

Provision was made in the Kyoto Protocol for the registration of Clean Development Mechanism (CDM) projects, which allow participants in developing countries to generate Certified Emissions Reductions (CERs) by lowering their emission levels of greenhouse gases. CERs can then be sold to those entities that are under an obligation to reduce greenhouse gases but are unable to achieve the required reduction.

AEL has registered two CDM projects with the United Nations Framework Convention on Climate Change (UNFCCC). These are for the No. 9 and No. 11 nitric acid plants, and they were registered in November 2007 and February 2008 respectively. The projects involve the installation of secondary catalysts in the ammonia burners of the plants, below the primary gauze catalyst. This secondary catalyst decomposes the residual nitrous oxide without affecting the production of nitric acid.

The secondary catalyst in the No. 9 plant was installed in November 2007 but had to be removed in June 2008 when the method of installation caused the primary catalyst to fail on two occasions. AEL is currently exploring various alternatives to rectify this situation.

The project on the No. 11 nitric acid plant has been far more successful. The secondary catalyst was installed in September 2007 and has reduced nitrous oxide emissions consistently by 80 per cent. This plant has a production capacity about 2,5 times that of the No. 9 plant, meaning that the effect of the secondary catalyst on total emission levels is far greater than could be achieved on the smaller plant.

In 2008, these projects reduced the emissions of greenhouse gases from the nitric acid plants by the equivalent of 239 000 tons of CO₂. To put this in perspective, the reduction is significantly greater than the AEL Group's total CO₂ emissions of 153 000 tons in 2008.

Land remediation

The guiding principles underlying AEL's remediation activities are to protect human health and the environment; to use good science, proven concepts, and best available techniques not entailing excessive cost; and to work with regulatory authorities and share information with interested and affected parties.

A risk-based approach guides the remediation process and human health and environmental risk assessments are undertaken at appropriate stages in individual projects. These assessments influence subsequent activities.

Annual reviews of the Group's environmental liability have been conducted by independent consultants since 1995 and the level of detail increases each year. The reviews are a reasonable approach to quantifying the potential future liability that has resulted from past operations. It is assumed that good management and operating practices at current operating sites will reduce remediation requirements over time.

Liability review findings are used to plan detailed remediation projects and to motivate Group companies to initiate necessary remediation and environmental management activities. At end-2008, the environmental liability for the Group was estimated at R146 million for remediation.

Responsible Care*

Responsible Care* is the global chemical industry's voluntary initiative for continuous improvement of performance in safety, health and environmental practices. It is a public commitment to responsible management and stewardship of products and services throughout the lifecycle of products. It is also the vehicle used by the industry in its pursuit of improved performance in the areas of safety, health, the environment and product stewardship.

Responsible Care* was launched by the Canadian Chemical Producers' Association in 1984 and has now been adopted in 53 countries. The Chemical and Allied Industries' Association is the custodian of Responsible Care* in South Africa. In line with the guidelines of the International Council of Chemical Associations, the South African programme is based on eight fundamentals:

1. a formal commitment by each member company to a set of guiding principles;
2. a series of codes, guidance notes and checklists to help companies fulfill their commitment;
3. the development of indicators against which improvements in performance can be measured;