

## Rare Earths are trump cards!

Interview mit Roderick McIlree – MD (Greenland Minerals and Energy Ltd.)

*Rare Earths are getting more and more important! They are in mobile phones, fluoroscopes, energy-saving lamps or batteries. Most of these rare earth metals are produced in China. Within the last 10 years, the demand for rare earth metals increased from 40,000 to 120,000 tons per annum. Within the same time-frame China decreased its exports from 48,500 to 31,300 tons per annum. That means that rare earth metals are already short – outside of China. Greenland Minerals and Energy Ltd. own the exploration rights for one of the largest rare earth deposits outside of China. We spoke with managing director Roderick McIlree about the potential of his company and we also wanted to know, which value Greenland's additional uranium resources have.*

**?** Roderick, Greenland Minerals holds a 61% interest in the Ilimaussaq Ore Field which lies in the very south of Greenland. Could you please give our readers a short overview of the historic work which has been done there?

**A** Historically there have been two key individual phases of exploration that occurred on the Kvanefjeld ore body which occurs within the Ilimaussaq mineral field. One was done by the Danish Atomic Energy Agency between 1975 and 1983: an essentially full feasibility study that culminated into a pilot plant test work that

produced uranium. That was a historic ore study which was essentially parked up because of the Three Mile Island incident at that time which just changed the public position towards nuclear power. Denmark stepped away from this project. It stayed that way for about 25 years. In late 2006 we visited Greenland and



Source: Greenland Minerals and Energy Ltd.

identified that particular project as having potential to host not just uranium but multi-metal-mineralization. In 3 seasons we drilled 45.000 meters of diamond core. We tested each one of those meters for 30 different chemical elements. So we had a very good mineralogical and metallurgical understanding of the ore body. At the end of 2008 we decided to test some of the regional targets and did 4 exploration holes into some of the similar looking geology. We identified several occurrences of similar sized ore bodies to Kvanefjeld. We would anticipate that by the end of 2012 this project has the po-

tential to host 1 – 2 billion tons of this particular material. We initiated a pre-feasibility-study with very positive results. Within the next 12 months we want to further optimize these results. The next 12 months will be a year which will earn a lot of value to our company.

**?** The Kvanefjeld Project, which is only one part of the Ilimaussaq Ore Field owns an enormous resource base. Could you please provide us an overview over your current resource base?

**A** At the moment we have 457 million tons in the global ore body. For the purposes of the pre-feasibility study we isolated 250 million tons of material that is of a higher grade. That formed the basis for the pre-feasibility study. The interesting thing within a project like this is that a high proportion of the costs are fixed in terms of opex and capex. What we need to do is to optimize the grade of the material going through the process. For example: increasing the grade by 10% adds one billion USD to the net present value. At the moment this is a low grade bulk ton but multiyear mining proposition. What we need to do is focus on increasing the grade through beneficiation or pre-concentration.

**?** Could you please outline the most important facts from the recently announced pre-feasibility

study interim report?

**A** There are three key things. The pre-feasibility study allows us to identify what the sensitivity drivers of this project are. Grade being one, throughput being another one and obviously the price of the commodity is the third. Even though the project has a very high initial capital cost to set up, it has only a three year payback. That truly is a staggering figure. We feel that within the next 12 months we will be able to increase the free cash-flow or the operating surplus of this operation to a rate of about 1 billion USD a year.

**?** When will a Definitive Feasibility Study be available?

**A** What we will be doing for the rest of this year is further optimizing the pre-feasibility study. That involves a little bit more test work and collection and capture of the rare earth elements. We also need to do some more work on the collection and the concentration of the heavy rare

earths, which are very valuable co-product. They are about ten times more valuable than the light rare earths. That should be completed within 12 months. At the end of that phase in early 2011, we will launch the definitive feasibility study and that will culminate in pilot plant test work that will occur both in Australia and France. That whole exercise would take between 12 and 18 months. That takes us through to 2012 for the completion of the definitive feasibility study.

**?** Greenland is getting more and more independent from Denmark. Is that good or bad for you?

**A** That is very good for us. I think Denmark will always be involved in the affairs of Greenland. However recently, Denmark has given the mineral rights to Greenland. Prior to that event, actually on the 1st January 2010 Greenland implemented its own mining act. As part of that act, it enables Greenland to make modifications to its mining act without consultation with Denmark. Be-

cause of that exact reason I just mentioned, we have recently applied to the government of Greenland for a new license covering the Ilimaussaq mineral field under the new mining act. This license has just been granted.

**?** When could you get a production license from the Greenlandic government and what has to be done for that?

**A** Before you can apply for a mining license in Greenland you need to finalize your definitive feasibility study. A very large portion of that study will be focused on the environmental and the social impact assessments. We feel internally as a company that this project will eventually live or die on those two issues. Can it be done environmentally responsibly and can the social impact be managed in such a way as to minimize the impact to the locals. If the answer to those two issues is yes, then this project will move forward. Greenland has a huge unemployment problem. It has a slowly reducing aid subsidy from



Denmark. This project is the second largest capital investment in Greenland. Second only to the Alcoa smelter which would cost 6.6 billion USD. Our CAPEX is currently estimated with 2.2 billion USD. Over the next 12 to 18 months it will be one of the company's focuses to bring that back down into a more realistic price number. We internally believe that somewhere between 1.4 and 1.6 billion USD will be the final cost to build this mine.

**Q** The Kvanefjeld Project lies relatively near to a deepwater fjord. How important is such a fact and what can you tell us about the infrastructure in general?

