

# RESSOURCES UNDER PRESSURE (SWOT ANALYSIS)



## GÉOGRAPHIE – DNL EURO - WHAT FUTURE FOR GREENLAND? CASE STUDY ON RARE EARTH MINING

Contenu	Maps – Texts- Photos – Videos- + S-W-O-T grid ( blank and corrected one )
Thème	Sustainable development - Essential ressources wanted .
Notions abordées	Transnational Corporation ( TNC ) - Rare Earth elements – Balance between economics and nature – Multiple scale thinking
Compétences	<ul style="list-style-type: none"><li>- Problem solving with a SWOT analysis: Strengths – Weaknesses – Opportunities – Threats</li><li>- Understanding different points of view</li><li>- Learning key words related to the industrial world</li><li>- Working at different scales (international – national – local)</li></ul>
Objectifs	Using the S-W-O-T analysis to think about a complexe situation
Déroulement	Hour N°1 : Unu Mondo Video + study of documents 1 , 2 and 3 (guided by the teacher to set the plot and explain GME 's project.) Hour N°2 : Documents 4 to 7 (prepared at home) discussion in class . Hour N°3 : S.W.O.T table with teacher's guidance and pair work . Final task : The class is divided in 2 groups according to student's choice and individual speech or class debate can begin : For or against the project

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With the courtesy of [Unu Mondo Expedition](#) and its « You Tube Channel »

1'36 excerpt of EP.06 ([with French & English subtitles available](#))

Date : Septembre 2020

Listen to a 2 minutes [Video](#) to introduce the problem taking place in Narsaq , South Greenland.

## Document 1

 **GREENLAND  
MINERALS LTD**

HOME PROJECT MATERIALS COMMUNITY STRATEGY INVESTORS CONTACT 

### GREENLAND - DID YOU KNOW..

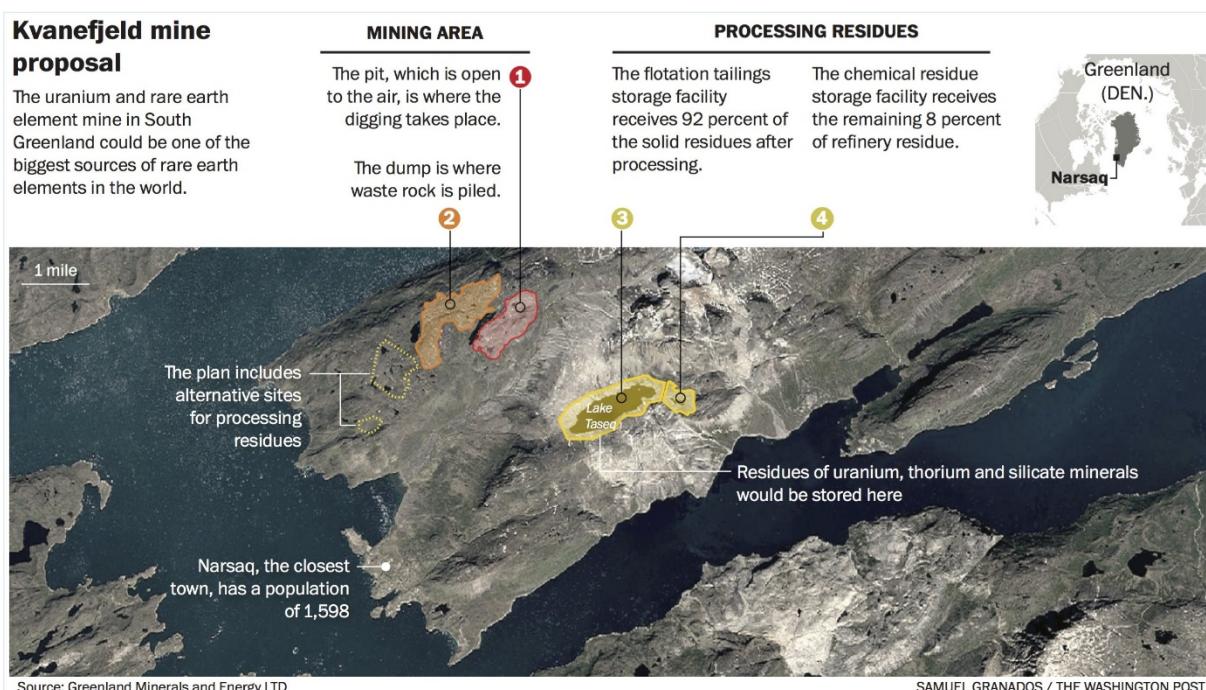
- Part of the Kingdom of Denmark
- Capital of Greenland is Nuuk
- World's largest island
- 3/4 covered by ice
- Least densely populated country (population 56,565)
- Midnight sun from May to July
- National symbol is the Polar bear
- Named by Erik the Red with the hope that the name would attract settlers
- Main industry is fishing
- Rich in mineral and energy resources



