



EXPANDE – Mining Open Innovation Program by Fundación Chile

Challenge BHP-09-2019: Global Steel Inventory

June, 2019

Challenge: “Global Steel Inventory”.

This project is managed by the Supply Innovation area of BHP Billiton, associated with the National High-Grade Mining Program, and supported by the Open Mining Innovation Program (EXPANDE) developed by Fundación Chile (FCh).

The common purpose is to promote innovation and make possible a better future for global mining, strengthening the mining ecosystem in Chile, together with constituting a collaborative model that enables the best solutions for the high complexity challenges of today's mining and tomorrow.

General Description

- **General Framework**

Minera Escondida has three concentrator plants: Los Colorados, Laguna Seca 1y 2. Among the unitary processes of the concentrator plants each of them counts with primary grinding (SAG Mill) and secondary grinding (Ball Mill). Each of these processes (SAG Mill and balls) uses grinding media, carbon steel balls, to reduce the size the mineral fed. This input has a high daily replenishment rate due to the wear and tear of the grinding media, resulting from the impact and friction of the process, representing a significant percentage of operational costs.

- **Aim and scope**

We are looking for technological solutions capable of quantifying the inventory of the grinding means that enter and leave each SAG mill and balls, in addition to quantifying the internal load that each mill has in line and real time.

General Description

- **Current situation**

There is currently an imprecise counting method of grinding media in the SAG. It also has an indirect method for the quantification of balls in the secondary milling. Both methods with little precision impact on the addition of grinding means, with consequences in the process (improper use of part of the power of the mill) and the costs associated with the input

- **Proven technologies**

It has a ball counter with ultrasound technology in the SAG mills.

Prequalification documents

The following information is requested for this prequalification stage :

- National and international Companies/Suppliers
 - Relevant competences and experience of the supplier's team member for the Challenge.
 - Previous experience in similar solutions.
 - Description of the technological solution and degree of technological maturity (Solution under development, tested, implemented and/or in operation)
 - Success stories
 - Ability to provide operational and maintenance services in the field.
- International Companies/Suppliers
 - Availability to operate in Chile or through technical/commercial representatives .

The format of the information delivered is free (pptx, pdf, image) and can be a brochure or presentation of the company's capabilities and technological solutions that apply to the proposed challenge.

Challenge's stages



We receive support documentation until June 16, 2019.

1. Scouting

- If you are interested, attach supporting documentation.(Experience and Administrative Information)

2. Prequalification and Save the Date

- Expande will send an email to communicate the prequalification state .
- If you are prequalified, Expande will send documentation (RFP, Bidding guideline, General guideline)
- If you want to participate in the challenge launch, send the acceptance letter (Document «BHP Acceptance Letter and Contact Information)