

PRELIMINARY PROGRAM

---Tuesday October 5, 2010---

08:30

Room: Seymour (Perspct-34th Floor)

Stream: SUSTAINABILITY FOR PROFIT

Session: Sustainability for Profit (TUESAM1)

Paper Start Time: 08:30

Paper No.: 5695

Paper Title: **KEYNOTE: GoldCorp Lecturer: Title Not Available**

Dina Aloji; GoldGorp;

Abstract is currently not available.

Paper Start Time: 08:55

Paper No.: 5028

Paper Title: **Pull of the Metal User: Social and Environmental Responsibilities in Metals Supply to the Electronic Industry**

Steven Young; University of Waterloo; Alberto Fonseca, University of Waterloo; Gorety Dias, University of Guelph;

Electronics brand-name companies want to understand how they can positively influence the socio-environmental activities at the extraction of the metals used in their products. Such knowledge depends on the clarification of intricate commercial and ethical issues in the value chains of metals. This paper presents the result of a one-year project that sought to clarify this challenge. Extensive literature reviews and interviews with key informants from the metals and electronics sectors were undertaken to understand how aluminum, cobalt, copper, gold, palladium and tin are mined, recycled, purchased, and used in electronics. Recent literature on boundaries of corporate responsibility was also reviewed to better understand the potential roles of the many players driving metals extraction. It was found that, despite several barriers, electronic companies can positively influence extractions in a number of ways. The paper concludes by presenting three practical recommendations for electronic companies and industry associations.

Paper Start Time: 09:20

Paper No.: 5020

Paper Title: **Economics of Slag Heat Recovery from Ferronickel Slags**

Lucy Rodd; Hatch; Terry Koehler, Hatch; Chris Walker, Hatch; Nils Voermann, Hatch;

The energy content of slag represents approximately 80% of the total energy inputs to a laterite nickel electric smelting furnace. Conventional slag handling methods produce only low grade heat and the entire thermal content of the slag is wasted. A heat recovery system proven on BOF slag in the mid 1980's can be adapted to a laterite nickel rotary kiln electric furnace (RKEF) plant. Slag is granulated using a high velocity air jet inside a waste heat boiler to produce slag granules. Granules are cooled during flight via radiation to water-cooled boiler walls and by convection to the granulation air. This system has the potential to recover 80% of the total slag energy in the form of hot air and steam. Integration of the recovered slag energy into the RKEF smelter can be achieved by a number of methods, including the use of preheated air at the ore dryers, kiln or existing power plant. Energy from the slag boiler may be used to reheat boiler feed water from the power plant or to produce superheated steam and generate electricity. The heat recovery system can provide up to 25 - 30% of the total electrical requirement of each RKEF line and a reduction in CO2 emissions of 234,000 tonnes per year. The total cost of slag heat recovery, including CAPEX and OPEX, is \$2.5/GJ, which is competitive with using coal when CO2 credits are \$18 per tonne. With Clean Development Mechanism (CDM) carbon credits currently selling at 13 Euros (\$20 USD) per tonne CO2, there is considerable opportunity for slag producers in regions including South America, Korea, Indonesia and Africa. Increasing fuel costs and more wide-spread legislation for GHG emissions will likely create conditions in which slag heat recovery could generate a favourable return on investment.

Paper Start Time: 09:45

Paper No.: 5468

Paper Title: **Evaluation of Zinc Removal during BOF Sludge Formation**

Luciana Cerqueira Solimani, Usiminas; Mônica Marques Lima, Usiminas; Marco Antonio Quintela, Usiminas; Wilton Pacheco Araújo, Usiminas;

BOF fine sludge from Usiminas's plant in Ipatinga is disposed in landfill due to high zinc contents which make the recycling quite difficult. In order to understand the zinc behavior at BOF sludge during blowing time, in site experiences were made. Sludge samples were taken at off-gas system during heats. They were characterized by total solids, X-ray diffraction, chemical analysis, scanning electron microscope and energy dispersive X-ray analysis. The experimental results showed that zinc is removed from converter during the heat. Although zinc content was high at the beginning of blowing time it represented only 10% of zinc charge and 10% of total solids

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charge. After ten minutes, zinc content decreased significantly.

