

chairman's message



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– in the way we produce energy and in the
health of our planet.

OPPORTUNITIES IN A RAPIDLY GROWING SOUTH AFRICA

Power generation in South Africa is still predominantly coal-based. With the need to reduce carbon dioxide emissions, this scenario will have to change. With sustained economic growth over the last decade, the country now faces key challenges. Firstly, the South African government is targeting economic growth of 6% by 2010, which means that new power stations have to be erected to ensure that supply keeps up with demand.

Secondly, the country will be compelled to diversify its energy sources and reduce its dependence on coal. In order to meet these challenges, nuclear energy has to be a substantial part of the future energy mix – as a major producer of uranium it would have been surprising if South Africa did not investigate this option.

“President Thabo Mbeki stated in his State of the Nation address (March 2007) that the government will expedite its work to ensure greater reliance on nuclear power generation, natural gas and the various forms of renewable sources of energy.”

It is envisaged that PBMR units will be a significant part of Eskom's new nuclear-built programme if the technology is proved to be commercially viable. The PBMR's modularity and size is suitable for the decentralised generation of energy, especially around the coastal areas of South Africa.

Should the pebble bed technology be successfully demonstrated, there can also be little doubt about its marketability as a future source of electricity on a global scale.

In the next 50 years, the global population will use more energy than the total consumed in all previous history. Humanity faces a future of radical change – in the way we produce energy and in the health of our planet. Climate experts are virtually unanimous in warning that the build-up of the greenhouse gases could, in the century ahead, become catastrophic.

It is, therefore, not surprising that some of the world's most thoughtful and renowned environmentalists are calling for a “massive expansion” of nuclear to combat global warming, including Gaia theorist James Lovelock, Greenpeace co-

founder Patrick Moore and *The Whole Earth Catalogue* founder Stewart Brand.

Many countries like China, India, the United States, Russia and Japan have a strong commitment to nuclear power. Other nations – such as Argentina, Brazil, Canada, Finland, South Korea, South Africa, Ukraine and several countries in Central and Eastern Europe – are acting to increase the role of nuclear power in their economies.

STRATEGIC GLOBAL PARTNERS

PBMR is in the fortunate position of having strategic international partners which enable the company to extend its marketing for electricity and process heat into research on a global scale.

Westinghouse's continued involvement in PBMR provides international experience and credibility. Its track record of technology transfer and capability in the localisation of the nuclear manufacturing industry is evident in France, Japan and the Republic of Korea. In December 2006, China's state nuclear power technology company selected Westinghouse's AP1000 as the technology basis for the construction of four new nuclear plants in China.

PBMR is drawing on this global experience in direct support from Westinghouse in terms of nuclear prudence, safety culture, cost and schedule challenges and overall nuclear delivery focus.

Toshiba, which acquired Westinghouse in 2006, adds a further dimension of its global nuclear support to PBMR. Toshiba/Westinghouse has confirmed that PBMR is envisaged to be part of their product portfolio. The PBMR Board's view is that the pebble bed technology is complementary to Westinghouse's current technology offering.

ECONOMIC BENEFITS FOR SOUTH AFRICA

The PBMR project is one of the most technologically advanced capital investment projects undertaken in South Africa since 1994. The successful deployment of this leading-edge technology has the potential to make a significant contribution to local and international energy supply.

In addition, it will contribute to the transformation of South Africa's current resource-based economy to a more knowledge-based economy.

PBMR has set a target of 60% local content for reactors to be sold locally and 40% for reactors to be sold internationally. This goal supports an integrated localisation strategy, taking lessons learnt in South Korea, within the context of our local supply chain, our skills shortages, and capacity building programmes to augment current capacity and government's commitment to the substantive nuclear-built programme in South Africa.

GOVERNANCE AND SKILLS OF THE BOARD

During the year, PBMR was transferred from the Department of Trade and Industry (dti) to the Department of Public Enterprises (DPE), which resulted in the constitution of a new Board of Directors for PBMR.

The multifaceted skills each member brings to our decision-making are of tremendous value in the quest to bring the PBMR technology to fruition.

ACKNOWLEDGEMENTS

A project such as the PBMR cannot see the light of day without government support. To this end, we are deeply grateful for the honourable Minister, Mr Alec Erwin, whose department took custody of PBMR during the year under review.

Honourable Minister Alec Erwin was instrumental in ensuring the necessary government funding to maintain this project and reiterated government's intention to eventually produce between 4 000 MW and 5 000 MW of power from pebble bed reactors in South Africa.

Our thanks also to the honourable Minister of the Department of Minerals and Energy, Ms Buyelwa Sonjica, who on numerous occasions pledged her department's support for the PBMR programme. The Minister also stated that South Africa needs to develop the entire nuclear base for the country.

We also wish to thank Eskom, the IDC and Westinghouse, for their ongoing support as investors, and the PBMR Board for their leadership, support and guidance.

Lastly, I wish to congratulate the PBMR executive management for their achievements during the year. Behind them are some 700 individuals who, through their hard work, dedication and belief in the project, ensure that South Africa is still internationally regarded as the world leader of high temperature, gas-cooled nuclear technology.



Dr Alistair Ruiters
Chairman