**A** The fact that it lies so close to open tidal water is an advantage that is yet to be shown in the overall economics. It means very simply that we don't have the costs that are required to build a large railway operation to transport material. The local infrastructure is relatively limited. We would have to build a power sta-

tion, a port facility and construct roads. There is a population in the town of Narsaq seven kilometers away. They have some infrastructure there, but we will have to start from scratch.

**Q** What has to be done to separate Uranium from REOs and which of the two will benefit Greenland Minerals more?

**A** The Danish studies already identified an effective method for extracting uranium from the rare earth minerals. We have taken those studies and improved them given advances in technology. We will be able to separate the rare earth from the uranium at the end of the process. It cannot be done at the mining stage, because they are in the same mineral. We will dig it up, concentrate that mineral, take the uranium out and send the rare earths into different storage.

There are 40 pounds of rare earths in every electric car. The biggest constraint of the production of electric cars is the sup-

ply of rare earths. The next 5 years really represent an opportunity for Kvanefjeld to become truly a supplier of world standing. The reason why China as the largest supplier of rare earths is limiting the supply to the rest of the world is because its own domestic production is expected to only supply itself maybe within 5-10 years. They want to ensure that they have enough supply for themselves. That is why they are limiting supply for the rest of the world.

The one key strategic advantage of this deposit is that the uranium pays for everything and that the rare earths are pure profit. On a relative basis there is four times as much cash-flow generated from the rare earths than there is from the uranium. So this project has the opportunity to be a very long lived mine that produces enormous revenues that is not subject to the day-to-day volatility than any one particular commodity. Long-life poly-metallic mines are the mines that everybody wants.



**?** What are your plans for the next 12 months?

**A** The next 12 months will represent a real value-add for the company. In the short to medium term we would like to increase our ownership of the deposit. At the moment we own only 61% of Greenland Minerals. However we have got fixed options to move to 100%. We would like to have political certainty on the license. This is something we will work on with our colleagues in Greenland. We anticipate that we would get this support when the politicians will debate about this project in November 2010. The third point is to further optimize the economics that surround the pre-feasibility-study. If we can get this project up to a point where it is producing approximately one billion USD annually of operating surplus it will have a huge impact into the value of the company. We believe internally that we have identified ways by which that can be done.

Kvanefjeld owns a relatively high percentage of Heavy Rare Earths.

**?** What is the important thing on these HREOs?

**A** It comes down to simple supply and demand. HREOs are 10 times more valuable than light rare earths. The simple reason for this is that there is approximately 10 times less of them. Our deposit is very fortunate in that it has a very high ratio of HREOs. One of the things that the company will focus on in 2010 is the final collection and the optimization of that HREOs concentration process.

**?** Is Greenland Minerals affected by plans for national parks or UNESCO World Heritage Sites?

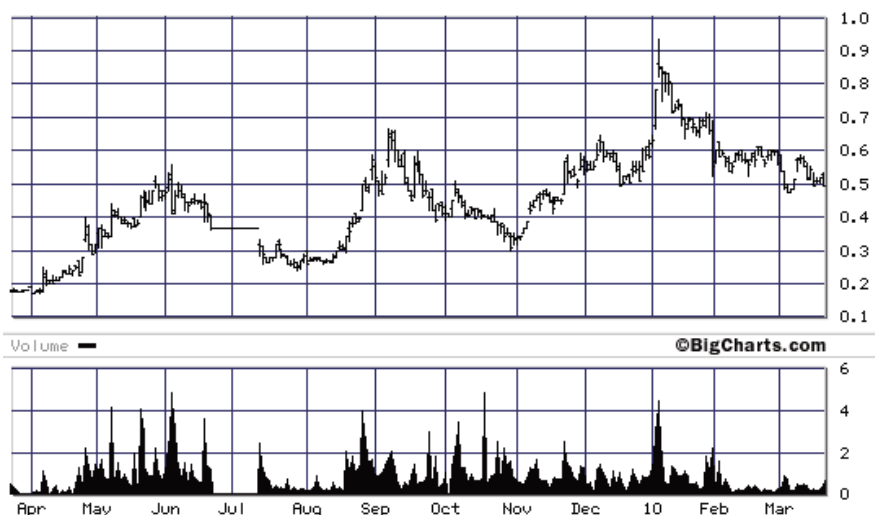
**A** It is not true that the entire South Greenland will become a UNESCO national reserve. That was actually discussed in Greenland years ago and the Greenlandic rejected that proposal. There are no national parks or world heritage sites planned for Greenland.

**?** Why should potential investors invest in Greenland Minerals

right now?

**A** If you compare our company to other players in the industry you will find out that we are valued at approximately 0.50 USD per pound of uranium in the ground. That doesn't take in any additional value for the rare earths and the zinc. Peer comparisons are valued between 4 and 6 USD per pound of uranium. I think the time between now and the end of this year will represent the best value on a return basis for Greenland Minerals. I think by the end of this year I would like to think that the shares could be around 2.50 USD. At the end of this year the company is listing on the London Stock Exchange main board and I think northern hemisphere investors understand the significance of this deposit better than Australians. Australian investors seem to struggle with Greenland and uranium and rare earths in general. That is why the company has made the decision to move to a northern hemisphere market to better value its share price. The company will also move its base of operations into Europe in the next 6 months.

### Performance - 12 Monate (TSX) - Kurs in CAD



Greenland Minerals and Energy Ltd.		
Quote	0.495 AUD	ASX
Quote	0.365 EUR	Frankfurt
MaCap	114.30 Mio. AUD	
WKN	A0J M17	Frankfurt
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Symbol	GGG	ASX
Symbol	G7P	Frankfurt
Website	www.ggg.gl	