10:30

Room: Seymour (Perspct-34th Floor)

Stream: SUSTAINABILITY FOR PROFIT

Session: Sustainability for Profit (TUESAM2)

Paper Start Time: 10:30

Paper No.: 5540

Paper Title: **Impact of Cokemaking Technology on a Steel Plant's Carbon Footprint**

Paul Towsey, Hatch Ltd; Paul Steven Towsey, Hatch Ltd.; Chris Sharp, Suncoke Energy Inc.; Sining Liu, Hatch Ltd; Yakov Gordon, Hatch Ltd.;

By-product and heat-recovery cokemaking technologies each offer the steelmaker different opportunities to develop the steelworks' energy balance with the aim to achieve a lower environmental footprint. This paper discusses the results of a Greenhouse Gas (GHG) footprint study completed by Hatch, comparing the GHG emissions of a conventional by-product coke plant with Suncoke's heat-recovery cokemaking technology, within an integrated steel mill. Natural gas and fuel oil were considered as additional fuel sources where coke oven gas was not available. The study followed the Greenhouse Gas Protocol guidelines and reported direct and indirect GHG emissions from the steel plant.

Paper Start Time: 10:55

Paper No.: 5428

Paper Title: **The Business Value of Life Cycle Assessment in the Mining, Minerals and Metals Industry**

Sophia Wong; Five Winds International; Kevin Brady, Five Winds International; Jeff Yorzyk, Five Winds International; Josh Hendry, Five Winds International;

Drawing from the experience of nickel, copper, aluminum and mineral borates, this paper illustrates the business value that the mining, minerals and metals industry can gain from applying life cycle assessment (LCA) to products and operations. Through the use of case studies, the paper explores how companies and industry associations have used LCA to their advantage: from evaluating capital investments, meeting customer information needs, supporting new product applications, and developing credible marketing information on the environmental performance of their products. It also explores the dynamics of LCA adoption and integration within companies, and provides recommendations to further strengthen institutionalization of LCA.

Paper Start Time: 11:20

Paper No.: 5436

Paper Title: **Energy Management Assessments: Cost Effective Carbon Management**

Jim Farrell; Hatch Ltd.; Emily Thorn Corthay, Hatch Ltd.; Luke Westfall, Hatch Ltd.; Julia Tsai, Hatch Ltd.; Stephen Gale, Hatch Ltd.; Mohammed Ali, Hatch Ltd.; Lowy Gunnewiek, Hatch Ltd.;

Mining and metallurgical industries need to minimize their Greenhouse gas (GHG) emissions; Hatch specializes in conducting metallurgical energy management assessments and optimizing productivity. Projects executed have demonstrated that there is a wealth of energy management, waste reduction, and process efficiency improvements that require no or low capital investment. Typical energy cost savings are on the order of 5% to 12%, with similar reductions in greenhouse gas emissions. Hatch generates Marginal Abatement Cost Curves to optimize the implementation pathway, maximizing carbon abatement and minimizing cost. The findings of a practical case study from Cameco are presented.

14:00

Room: Seymour (Perspct-34th Floor)

Stream: SUSTAINABILITY FOR PROFIT

Session: Sustainability for Profit (TUESPM1)

Paper Start Time: 14:00

Paper No.: 5190

Paper Title: **New Method for Determining Iron Making Sustainability in Environment**

Seyed Ebrahim Vahdat, Islamic Azad University-Ayatollah Amoli Branch;

In this paper, fuzzy logic approach is used to show the degree of iron making sustainability in Iran. We defined six sets of criteria which are Soil pollution, Air pollution, Forests, Ecosystem, Energy and water pollution. Then we defined a membership function for each set, after that membership degree is calculated between 0 and 1. Finally the degree of sustainable development in environment in Iran is determined by fuzzy logic rules. The result was iron making development in Iran absolutely isn't sustainable in environment in 2003 to

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2005. The main reason was air pollution. So it is a view to focus on this problem.

