

2012 MagMin CONFERENCE

 INDUSTRIAL
MINERALS
EVENTS

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Session V: New projects, growth and technology



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P.A. Schipper, I. Wilson *et al* have dealt with the 'macro' situation

We will deal with individual examples

Technology, from mine to market...

- On-line elemental analyzers 'on conveyor belts, falling stream, slurry pipeline, and open-pit side; all elements, real time, no sampling'
- Magnetic separation: superconducting high gradient magnetic separator, wet high intensity magnetic separators
- Hydrocyclones
- Comminution technology
- Computer modeling of mineral processing

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...Technology, from mine to market

- Optimised grinding of petroleum coke
- Waste heat recovery
- Danish proposal to measure all emissions continuously: against burning waste ['alternative fuels']
- CO2 prices at record low → + Carbon capture and storage [CCS]. Pol Knops but...dogged by volatile history Mar 28, '12
- MgO applications: still waiting for a major breakthrough. Ube: dbm MgO as an epoxy resin filler increases thermal conductivity
- Other: Epsom salt chemically

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New projects - press releases

- **Beacon Hill, Tasmania: Preliminary Scoping Study: NPV A\$42 mi, 292,000 dry mt/yr ROM, avg 100,000 CCM w/ avg grade 95% MgO. Inferred JORC resource estimate 25Mt @ 42.4% MgO. An average life-of-mine operating cost, incl. both mining & processing costs, ~ A\$250/t FOB**
- **Globex Timmins Talc - Magnesite Project, March 2: PEA Results: Mine life 60+ years First 20 - yr mining period Talc production 2,470,000 mt, Magnesia production 2,381,000 mt, Total sales (gross) \$2,578,000,000, After tax IRR 20%**
- **Kumas, Turkey: fused magnesia capacity X3 by end-'12 → 52,500 tpa**

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New projects - our own bespoke survey...

- **Magnesitas de Rubian, Spain: Secured new deposit, MgO 85%, 2 km away. Will double mine life fm 20 to 40 years**
- **Magnesium do Brasil : Drilled ~1500 m → reserve estimation 60mi mt. Commissioned 2ND shaft kiln→170 tpd CCM. Implemented coarse material production line, expanded milling. Acquired new mine equipment to reduce labor costs + increase safety and production. Plan to invest in better usage of the mine + warehouses/logistics for exports. Searching to ship in bulk fm local harbors to Europe and USA.**

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- **Martin Marietta Magnesia Specialties, USA:** Adding new dolomitic lime kiln at Woodville, Ohio → lime capacity up 36%. Increasing filtration capacity 15% to separate $Mg[OH]_2$ fm $CaCl_2$. Increasing packaging capacity by 30%. Installing new coating line for $Mg[OH]_2$ flame retardants to improve product quality and performance.
- **QMAG, Australia:** Commissioned 3rd MHF furnace → CCM capacity 345,000mt [120 DBM, 35 EFM, rest CCM]. Also acquired adjacent cement kiln for 100,000mt of Magnesia, but with no definitive plan to re-start it. Next major activity: integrating QMAG into the Sibelco group.
- **Styromag:** 10k mtpy new ccm Herreshoff

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- **SMZ, Czech Republic: Technological improvement [own know-how] on rotary kiln → increase production + decrease energy consumption. Product diversification not only for steel, but also for agriculture, chemistry or food & health industry**