

## Energy Policies of South Africa

by Philip Swanson\*

Last year the South African government requested the IEA carry out a survey of its energy sector as an input into the government's efforts to develop a new energy policy white paper. An IEA team of experts held over 75 meetings with South African energy sector officials in government, industry and academia. The result is the IEA report, *Energy Policies of South Africa*, published in May 1996. The Government's draft white paper is to be published this Autumn.

### Policy Making

Some of the report's most important recommendations deal with creating the framework conditions for policy making. Apartheid-era energy policy usually was made in a nontransparent manner, for the most part by the energy industry itself. One legacy of such "off-campus" policy formation is that the Department of Mineral and Energy Affairs (DMEA) now finds itself under-staffed and under-skilled for the enormous new policy making agenda it faces. The IEA advises the government to strengthen the professional civil service, ensuring its competence to perform the policy making role.

The IEA commends the government for the amount of policy debate now taking place, involving groups that previously had little or no voice in the process. However, it cautions against letting the consultation process become an end in itself, delaying the taking of urgent policy decisions.

### Electricity

South Africa generates over half the electricity on the African continent – though the majority of its own people has no access to grid electricity. The government plans to increase the level of electrification from around a third of the population in 1993, to 72 percent by the turn of the century, via some 2.5 million new connections. This plan will be difficult to fulfill as electrification extends to areas that are more remote, and hence more expensive to electrify. Moreover, some fundamental questions regarding the government's overall strategy remain unanswered, including priorities (e.g., which areas and dwelling types to electrify first), financing, and the structure of the electricity supply industry.

For much of the country, electricity is distributed by municipal electricity departments, many of which use electricity sales to subsidize other municipal functions. Since larger distribution units will probably be needed in order to handle electrification financing, alternative sources of income for local governments must be found. However, any future involvement of municipalities in electricity distribution (e.g., via taxation), should be transparent and appropriately ring-fenced.

At this stage the immediate introduction of fully developed competition or privatization in the electricity supply industry would probably not accelerate the electrification program – and might even divert government and management attention from it. Nevertheless, the IEA believes there would be long term benefits from introducing greater transparency in order to allow competition in the longer term.

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Competition should be reconsidered in, say, five years, when the present phase of electrification should be completed.

### Coal

Most electricity in South Africa comes from burning coal. Coal dominates the country's energy system, accounting for more than 70 percent of primary energy demand and nearly a quarter of final energy consumption.

A small number of companies dominate the industry. Since mining companies usually do not have to relinquish mineral rights over time, it is difficult for new companies to enter the market. The IEA recommends that development conditions establish the principle that rights be relinquished progressively unless development proceeds at an agreed pace.

South Africa is one of the largest coal exporters in the world, reemerging as a mid- to high-cost producer by international comparisons. Additional export capacity is likely to be slow in development and constrained by the rail and port facilities which are dedicated to a single group of companies. The IEA advises the government to ensure fair competition in the provision of, and access to, transport and export infrastructure services.

### Liquid Fuels

About a quarter of coal production is used for the production of synthetic fuels. Altogether over 30 percent of South Africa's liquid fuels consumption comes from synthetic sources, either manufactured by Sasol from coal, or by government-owned Mossgas from natural gas.

Previous South African energy policy was dominated by the pursuit of a secure supply of oil in response to the UN oil embargo (lifted in 1993). The petroleum industry, from exploration to retailing, has been enveloped in a complicated web of informal arrangements, market sharing agreements, trade restrictions and pricing controls. Much of this remains in place. Important elements include financial supports for the production of synthetic fuels.

In December 1995, the government reduced the subsidy to Sasol by lowering the "floor price" used to determine the subsidy, and promised to phase it down thereafter to a point where, given oil prices prevailing at the end of 1995, Sasol would not receive any protection by mid-1999. The IEA supports the elimination of subsidies to liquid fuels.

The government has also been active in the procurement of conventional oil, importing it through the Strategic Fuel Fund, and searching for it through the state-owned E&P company, Soekor. The IEA supports moves by the Government to diminish its role in oil purchases for the privately held refineries. Experience in IEA countries shows that companies perform this role best themselves. Regarding Soekor, the IEA points out that allowing this state-owned E&P company to also perform the regulatory role for offshore activities presents a conflict of interest.

The government, through Soekor, holds the exploration license for almost the entire offshore territory. Last year Soekor invited the international petroleum industry to make sub-license exploration bids. The IEA interviewed a number of those who bought information packages. Although companies felt terms were generally competitive with those offered elsewhere, they were concerned about low geological prospectivity and the uncertainty of some terms, especially

those regarding gas – which are important considering the high likelihood that any discovery is more likely to be gas than oil.

#### Gas

South Africa has few gas resources besides the small deposits of natural gas offshore Mossel Bay, currently being synthesized into liquids, and some undeveloped coal bed methane deposits near Waterberg. Most future gas is likely to be imported, either from Mozambique or Namibia. However, development of these deposits will depend on markets in South Africa, which are uncertain due to competition from cheap coal. Further holding back development is uncertainty regarding government policy, including fiscal treatment for pipelines, etc.

The IEA advises the government to take into account its limited capacity for enacting a sophisticated regulation regime, and to aim for as simple a system as possible which meets the objectives of encouraging development, leaving open the possibility of future regulatory intervention, and providing safeguards to avoid monopoly abuse.

#### Environment

One advantage of gas use is environmental. In South Africa, the coal fuel cycle is the dominant source of air pollution and overall waste generation. This includes pollution from coal combustion in power generation and indoor pollution from its use in low income dwellings. The latter raises serious health concerns. Nonsustainable use of wood fuel is also becoming an important problem. Nevertheless, it is unclear how much attention South Africa will be able to devote to environmental concerns in the near-term, given its economic development priorities.

#### Energy Efficiency

Little attention to pollution and other externalities has contributed to low energy prices, as have low energy taxes and abundant cheap coal. Low energy prices have in turn contributed to a low priority for energy efficiency. More efficient use of energy could provide an opportunity to cut costs and improve, or at least maintain, industrial competitiveness at a time when many sectors in the economy face competitive pressures as tariffs are removed.

Residential electricity demand, at present less than 20 percent of the total, is projected to double by 2015 as a function of economic growth and substantial new infrastructure investments in housing and electrification. This will make the electricity demand load profile more peaked. Efficiency measures could help reduce utility costs for peak demand, while lowering overall consumer costs and reducing pollution. The construction of new housing under the Reconstruction and Development Program (RDP) provides a “one-off” opportunity to build in basic energy efficiency measures in one million new homes. The IEA recommends that criteria for receiving government subsidies under this program include some basic energy efficiency guidelines.

#### Conclusion

The energy sector will have an important role to play in South Africa’s economic and social transition, for example, in electrification of households. Moreover, other African countries are looking to South Africa as a role model. The IEA undertook this survey not only to help South Africa, but

to help that country provide a good example. Hopefully, success in South Africa can lead to an economic “virtuous spiral” upward from the Cape of Good Hope.

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