



Progress Report #10

March 31st, 2015

I am pleased to bring you up to date on CREEN activities and related events, since our last Progress Report #9 of December 22nd, 2014

Federal Budget Submission & Support

CREEN has been reinforcing its main messages with key government decision makers in Ottawa since Steering Committee members Peter Cashin, Steve Wilson and I met with them in early December 2014. These messages are:

- Canada's emerging REE sector is a job creating, economic and industrial development endeavor in support of next generation science and technology, with very strong connections to Canada's international partners.
- CREEN's priorities will be industry-lead, with industry-academia-partner collaborative solutions being the primary objective.
- Without federal promotional and R&D support, the opportunity will be captured by international competitors in the very near future and CREEN will have difficulty continuing to move forward.
- While the REE story is seeded by getting raw material supply into production (i.e. mining, mineral processing, separation), it clearly has the potential for significant industrial activity throughout the supply/value chain for years to come.

CREEN submitted a letter, signed by twenty executives and senior academic members of the network to the Minister of Natural Resources, Hon. Greg Rickford, on January 14th, 2015, outlining the above and asking for his support within the Cabinet for CREEN's budget request. As for our Budget Ask, the Federal Government has delayed its presentation until late April/early May. [NOTE: I would caution recipients of this Progress Report not read anything into the possibilities of a positive or negative response to our Ask]

Proposed Interdepartmental Meeting on 'Canada and Critical Materials'

As mentioned previously, the potential benefits of a broad, coordinated federal approach to championing Canada's emerging rare earth opportunities is fundamentally important, as the supply chains start with mining and mineral processing (NRCAN), with the downstream processing into metal, alloys and numerous other forms that are integral to component and end use applications (Industry, Science & Technology), and trade/partnering/strategic opportunities (International Trade, Foreign Affairs and Defence). CREEN and NRCAN are exploring the possibility of an inter-departmental meeting with key sector stakeholders to:

- Enhance understanding of the challenges and opportunities for Canada regarding critical material value chains like rare earth elements.
- Investigate how industry, government and other partners could collaborate to advance this sector.
- Assess the utility of a national blueprint or roadmap to position Canada as a major supplier of critical metals that are enriched through value-added downstream processing activities within Canada.

The goal of this meeting would be to bring together key senior Government policy leaders and decision makers coupled with representatives from industry and academia.

CBS' 60 Minutes on REEs

If you aren't aware or haven't yet viewed CBS' *60 Minutes* program segment entitled "Modern Life's Devises Under China's Grip?", which was aired March 22, 2015, the link to the video and the transcript is <http://www.cbsnews.com/news/rare-earth-elements-china-monopoly-60-minutes-lesley-stahl/>

60 Minutes' segment host Leslie Stahl summarized the history of rare earths and the growing Chinese monopoly since the 1980's. She also described more recent Chinese activities and their actions to restrict supply in 2010 that brought about the World Trade Organization case. The 20 minute segment also discussed the importance of rare earths in current technologies (including defense applications) and in growing applications (such as hybrid vehicles) and future technologies. One of the key points raised by the program is that the US defense systems are vulnerable to the Chinese monopoly on rare earths. The segment closed with a comment on the current financial challenges of the only US producing operations.

Respecting the 20 minute segment format, if CBS had had more time to devote to this story, they might have gone deeper into the distinction and fact that the heavy rare earth elements such as Dy, Tb, Eu, Lu and Y are the ones that enable permanent magnets and are key to many of the technologies described in the broadcast, and that China has a 99% + monopoly on these elements. In this regard, the US need not be stranded as there are advanced, environmentally sound heavy rare earth projects in development in the U.S. and by its allies, including Canada, some with separation technology solutions that could help restart the full supply chain.

We encourage you to review the *60 Minutes* episode as we are pleased that CBS is drawing attention to the fact that the Chinese rare earth monopoly is not being addressed.

CIM-CREEN Alliance

CREEN has recently been advised by Jean Vavrek, Executive Director of the CIM that its Board "fully supports the CIM-CREEN partnership and the proposed working model. Final administrative procedures (incl. banking, financial reporting, and Secretariat functions) are in the process of being detailed, which essentially provides CREEN with the autonomy and ability to work as we have described previously. CREEN will begin collecting pledged membership fees for 2015.

CREEN Outreach

NATO - Scarcity of Rare Earth Materials for Electrical Power Systems

Following the previously reported Rare Earth's Specialist's meeting in Brussels in October 2014, NATO is following up. In mid-February, a small group met at NATO Headquarters in Brussels reviewed the report of the October meeting (which are now finalized), and to produce a brief for the NATO STO (Science and Technology Organization) on the topic, (the report is not as yet available). NATO is also proceeding with plans to meet at the next NATO AVT (Applied Vehicle Technology) meeting at the Conference and Learning Center at Rzeszów University of Technology in Poland, set for April 20th-24th. It is understood that this meeting will be less formal but will serve to further discuss our path forward and to update progress since the October meeting.

The NATO AVT panel, which is comprised of the lead representative from each NATO nation, was briefed on the outcome of the October meetings. The guidance from the Panel principals was to:

- Keep this team together in order to further communicate, collaborate, and continue to work toward possible solutions;

- Finalize the meeting proceedings and develop a lecture that can be further disseminated to specific organizations and nations within NATO; and
- Work with NATO Chief Scientist office to create a policy and guidance document that the chief scientist can use to communicate the issue and recommended courses of action within the NATO organization.

German Delegation – PDAC

Several members of the CREEN Steering Committee, accompanied by James Lauer, Director of NRCan's Industry and Commodity Analysis Division, met with a German delegation, at the invitation and coordination of Canada's Trade Commissioner (Science and Technology) stationed at Canada's embassy in Berlin. The meeting provided an opportunity for CREEN to expand upon its development and achievements a year after its launch in 2013. The launch of CREEN apparently met with considerable interest in Germany, in particular because of its objectives and complementary purposes such as the industry-driven network supported by universities, the acceleration of developments and delivery of solutions, the facilitation of partnerships with national and international organizations, and the plan to support training and education. The meeting was kindly hosted by GE at their Toronto offices.

COM15 & COM 16 REE Symposia

The COM15 REE Symposium Organizing Committee received a broad range of abstracts, covering both a spectrum number of mineral processing in addition to those more aligned with the COM15 primary emphasis on REE material science.

With the primary focus of the REE Symposium at COM16 (to be convened in conjunction with International Mineral Processing Congress 2016 in Sept 2016 in Quebec City), the Organizing Committee thought it best to integrate the received abstracts with COM15's Aerospace and Advanced Manufacturing symposia and COM16's planned REE Mineral processing symposium. This approach, supported by MetSoc's leadership, was implemented to ensure that each of the presented papers/presenters receive the optimal profile.

UK NERC

You may recall that a number of proponents putting forth proposals to the UK's NERC Rare Earth Research Program completion approached CREEN and several Canadian academics to participate in their proposals. We have been advised by one of the proponents that they have been shortlisted. This research promises to be very valuable to Canadian minerals companies working in the rare earth area both for understanding of deposit geology but also for environmental aspects of rare earths during mining operations. Canadian collaborators include McGill University and Queens University. One of the initiatives being considered is organizing a joint session, symposium or short course at annual joint meeting of the Geological Association of Canada and the Mineralogical Association of Canada in 2017, to be hosted by Queen's University.

As always, I hope you find these progress reports helpful. Please feel free to contact CREEN with any suggestions you may have.



Ian M London P.Eng, MBA

www.ree-etr.ca

1 647 242 1872