Carl Firman Editor, **Global Capital Magazine** with thanks to Aggreko and John Goss

Aggreko powers African mines and utilities

Africa's mining industry is being revolutionised by a new generation of mining equipment and automation systems that improve a mine's production levels and profits. These new mining methods are creating an increased need for reliable power to operate this new equipment and operating systems. For example, Rio Tinto's chief executive, Tom Albanese announced in January 2008 the group would pursue automated mining solutions as part of its 'mine of the future' programme.

The current surge of activity in Africa's mining industry is being created by many factors including the world's ever increasing appetite for minerals plus the high market prices that this demand is achieving. Many developing countries are driving this boom period, particularly China. Then there are the developed countries whose living standards continue to improve, which drives the need for raw materials to create the products needed by the consumers.

Increasingly, much of Africa's mining areas currently being worked or the new projects coming on stream are mainly to be found in the continent's more remote regions. These isolated operations create a whole new set of power supply problems as the mines are invariably far from any stable power transmission grids. These remote locations present many energy problems to the mining companies, as extremes of temperature or high altitudes will adversely affect the mine's power plant's performance.

However, there is a far greater problem facing mining companies today and that is the current shortage of permanent power plants for their new mines. A mining company can make their plans for the start-up date of their new mine, but the delivery times for the new on-site power plant are longer now than ever before so these start-up dates may not match. In the past power companies were quoting from eight months to a year for the delivery of the power plant, but now these lead times have become much longer.

This change is due to the world's booming economies demanding additional power to fuel their rapid growth and improved living standards. This critical demand for energy to supply the needs of industry and population growth has created an acute shortage of power plants. This means that delivery times now being quoted are as long as one or two years, or in some cases even more.

This need for reliable power at the mine on time to meet production schedules creates a whole set of new problems as this probable lack of power will cost a mining company dearly. In fact, every day of non-production, once a mine is ready for operation, represents large amounts of lost production and profits. On top of those losses there are the skilled staff and mining equipment standing idle in a remote region of Africa. Currently, there are many mines being opened or further developed and their need for power is far greater than the generating capacity available. Power problems come in many forms, for example when no power plants are available, or where there is weak and unstable local power via a grid network.

Below: Aggreko temporary power solutions come in standard 20' ISO containers (length: 6058mm, width: 2438mm, height: 2591mm, weight: 2200kg)

A solution for power shortfalls

This power shortfall is now being experienced by Africa's mining industry where new mining projects or upgrades of existing mines need to be fully operational as quickly as possible. A solution which many mining and exploration companies are now turning to is temporary power solutions, which can supply large amounts of power quickly for as long as it is needed.

As a result, specialist power rental company, Aggreko is experiencing an increase in the number of orders for its services. Aggreko listed on the London Stock Exchange in 1997 and is now worth approximately £1.3bn (US$2.56bn) as of 15 January 2008.

The company has seen their rentals business increase significantly in Asia, the Middle East and elsewhere, including a contract to supply the 2008 Olympics. During 2006, they opened their first depot for China in Hong Kong and in early 2007 they opened the first mainland depot in Shanghai. The team in China have already won a number of significant orders including a 'fast-track' 9MW power project for a copper mine in a remote location in China's south western Yunnan province. In 2005, Aggreko was awarded a contract by Ivanhoe Mines Ltd to supply 6MW of power for the Oyu Tolgoi copper project in Mongolia and in 2007 the company won a contract to provide 5MW of power to Chile's state-owned copper producer, Codelco, for the Gaby copper mine. The contracts were largely awarded on the short lead times Aggreko could provide for the supply and installation of the required equipment.

Delivering and commissioning the equipment

The transportation of the equipment plays a vital role, as delivering all the power generating equipment plus all of the associated ancillaries can be extremely difficult and problematic. Each generator is designed to be shipped in standard 20' ISO containers, which have a length of 6058mm, a width of 2438mm, a height of 2591mm and can weigh up to 2200kg. The units can be assembled by a field team in just a few days. When the plant is operational, engineers will maintain and operate the equipment at peak performance. Aggreko's generators are designed and assembled at their own manufacturing facility in the UK

Left: Aggreko provides 5MW of temporary power to Codelco's Gaby mine in northern Chile. The 17-month contract was signed in early 2007.

Experience is key

Aggreko's key clients outside the mining sector are power utilities and construction companies. In January 2008, the company was awarded a contract for the provision of a further 50MW of temporary power in Uganda. The contract with Uganda Electricity Transmission Co Ltd will run for three years, commencing in the June quarter of 2008. The 50MW was in addition to the 100MW of temporary power already installed in Uganda. The value of the contract, excluding fuel, is expected to be around US$45m over three years. Rupert Soames, chief executive of Aggreko, said: "It is a testament to the quality of service we have been providing over the past three years that our customer has chosen Aggreko to provide further additional power to support the rapidly-growing economy in Uganda." The company also has contracts with Kenyan, Senegalese and Tanzanian power utilities.

left: 9MW of temporary power for a copper mine in Yunann province, China. The order was delivered in three weeks.

Below left: Aggreko provides 6MW of temporary power to Ivanhoe Mines/ Rio Tinto Oyu Tolgoi project in Mongolia.

Below: Aggreko's parts yard at its facility in New Iberia