Source: Greenland Minerals and Energy website, an Australian TNC investing in South Greenland (Kvanefjeld)

<https://www.ggg.gl/community/greenland/>

## Document 2



Source: Greenland needs money. Is a uranium mine the answer? *The Washington Post*, February 10, 2017

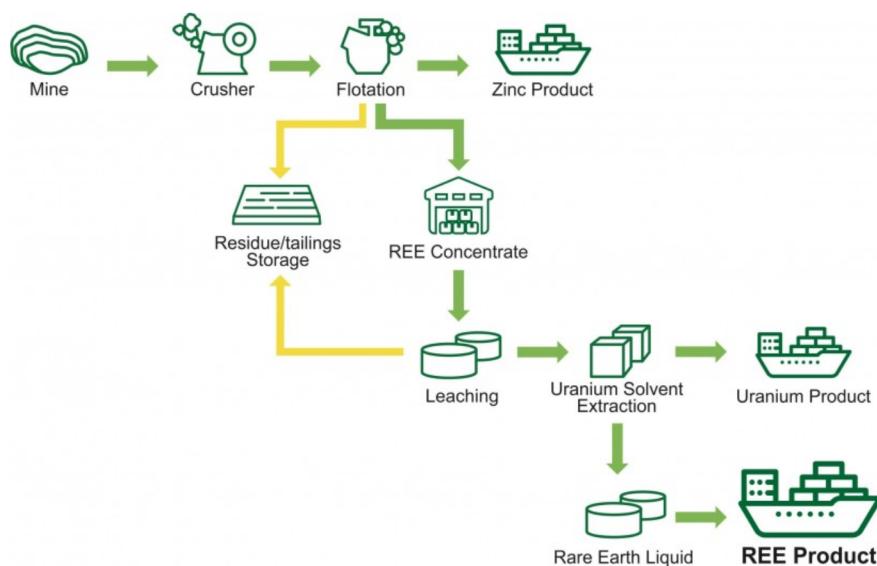
<https://www.washingtonpost.com/sf/world/2017/02/10/greenland-needs-money-is-a-uranium-mine-the-answer>

**Keybox:** Tailings = résidus / REE = Rare Earth Element / Pit=fosse / facilities = installations

### Document 3

Typically, very high temperatures and pressures and aggressive chemical approaches are required to extract rare earths from more common rare earth bearing minerals. The unusual Kvanefjeld minerals readily liberate rare earths in a simple atmospheric acid leach.

Both stages have been extensively piloted, and the flowsheet is currently undergoing further optimisation under guidance from Shenghe Resources Holding Co Ltd; a world leader in rare earth processing technology. Optimisation test work has been extremely successful to date, and will result in simplifications and substantial improvements in efficiency and cost-structure.



Source: GME process with the help of the Chinese TNC Shenghe Resources Holding Co Ltd  
<https://www.ggg.gl/project/processing/>