Paper Start Time: 14:25

Paper No.: 5327

Paper Title: **Energy Management Standards: "ISO for Energy Management - WII-FM (What's in it for Mining)"**

Emily Thorn Corthay ; Hatch Associates;

Why does it seem that many mining leaders are becoming jaded regarding energy conservation? The energy savings that are promised and expected are often not achieved, or if they are, are seldom sustained. At the same time, site staff often complain that they do not receive the support or attention from corporate management. How does a company address these issues and reap the benefits of a successful energy management program? In response to a growing need around the globe for a systematic and standardised approach to managing energy, the International Standards Organisation is engaged in rapid development of a standard for energy management which will likely become "ISO 50001". This standard is being based on the ANSI/MSE 2000/2008 (Management Systems for Energy) that has been developed and tested in the United States. The presentation will discuss the salient points of ANSI/MSE, its potential for driving sustainable energy reductions in the mining industry, and how mining companies may be able to differentiate themselves by adopting the standard.

Paper Start Time: 14:50

Paper No.: 5442

Paper Title: **Assessment of Equator Principles and Financial Institution Needs: A Strategic Framework for Projects**

Panteha Momini, Hatch; Dila Ersenkal, Hatch;

Equator Principles (EP) are a set of guidelines developed and adopted by a series of financial institutions for assessing and managing social risk and environmental issues in project financing. Established in 2003 and updated in 2006, Equator Principles are now adopted by some 68 financial institutions from 27 countries. As more and more financial institutions join this global initiative, it is important for project owners to have a logical framework embedded into the project lifecycle to reduce the risk of non-compliance with the EPs which could lead to costly delays. This paper provides and outline of this framework.

15:35

Room: Seymour (Perspct-34th Floor)

Stream: SUSTAINABILITY FOR PROFIT

Session: Sustainability for Profit (TUESPM2)

Paper Start Time: 15:35

Paper No.: 5482

Paper Title: **Planning and Financial Valuation Tool for Sustainability Investments**

Thibaut Millet, Deloitte & Touche LLP;

The Challenge: There is a growing expectation globally that large scale investments by oil, gas and mining industries will bring broad-based benefits to local communities through sustainability investments in areas such as health, education and biodiversity. Quantifying the value of these investments and planning accordingly has long posed a challenge for the extractive industries and community development practitioners, leading to less-than-optimal outcomes and missed opportunities. Furthermore, the inability to articulate the cost/benefit of sustainability actions has also impeded internal communication of the importance of sustainability and has often meant that sustainability remains outside of the core project planning process. The Solution: A multilateral partnership, including Rio Tinto Alcan, IFC CommDev and Deloitte, has successfully developed a Planning and Financial Valuation Tool for Sustainability Investments. By applying the methodology to defined projects, organizations can now answer two critical questions: 1. "what" should be the Sustainability investments related to this project, and 2. "how much" financial return they will bring. The approach is customized to the specific realities of a given project, thus positioning the company to not only sustain its social license to operate but ideally maximize its value to the local communities and the larger corporation.

Paper Start Time: 16:00

Paper No.: 5640

Paper Title: **Implementation of a Greenhouse Gas Reduction Roadmap for Mining and Metallurgy Companies**

Johannes Gediga; PE International GmbH; Julia Pflieger, PE International GmbH; Manfred Russ, PE International GmbH;

This paper shall show an economic feasible approach to implement Greenhouse Gas (GHG) reduction measures into the mining and metallurgy industry. The goal to improve energy consumption is directly linked to the reduction of GHG emissions and therefore directly in correlation with the economic viability. A baseline scenario of the considered reference system and of the respective reference year has to be defined, mapped and analysed. In a second step an analysis of the same operation using available and prospected Best Available Technology (BAT) processes is carried out to generate a basis for a benchmark system. The identified reduction potentials

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are reported and the GHG emission reductions are put into relation to the investment cost of the new process technologies / process adaption to be implemented. This economic feasibility calculation is necessary to realise a cost efficient GHG reduction roadmap implementation into the company's business operations. The GHG reduction roadmap is developed using ratios between GHG reduction and investment / operating cost to get an indication for a sequence for implementing carbon emission reductions measures.