries, states and provinces are moving away from nuclear power and uranium mining or have withdrawn from these areas of activity entirely and prefer other types of development for reasons of health, safety and the environment:

- In Canada, British Columbia and Nova Scotia have officially banned the exploration and mining of uranium in their territories.
- In the United States, the state of Virginia and the Grand Canyon sector have imposed moratoriums on uranium.
- Switzerland, Germany and France want to reduce their dependence on nuclear energy.
- China, Germany, Spain, Brazil, India, Italy and Japan all now produce more energy from renewable sources than from nuclear energy.
- The credit rating agencies Moody's and Standard & Poor's lowered the credit ratings of countries and companies investing in nuclear power.

Roughly 40% of mineral exploration expenditures, about $60-80 million between 2004 and 2008, has been paid by Quebec taxpayers through various tax programs (flow-through shares, refundable tax credits, support programs, etc.). This while governments have to struggle to give a few thousand dollars to the First Nations to participate in consultations.

Rather than serving to support uranium companies, money from the federal government, Quebecers and First Nations should instead be used to support alternative forms of energy (e.g., wind, solar, geothermal, hydro, not to mention energy efficiency) and other types of economic development more sustainable. From 2000-2013, 57% of investments have been budgeted for renewable energy compared to 3% for nuclear energy.

Ethical choice

The production of medical isotopes, often advanced as an objective of the exploitation of uranium, does not depend on uranium mining or nuclear power. Alternatives to medical isotopes exist. The Government of Canada[33] is now promoting medical isotopes produced from particle accelerators (e.g., cyclotrons at the University of Sherbrooke, University of British Columbia and the University of Alberta).

Uranium is used primarily to produce nuclear energy and for military purposes. The latter is the only area where uranium is essential. Quebec should not be a link in the chain that leads to the production of nuclear weapons that threaten humanity.

[33] http://www.rncan.gc.ca/energie/uranium-nucleaire/7794

IN SUMMARY

- For AFNQL, no economic consideration justifies incurring the risks associated with uranium activities.
- The social and environmental costs are larger than the financial benefits that will basically only profit industry.
- Uranium is mainly used to produce nuclear energy and for military purposes.
- The price of uranium has fallen 50% since the Fukushima accident in 2011 and 70% since 2008.
- The resources of Quebec are found in small amounts and at low concentrations that are from 10 to 1,000 times less rich than in Saskatchewan.
- Nuclear energy is increasingly expensive and faces many technical, financial and safety issues.
- Nuclear power accounted for 4.4% of the global energy market in 2013, the lowest percentage in 30 years.
- Nuclear energy is 2-4 times more expensive than wind power or hydroelectric energy.
- A number of countries are turning their backs on nuclear power or have drastically reduced the share of this energy.
- There are more sustainable and ethical alternatives to uranium (e.g., solar, wind, hydraulic, etc.).
- The production of medical isotopes is not dependent on uranium mining or nuclear power.

CONCLUSION

After a detailed analysis of the available information on the various aspects of uranium activities as enumerated above, the AFNQL renews its firm and definite opposition to the development of this industry.

The AFNQL therefore demands a complete moratorium on the exploration and mining of uranium including rare earth elements.

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