

OPINION

SOUTH AFRICA'S ENERGY

Demand vs. energy supply



BY GERRIT LOK

a recent report by Peabody – the world's largest private-sector coal company – the world's population will grow by an estimated 25% over the next quarter century. This population growth will result in a considerable increase in energy demand. In order to meet this demand, a large investment in both nuclear power and renewable resources will need to be made. We need to up our efforts on the renewable energy front, not only in conferences and papers, but also in hard-earned currency that we can spend on renewable energy research and implementation.

Although the increase in coal export capacity will solve some of the country's export demand issues, South Africa will still experience internal supply problems. In terms of coal mining, the focus will shift from the Mpumalanga area to the Waterberg and Tuli complex areas. The problem here, however, lies with environmental impact assessments in ecologically sensitive areas, as well as already established tourism sectors. In view of this, mining houses may face a tough time getting their licences from government. If everything could run on solar power we would gladly do it – the problem is that for the foreseeable future, renewable energy sources will not be able to carry the base-load requirements. This will be confined to energy supply for residential power demand. However, if we allow residential users to sell power back into the grid, then we can foresee the investment in renewable energy capability growing in leaps and bounds. But the cost is extremely high, running to the R300 000 mark just to go off of the national power grid.

The South African government should continue to set guidelines and targets for renewable energy, as well as control tariff structures. The solution is not in focusing on aspects such as carbon capture only, but directing the majority of funds towards research and development of renewable energy sources for the future. ☐

It is an undeniable fact that both coal and renewable forms of energy will play an important part in South Africa's energy future. This is according to Hatch Coal sector leader Gerrit Lok.

The coal market in South Africa has seen some difficult times during the past two decades, but not to the same extent as other commodities during the global financial crisis. For the past decade, we have been producing approximately 240 million tonnes of coal per year – for both the domestic and export markets. The upgrading of the export capacity to approximately 91 million tonnes of coal per year is almost finalised.

It has been estimated that South Africa's domestic demand per annum for coal will increase by more than 75 million tonnes over the next decade. Considering this, the prediction is that there will be a cut-off point in which coal production will be insufficient to meet the expected energy demand. Alternative

measures will have to be taken to meet the demand, such as importing energy from neighboring countries and investing in renewable energy sources. It is most likely that the default will be supplemented with nuclear power. Nuclear power stations are very expensive to establish. It could be anything from between 2 to 3 times more expensive to establish a nuclear power station than an equivalent coal-fired power station. However, nuclear power stations have much lower operating costs.

It is estimated that the world's coal reserves could run out over a period of 150 years, given current growth estimates. Also, nuclear fuel is expected to last for about 80 years, leaving us to rely on renewable energy sources, gas and oil.

South Africa is playing catch up in this area at the moment. This is the tendency throughout the world, for example in the US, where quite a number of nuclear power stations are coming to their natural end, resulting in the need for further power stations. According to