society do the same thing. Testing assumptions against scientific knowledge, Mr Davis argues, is the only way progress can be made.

In a second keynote address to the conference, Dr Jane Plant of the British Geological Survey pointed out that, directly and indirectly, minerals (including oil and gas) contribute 16% of the UK's GDP, greater than the contribution from the agricultural sector and disturbing far less ground. In England, only 0.7% of the total land area has planning permissions for surface mineral workings. Nevertheless, concern about the environmental impact of mineral extraction continues to grow. Dr Plant highlighted some of the areas that are being examined in life-cycle analysis, from resource assessment and exploration through the extraction and processing stages to recycling and land remediation.

On recycling, she noted that the UK produces about 80 Mt/y of commercial, domestic and industrial waste, of which about 70% is disposed of in landfill sites. In addition, mining and quarrying generate about 130 Mt of waste and the agricultural sector about 250 Mt. New teclmologies are needed to increase the amount of material recycled and by-products recovered, and to reduce the environmental impact.

The UK government's solution is a proposed environmental tax on aggregates as recompense for surface damage, a proposal that has won strong support from the lobby group Friends of the Earth which believes that an aggregates tax, in conjunction with the landfill tax that has already been introduced, would encourage greater recycling of construction waste and hence reduce the amount of primary aggregates extracted. The quarrying industry has warned of substantial job losses if the proposed tax is introduced and doubts that the measure would necessarily increase recycling – it would simply drive up the costs of its products for the consumer.

Minerals '98 has provided a good launching pad for the UK minerals industry and the Professionals Conference has successfully addressed the key Foresight issues. But it was very much a case of 'preaching to the converted'. As a next step, efforts should be renewed to engage the environmental groups in dialogue - there may need to be accommodation on both sides. □

Cassiar's magnesium potential

The former asbestos mine in northern British Columbia operated by Cassiar Mining Corp. has major potential as a source of magnesium metal, according to the results of a preliminary assessment carried out by Kilborn/SNC Lavalin Engineers on behalf of the new owner Minroc Mines Inc. (formerly Mineral Resources Inc.).

Following a meeting last week with British Columbia's Deputy Premier and Minister of Energy and Mines, Dan Miller, Minroc's chairman and chief executive, Clifford Frame, said that the company intended to pursue a C$400-800 million magnesium project at the mine site, adding that the preliminary assessment indicated that the mine's reclamation pile has magnesium in sufficient quantities to allow production for 40 to 100 years. He said that the concentration of magnesium was comparable to that of Noranda's 52%-owned Magnola project in Quebec, where a pilot plant at Valleyfield has been using a proprietary process to recover magnesium metal from asbestos tailings. The decision for a commercial-scale plant there is expected shortly.

At Cassiar, the magnesium metal would be extracted from cleaned serpentine recovered from the fibre operations, and Mr Frame said that detailed tests on the Cassiar serpentine for the production of magnesium metal will proceed simultaneously with reclamation activities. SNC Lavalin (which has a 16% interest in Magnola) is working with Minroc on financing the expansion of the reclaim work.

Meanwhile, Minroc is retreating the asbestos tailings at Cassiar using a wet milling technique and, in the process, is rehabilitating the site. The chairman confirmed earlier reports that the company will make its first shipment of chrysotile fibre from Cassiar next month. The goal is to produce 4,000 t this year and to re-establish traditional market areas. Production is scheduled to rise steadily over the next two years to reach a maximum of 50,000 t/y and this expansion will require capital investment estimated at not more than C$22.9 million. A five-year marketing agreement for the chrysotile has been made with Kakiuchi Co. Ltd which had a marketing arrangement with the previous owners. □

Management under fire at Achinsk . . .

The Achinsk Alumina Combine in the Krasnoyarsk region of Siberia provides approximately 25% of Russia's total alumina production. In December 1996, it owed the equivalent of around US$290 million and was facing bankruptcy proceedings, and a local arbitration court placed it under the administration of Alfa-Eko, the trading arm of the Alfa banking group.

The 18-month period of administration expired on June 8 and a meeting of creditors was planned for June 19. According to Reuters, this meeting has now been postponed until July 15, to allow the two main creditor groups to settle their differences. Alfa-Eko leads one of the creditor groups and the Tanako financial-industrial group leads the other.

A spokesman for the former has said that Alfa-Eko wishes to continue with the administration and the group is apparently supported by the local authorities – the Achinsk City Council is applying to the regional arbitration court to extend Alfa's management for a further year, the maximum period the court can authorise, and application has also been made to Krasnoyarsk's new regional governor, Aleaxander Lebed, asking him to extend Alfa-Eko's management for a further eight years. However, Tanako is dissatisfied with Alfa-Eko's management. It claims that the rescue plan has not been fulfilled and that the combine is facing extreme difficulties with its raw materials base. Tanako is seeking a new manager and management plan that can be presented to Krasnoyarsk Aluminium, one of Achinsk's main customers (which also owns 17% of Tanako).

Krasnoyarsk Aluminium has begun refusing to purchase alumina from Achinsk claiming that it is above the market price. The annual alumina requirement for its 750,000 t/y capacity smelter is about 1.7 Mt and previously it derived around 300,000 t/y from the Achinsk refinery. Achinsk has normally relied on Krasnoyarsk to purchase about 50% of its annual output and is now having to redistribute its production amongst other Russian smelters at Bratsk, Sayansk and Novokuznetsk.

Alfa-Eko, which has recently filed a suit with a local arbitration court against Krasnoyarsk's refusal to take its alumina, concedes that the rescue plan for Achinsk has not been fulfilled in every detail but argues that, most importantly, the plant is operating, employees are receiving salaries and taxes are being paid.

. . . Russian smelters look to Ukraine

Meanwhile, Krasnoyarsk Aluminium is one of a number of Russian aluminium smelters that are considering the creation of a consortium to bid for a 31% stake in AT Mykolayivski Hlinozemny Zavod (MHZ), operator of the 1 Mt/y Mykolayiv alumina refinery in the Ukraine. The Ukrainian Government intends to retain a 26% stake in the refinery for three years, and company employees are entitled to 30.97% of the shares and management to a 5% stake.

Approximately 3.5% of the shares have already been sold for privatisation certificates and in April Ukraine's privatisation agency, the State Property Fund, revealed that it had devised a plan with MHZ whereby 17% and 13% of the plant's shares will be offered in two tenders, with a further 2% to be sold on local stock exchanges. MHZ alumina has traditionally been sold to Russian consumers and meets about 20% of Russia's total alumina needs. □