SUSOP®
- Engineering-In Corporate Sustainability at the Ground Level
The minerals industry from the highest level has made a strong public commitment to sustainability, either through their own corporate policies or those of industry bodies like the International Council of Mining and Metals and the Minerals Council of Australia. The challenge is to incorporate the core ideals of sustainability development articulated in these policies and principles at the “on the ground” level of design and operation of mining and minerals projects. SUSOP® answers this challenge for the practising professional.

JKTech’s wholly owned subsidiary SUSOP Pty Ltd is the champion of SUSOP® - a new sustainability opportunities and risks framework for industrial projects.

SUSOP® comprises a rigorous and systematic approach, entailing multi-disciplinary workshops and detailed analysis, to “engineer in” corporate sustainability principles and policies into the design and operation of mining and minerals projects and operations.

SUSOP® has been applied to projects at the concept, pre-feasibility and feasibility phases of project development and across a wide range of commodities including base metals, chemicals, light metals, iron ore, and precious metals.

In addition, representatives from 21 companies have been trained in the SUSOP® methodology for use in their business.

In November 2012, SUSOP® won the Institution of Chemical Engineers (IChemE) International Sustainable Technology Award. The award recognises a project or process that best demonstrates innovation in waste reduction, recycling, reuse or the lengthening of product lifecycles.

CASE-STUDIES

Orica - Peru
Through applying the SUSOP® framework in a structured workshop format, the multi-disciplinary project team were able to identify the positive and negative impacts of the project and then develop opportunities to help Orica to deliver better social, environmental and economic outcomes. Not only did the project
represent an opportunity for Orica to positively contribute to the sustainable development of the Peruvian society, it also allows the company to demonstrate its commitment to its own stated sustainability principles.

**Metallica Minerals’ SCONI**
The SUSOP® framework was applied to Metallica Minerals’ SCONI project to ensure the project would make a proper contribution to sustainability. Metallica adopted the SUSOP® framework in order to help identify the opportunities and risks that could directly improve or affect the SCONI project. The SCONI nickel-cobalt and scandium project (located in north Queensland) is Metallica Minerals’ flagship project and has the potential to become the world’s largest source of the metal scandium – which is used in solid oxide fuel cells and to make aluminium alloys lighter and stronger. A number of opportunities and risks were identified across the sustainability spectrum, considering the natural, social, human, manufactured and financial aspects. Those risks and opportunities were recorded in a Sustainability Register™ (similar to a conventional risk register) and allowed Metallica Minerals to properly consider and progress them through their project management system.

By applying the SUSOP® process, Metallica Minerals were able to include the following in their mine development project plan:

- Measures to reduce reliance on water – a key risk to the project and a concern for the local community
- Measures to reduce the volume of waste material produced and maximise by-product recovery
- Improved longer-term outcomes from the mine closure plan, including improved final landform outcomes
- Local opportunities for training and skilled employment – providing an economic stimulus for the region and educational opportunities for youth
- Support for local enterprise development – to improve community outcomes and address particular issues for the project, such as obtaining a skilled workforce for the project in both the development and operational phases
- Support for enterprise development – will help the community to develop more and varied skills, leading to greater economic and social resilience to the wellbeing of individuals and the region
- Establish strong sustainable development credentials – which assists in obtaining timely project approvals and a social licence-to-operate

"The practices that were employed on this project by Metallica Minerals could be adopted across the minerals industry and Metallica is proud to showcase this study to highlight the benefits of such an approach. We already had our social responsibility framework in place, what was missing was a practical method of putting it into practice, without delaying the project” – Nick Currey, EIS Manager
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*Technical Bulletin* is a monthly e-newsletter that aims to provide readers with relevant, valuable information on the latest technical solutions available from JKTech.