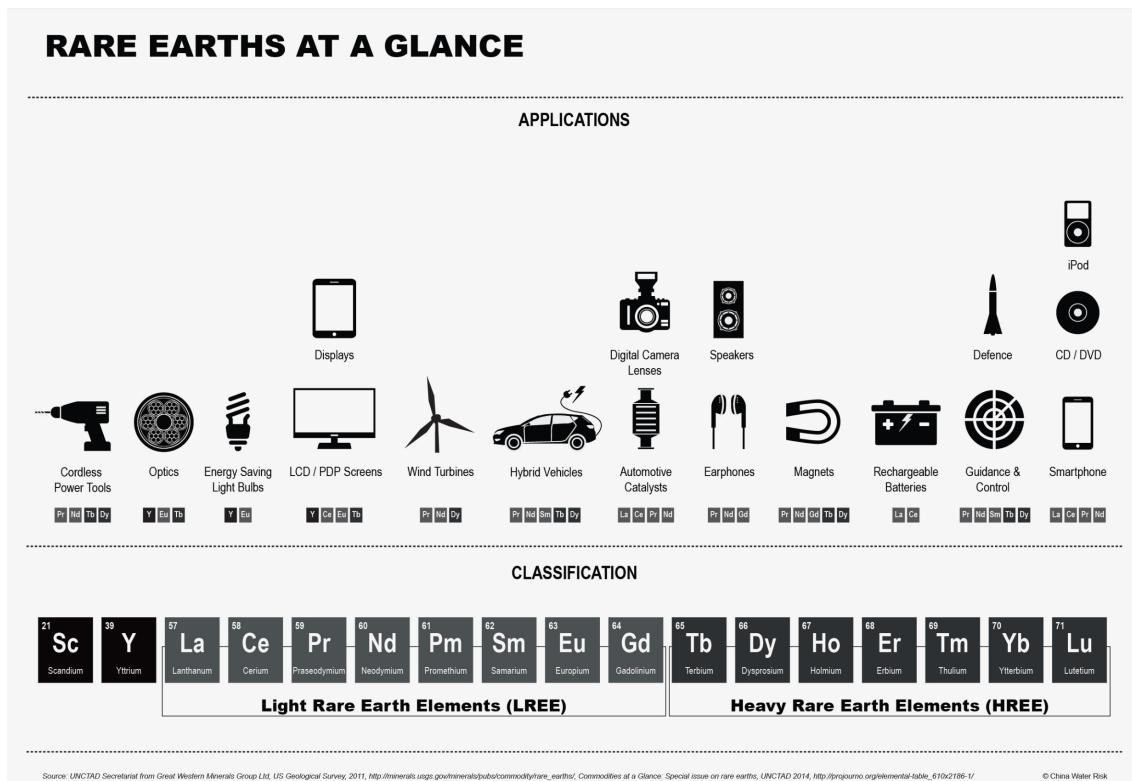
### Document 4

*"In Narsaq, a quiet, picturesque town in southern Greenland with a little more than 1500 inhabitants famous for producing sheep and vegetables, opinions are starkly divided over the Australian-based Greenland Minerals and Energy (GME) REE project. The local concern, however, is not so much the 12.5 percent Chinese ownership, but the environmental consequences of open-pit mining should it be given the go-ahead, which is looking increasingly likely.*

*Demand for REEs in the so-called green-energy sector is expected to increase in the coming years. Such minerals are used, for example, in wind turbines, solar energy and electric cars, as well as in products such as smart phones and flat screens. But in mining the Kvanefjeld REEs, GME will produce uranium as a byproduct, and it proposes to store the residue, or so-called tailings, in a lake in the mountains above Narsaq. The greatest challenge is how to manage the tailings and the radioactive water in the lake, the local concern being that the waste products will end up in the river and the town. To others, however, the mine represents the prospect of hundreds of new jobs and development, which are sorely needed in southern Greenland.*

Source: Chinese investments in Greenland raise US concerns. Strictly business? DIIS Policy Brief, 20. November 2018  
<https://www.diis.dk/en/research/chinese-investments-in-greenland-raise-us-concerns>

## Document 5



Source: Rare earths: shades of grey. Can China Continue to Fuel Our Global Clean & Smart Future. China Water Risk, June 2016, p. 12

<https://chinawaterrisk.org/wp-content/uploads/2016/08/China-Water-Risk-Report-Rare-Earths-Shades-Of-Grey-2016-Eng.pdf>

## Document 6

**MINERAL RESOURCES AUTHORITY**

EXPLORATION & PROSPECTING ▾ EXPLOITATION ▾ LOCAL MINING ▾ SCIENTIFIC SURVEYS ▾ **MEDIA** ▾ ABOUT ▾ 

**EXPLORE AND INVEST IN GREENLAND**

**MEDIA**

- NEWS
- PUBLICATIONS
- EVENTS
- PRESENTATIONS
- GALLERY

Source: Government of Greenland. Mineral Resources Authority (<https://govmin.gl/>)  
Video (3'34) available on Youtube : <https://youtu.be/uB3FFqyN8mo>

## Document 7



Protestors gather in Nuuk on May 2018 to demonstrate against uranium mining. (Urani? Naak)

Source : <https://www.arctictoday.com/greenland-nears-uranium-decision-opponents-fear-public-wont-heard/>, 16 mai 2018

### Milestones

1979 *Greenland Home Rule adopted by referendum*

2009 *full authority over natural resources under the Act on Greenland Self-Government*

2013 *Greenland lifted the former danish « zero tolerance » policy towards uranium*

### SPEAK UP!

Use all the sources provided. **Fill in the SWOT analysis regarding the Kvanefjeld project** (explain the Key Strengths, Weaknesses, Opportunities, Threats in the table).

