GENERAL NOTICE

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National Energy Efficiency Strategy

of the

Republic of South Africa

Department of Minerals and Energy

First Review October 2008

Foreword

In South Africa we used to take energy for granted until January 2008 when the electricity demand outstripped supply and load shedding had to take place and the fuel scarcity also made consumers aware the energy is finite and it should be used optimally. Our country's economy is largely based on minerals extraction and processing which is by its nature very energy-intensive. Whilst our historically low electricity, coal and liquid fuels prices have contributed towards a competitive position, it has also meant that there has been little incentive to save energy.

So in many respects we started with a clean slate with little energy efficiency measures having taken place in 2005 ramping up to a significant number of energy efficiency projects in 2008. Apart from many years of work by universities and other research institutions that have pointed the way. *The White Paper on Energy Policy* (1998) recognized that standards and appliance labelling should be the first measures to put in place in implementing energy efficiency. Indeed such prescriptive-type measures provide the framework on which any energy efficiency strategy is based. At the same time consumers of energy also need to perceive the cost-benefits they can derive from energy efficiency measures and it is here that demonstrations are essential. In South Africa Government is taking the lead by using Public Buildings as an example. Cabinet has approved the implementation of a programme of energy efficient measures in National Government Buildings which is currently underway and which will be extended to provincial and local government. The Commercial Building Sector, specifically the hospitality industry is an area for potential improvement given the rapid increase in construction.

The Industrial and Mining Sectors are the heaviest users of energy, accounting for more than two-thirds of our national electricity usage. Here lies the potential for the largest savings by replacing old technologies with new, and by employing best energy management practices. The Transport Sector uses three-quarters of South Africa's petroleum products, making it an obvious place to implement measures to improve efficiency. Promotion of energy efficient vehicles and those with lower emissions, building a public transport infrastructure and a travel demand management system are some of the key features of the approach adopted. The Residential Sector has great potential for energy savings given the National Housing Programme, since building design is the major factor determining the energy use of a household. An electrical appliance labelling initiative has recently been launched whereby the energy consumption of all new "white products" will be rated for efficiency.

Perhaps the most difficult area for implementation is the changing of people's behaviour as promotion of public awareness about the costs and benefits of energy efficiency has been ongoing since 2005. Major energy savings can only be achieved through changes in people's behaviour, and *that* depends on informing them about what options exist. The recent Climate Change and Global Warming studies sensitised the nation about the impact that energy use has on the World's weather systems. In this era of climate change the Department of Environment and Tourism has taken the lead with a new modelling study called the Long Term Mitigation Study (LTMS) which looks at the required and urgent measures to reduce CO_2 emissions. It is hoped that this Energy Efficiency Strategy will provide a blueprint for this venture.

BUYELWA P SONJICA
Minister of Minerals and Energy

Executive Summary

This is the first review of the Energy Efficiency Strategy for South Africa after its publication in 2005. It is a consolidated Governmental document geared towards the development and implementation of energy efficiency practices in this country. The Strategy takes its mandate from the *White Paper on Energy Policy*, published in 1998, and links energy sector development with national socio-economic development plans as well as being in line with other Government departmental initiatives. In addition, it provides clear and practical guidelines for the implementation of efficient practices within our economy, including the setting of governance structures for activity development, promotion and coordination.

This Strategy allows for the immediate implementation of low-cost and no-cost interventions, as well as those higher-cost measures with short payback periods. These will be followed by medium-term and longer-term investment opportunities in energy efficiency. The Strategy acknowledges that there exists significant potential for energy efficiency improvements across all sectors of our national economy.

The vision of the Strategy is to contribute towards affordable energy for all, and to minimise the negative effects of energy usage upon human health and the environment. This will be achieved by encouraging sustainable energy development and energy use through efficient practices. The three cornerstones of sustainable development are embraced within the strategic goals of this document, these being environmental, social and economic sustainability.

The Strategy sets a national long term target for energy efficiency improvement of 12% by 2015. This target is expressed in relation to the forecast national energy demand at that time, and therefore allows for current expectations of economic growth. It is accepted that this target will be challenging, but at the same time it is considered to be readily achievable through the means described within the following pages.

It should therefore not be confused with the Power Conservation Programme for electricity. Conservation by nature is only used in emergencies where there is not sufficient supply of energy and therefore will have a negative impact on production, as the only alternative for the extreme short term is to shut down activities. Whereas energy efficiency has a positive impact on production but takes place over a certain time period, more or less a 3 year cycle is followed to plan, implement and measure the implementation of energy efficiency projects.

Energy efficiency improvements are and will be achieved largely via enabling instruments and interventions. These will include *inter alia* economic and legislative means, efficiency labels and performance standards, energy management activities and energy audits, as well as the promotion of efficient practices and therefore has a longer term goal.

The Strategy will cover all energy-using sectors and will be implemented through Sectoral Implementation Plans as outlined within. Systems will be put into place in order to periodically monitor progress against the target that will be reviewed at the end of each phase.

Definitions and Terminology

Appliance Labelling	Labels denoting energy consumption of appliances
CDM	Clean Development Mechanism
CFL	Compact Fluorescent Lamp
CO_2	Carbon Dioxide
CSIR	Council for Scientific & Industrial Research
CV	Calorific Value
DME	Department of Minerals and Energy
DEAT	Department of Environmental Affairs and Tourism
DNA	Designated National Authority
DoH	Department of Housing
The dti	Department of Trade and Industry
DSM	Demand Side Management
EE	Energy Efficiency achieving the same or improved output with a reduced input of energy
Energy Intensity	Energy use per unit of output or activity
ESCo	Energy Service Company
GW	Gigawatt (10^9 Watts) unit of electric power
HVAC	Heating, Ventilation and Air Conditioning
IEP	Integrated Energy Plan
LED	Light Emitting Diode
LTA	Local Transport Authority
NDoT	National Department of Transport
SANERI	South African National Energy Research Institute
NERSA	National Energy Regulator of South Africa
NO_x	Oxides of Nitrogen
NT	National Treasury
PJ	Petajoule (10^{15} Joules) unit of energy
RDP	Reconstruction and Development Programme
REDs	Regional Electricity Distributors
SABS	South African Bureau of Standards
SARS	South African Revenue Service
SO_2	Sulphur Dioxide
STANSA	Standards South Africa
VSD	Variable Speed Drive