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EXPANDE
Open Innovation Program in Mining

Challenge BHP 19-2019: «Optimization of the process of shifting tailings conveyors»

25.06.2019

FCH
FUNDACIÓN CHILE

Challenge «Optimization of the process of shifting tailings conveyors»

This project is managed by the Supply Innovation area of BHP Billiton, associated with the Alta Ley Program, and supported by the Mining Open Innovation Program (EXPANDE) by Fundacion 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 and tomorrow's mining.

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Challenge Description

- **Context**

✓ Minera Escondida repositions the conveyors that carry tailings from the leaching process, for their final disposition in areas destined for this purpose (dumps). This reposition (shifting) is due to the natural growth in volume of the dump.

✓ The conveyor system has an approximate length of 800 m, and its infrastructure is occasionally damaged in the shifting process, which consists in pulling and pushing the structure with bulldozer-like machines, loaders and similar equipment. Also, the reposition process takes up to 18-40 hours, which wants to be improved.

✓ 4-5 annual shifting processes take place.

✓ The challenge consists in proposing a system that optimizes the shifting process in terms of decreasing the time of the activity and avoids structural damage.

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Challenge Description

- **Objective and scope**

✓ Propose a system that optimizes the shifting process time to 12 hours or less, safeguarding the integrity of the equipment.

✓ The proposed solution must fulfill operational requirements, enable proper and safe maintenance and operation, and ensure the correct interaction with the rest of the equipment and personnel.

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Challenge Description

- **Current situation**

Tailing unloading from the leaching process can become an upstream bottleneck: crushing, heap formation and leaching cycle. Thus, reducing unloading time for this process is relevant to ensure operational continuity.

In this context, the shifting process is a key activity at the last stage of the productive process. Currently, this process takes place 4-5 times a year and lasts for 18-40 hours. The task is carried out by pushing and pulling the structure with bulldozer-like machines, loaders and similar equipment. This can cause damage to the asset and increase maintenance costs.

- **Attempted technologies**

Movement with help of bulldozer-like machines, loaders and similar equipment.

- **Information that will become available**

For the project, schematics, specifications and photos of the conveyor will be available.

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Experience and Administrative Information

The following information is requested for the present prequalification stage:

- General:
  - Experience and current services, similar services in mining, in operation or under development.
  - Capabilities for development and integration.
  - Capabilities to provide operational and maintenance services.
  - Capabilities to operate in Chile, by itself or through technical / commercial representatives. (International Vendors)

- Provide supporting documentation.
  - Free format (pptx, pdf, image) presentation, brochure, others.

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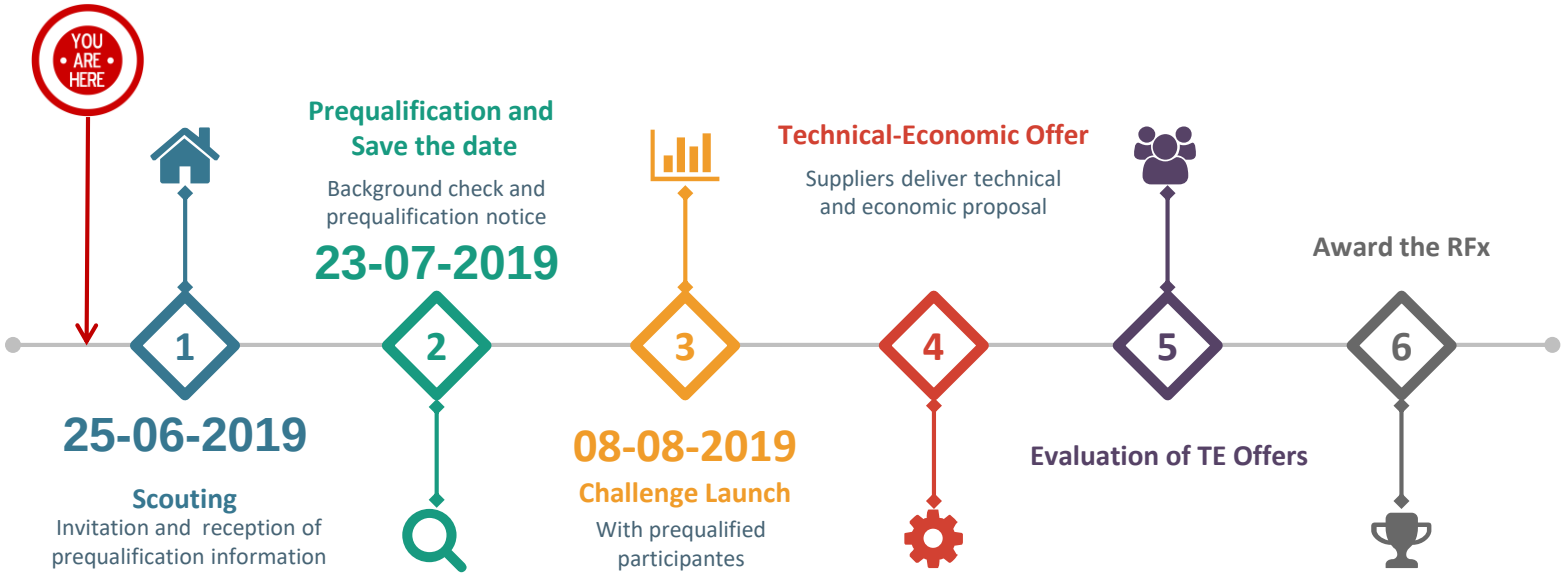
Challenge's stages



1. Scouting
   - If you are interested, attach supporting documentation.(Experience and Administrative Information) to: **innovacion.abierta@fch.cl**

2. Prequalitication and Save the Date
   - Expande will send an email to comunicate the prequalification state .
   - If you are prequalificated, Expande will send documentation. (RFP, Bidding guideline, General guideline)
   - Also, to participate in the challenge launch, you should send the acceptance letter.

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