Final task: Take position and speak up!

Imagine that you are a member of Narsaq city council and you have to plead the case in front of the 31 members of the **Inatsisartut, the Parliament of Greenland**.

You will be allowed a paper but don't read! You will be given 5 minutes to speak your mind and justify your point of view wether you are or not in favour of that project.

<b>Key STRENGTHS</b> (at the moment)	<b>WEAKNESSES</b> (at the moment)
Source 2	Map Source 4 + Video Unu Mondo :
Source 3	Source 7
Source 4 & 5	Source 4
Source 6:	
<b>OPPORTUNITIES</b> (for the future)	<b>THREATS</b> (in the future)
Source 4 :	Source 4 and Unu Mondo Video :
	Source 3 and 4

NAME, Firstname : .....

Assessment:      Poor      Requires improvement      Good      Outstanding

## KVANEJELK project SWOT analysis

Key STRENGTHS (at the moment)	WEAKNESSES (at the moment)
<p>Source 2</p> <p>A unique site « <b>one of the biggest sources in the world</b> » for Rare Earth, uranium &amp; Zinc, according to The Washington Post</p>	<p><b>Map Source 4 + Video Unu Mondo :</b></p> <p><b>The 1500 inhabitants of Narsaq are divided</b>  <b>+ “The environmental consequences of open pit mining”</b> (water, fishing and air might be affected by the tailings).</p> <p>The voice of a local ( <i>Inuit Ataqatigiit</i>'s member)</p> 
<p>Source 3</p> <p>Kvanejelk site is easier than other sites (<b>costsaving process</b> as a simple acidic leach is required here) according to the flowsheet</p>	
<p>Source 4 &amp; 5</p> <p>Great demand for REE in the green technology devices</p> <p>« <b>Demand for REEs in the so-called green-energy sector is expected to increase in the coming years</b> »</p>	
<p>Inferred by map &amp; source 2: <b>Southern seashore</b>  A deep-water harbour already on plot  Free of ice year-round as located in the South of Greenland (climate change helping)</p> <p>Source 6:</p> <p><b>Official support of the Greenlandic government</b> looking for financial support to reach full economic independence from the Kingdom of Denmark</p> 	<p>Source 7</p> <p>« <b>Urani ? Naamik represents a very small minority and they speak mostly Kalaallisut</b> (see the posters) what makes it complicated for them to play a role in a globalised project unlike the English-speaking Australian GME</p> <p>Source 4</p> <p><b>A « quiet picturesque town »</b>  <b>Ecological impact on the fishing areas</b> (fishing is the main traditional activity)  Concern for the guest farms and blue ice explorer activities if fauna and environment is affected (<b>tourism</b> is the new blooming activity in Greenland).</p> <p><i>Good to know : The legacy of the Danish tradition that enforced a law « zero tolerance against uranium » until 2013</i></p>



<b>OPPORTUNITIES</b> (for the future)	<b>THREATS</b> (in the future)
<p>MGE offers transforming the small port of Narsaq into a major shipping terminal</p> <p>Source 4 “hundreds of new jobs and development” as Narsaq is facing a shrinking population and unemployment (a new village / route ...)</p> <p>An opportunity for Greenland to earn subsidies and gain economic independence from the Kingdom of Denmark. « zero tolerance » of Denmark against uranium in the past (no doc provided)</p>	<p>Source 4 and Unu Mondo Video :</p>  <p>Who will benefit from the mining? The locals or <b>TransNational Corporation?</b> GME is an Australian-based group &amp; Investment of a Chinese Holding</p> <p>Source 3 and 4 Ecological impact of Radioactive tailings <b>for the health of the locals</b> <b>« how to manage the tailings and the radioactive water in the lake » + waste in the rivers</b></p>

NAME, Firstname : .....

Assessment:      Poor      Requires improvement      Good      Outstanding