

JOIN THE FUTURE OF ENERGY FOR BC MINING

WE'RE EXPLORING A BRIGHT ENERGY FUTURE FOR THE MINERALS INDUSTRY. YOU CAN HELP US MAKE THAT FUTURE A REALITY.

The University of British Columbia and BC Hydro Power Smart are collaborating in a new research initiative that will explore energy conservation in the mining and minerals industry.

As the Founding Sponsor, our primary goal in this research program is to identify opportunities to introduce technologies which have the potential to improve electricity efficiency in the minerals industry by at least 20 per cent.

Commencing in June 2009, industrial sponsors will be engaged, and the researchers will lay the groundwork for the four-year project through energy audits at sponsor operations to identify and quantify major energy sinks in the industry. Following that, the team will evaluate potential areas for improvement in energy efficiency at these operations, in order to reduce energy needs and lower operating costs. We'll then look closely at the introduction of new, energy efficient approaches for the comminution, and extraction of ores to finished metal.

As the founding sponsor, we're looking to make this research project a true collaboration between ourselves, the researchers, and the industrial sponsors. So, if your organization has a stake in mining and minerals, and you are concerned about energy efficiency in your organization, we invite you to sit down and discuss the program and sponsorship options with us.

In addition to enjoying the goodwill that comes with helping to secure BC's energy future, you will have the opportunity to benefit directly from sponsoring the research. You'll be able to oversee the project and its deliverables through each stage, and have advance access to research outcomes, methods, and tools related to energy-efficient technology for the industry.

A CLOSER LOOK AT YOUR ENERGY

Power Smart's foremost mission is to promote energy conservation to ensure that British Columbians enjoy sustainable, reliable energy for generations to come. By supporting research such as this, we aim to help BC industry scale back their energy requirements by limiting waste and improving efficiency.

For our industry partners, this simply translates into reduced costs, improved productivity, and added protection against rising energy costs—all of which adds up to a significant competitive advantage.

This research initiative is specifically designed to benefit those with a stake in the base metals industry, from mining to refining, especially open pit operations with a focus on copper, gold and molybdenum.

We expect that this project will help to address efficiency challenges in a number of areas, by means of:

- Establishing measures of energy-use and efficiency in mining and processing.
- Identifying opportunities and methods of improving this efficiency, including mining and processing optimization strategies.
- Site-specific studies to assess the application of ore pre-concentration, high-pressure grinding rolls and/or stirred mills in reducing energy intensity of mining and processing ore.
- Methods for conserving energy through the application of more efficient extraction technologies.
- Methods for the reduction of energy use in base metal electrowinning operations.

Research will commence in June 2009, with completion targeted for June 2013.

THE POWER OF SPONSORSHIP

Every organization involved anywhere in the mining industry is welcome to participate as a research sponsor. This includes operations, suppliers, consultants, process specialists, associations, governments, and other utilities.

The estimated budget will be \$1.5 million to be spent over four years. We're seeking \$750,000 in total from industry sponsors and we aim to receive matching funding from the Natural Sciences and Engineering Research Council–Collaborative Research & Development (NSERC–CRD). Multi-national sponsors will be considered; however, as NSERC will only match funding from Canadian sponsors, preference will be given to Canadian entities.

Three levels of sponsorship are available. While each level has its benefits, all levels offer sponsors a unique networking opportunity and an invaluable jump on industry trends.

- **Gold Sponsor**

Gold-level sponsorship requires a contribution of \$100,000 or more, spread over four years. Gold Sponsors are entitled to a seat on the steering committee, and will have access to all project reports, research methods, tools, and deliverables. The University of British Columbia is also offering Gold Sponsors a site-specific energy assessment and process optimization study to a value of \$40,000, as well as site-specific ore testing courtesy of UBC to a value of \$20,000.

- **Silver Sponsor**

Silver-level sponsorship requires a contribution of \$60,000 spread over four years. Silver Sponsors will have a seat on the steering committee and access to all project reports. Silver Sponsorship also includes site-specific ore testing courtesy of UBC to a value of \$20,000.

- **Bronze Sponsor**

Bronze-level sponsorship requires a contribution of \$40,000 spread over four years. Bronze Sponsors will have access to project reports and information, and will be entitled to attend joint sponsor progress meetings.

We expect to finalize and announce the sponsorships by January 2009. Spaces are limited, so those organizations interested in participating in this exciting research initiative should kindly contact us as soon as possible to discuss sponsorship.

A GOLDEN OPPORTUNITY FOR BC HYDRO CUSTOMERS

We want to encourage our customers to take advantage of Gold-level sponsorship. That's why we are offering the following additional incentives to our customers who own mining operations within British Columbia and are eligible to participate in the Power Smart Partners program:

- If you provide us with a copy of the UBC reports from your energy assessment process optimization study and your site-specific ore testing, we'll reimburse Gold-level sponsors up to \$30,000.
- We will also allow you to leverage up to 20 per cent of the time or direct 20 per cent of the scope of work of a Power Smart Partners-funded Energy Manager to go towards any project-related collaborative research efforts from your plant (a value of \$20,000).

Please note all BC Hydro customers are still eligible for any Power Smart industrial program offer outside of this research initiative.

PROJECT BENEFITS	SPONSORSHIP LEVEL		
	GOLD	SILVER	BRONZE
Seat at project steering committee to oversee project and deliverables	✓	✓	✓
Access to all project reports, and invitation to all sponsor review meetings	✓	✓	✓
Industry collaboration and networking opportunities	✓	✓	✓
Preview of emerging methods and tools for optimizing energy usage	✓	✓	✓
Site-specific ore testing	✓	✓	
Site-specific energy assessment and process optimization study	✓		



CONTACTS

Interested prospective Industrial Sponsors are asked to contact the project leads directly:

Markus Zeller, P.Eng.
 Industrial Technology Innovation,
 Conservation Innovation, BC Hydro
 markus.zeller@bchydro.com
 604 453 6476 (direct)
 604 802 4685 (mobile)

Dr. Bern Klein, Associate Professor
 Department Head, Norman B. Keevil Institute
 of Mining Engineering, UBC
 bklein@mining.ubc.ca
 604 822 3986