

# ESKOM IDM

## PREVENTION IS BETTER THAN CURE



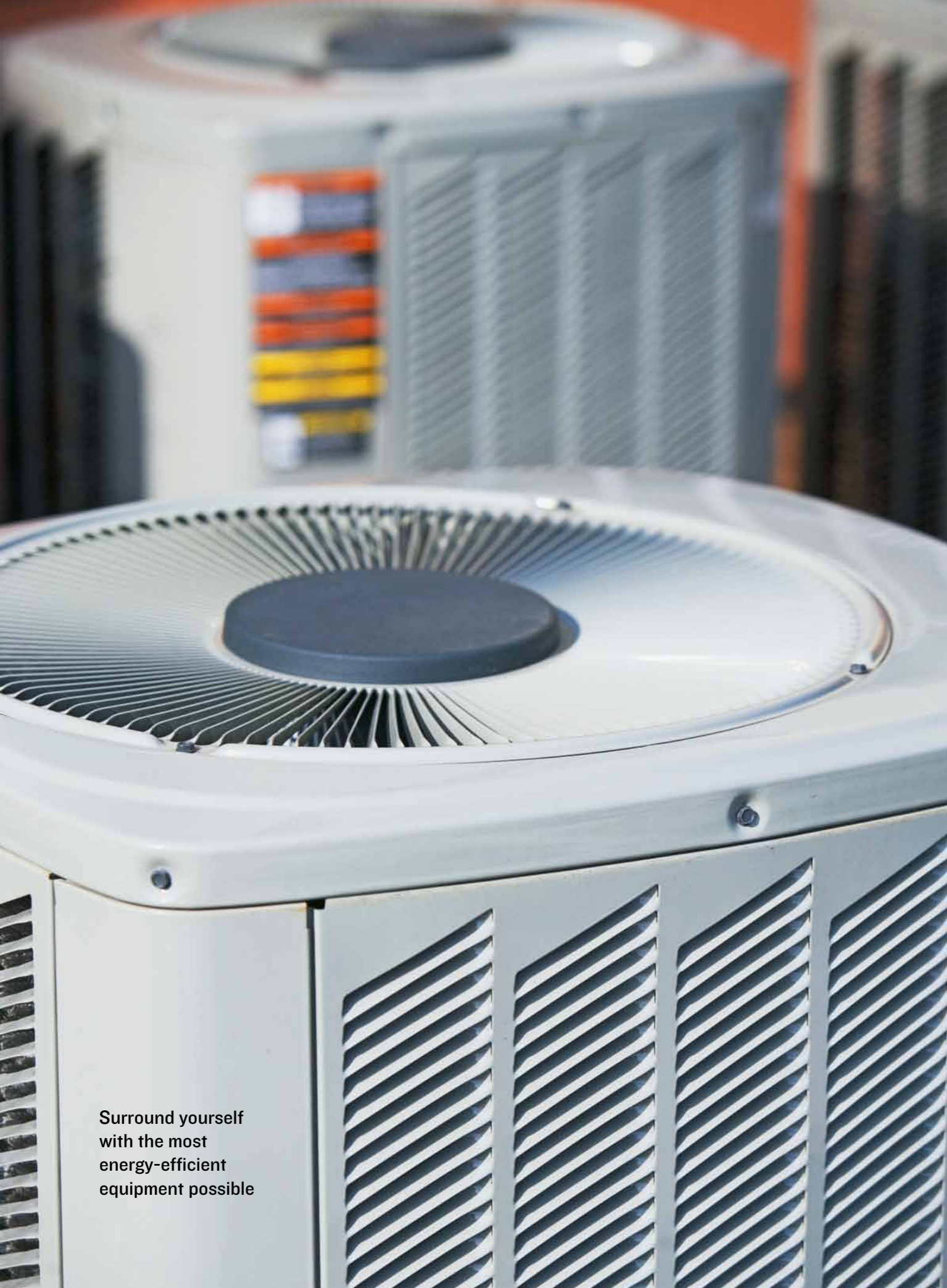


# PREVENTION IS BETTER THAN CURE

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*At times, South Africa's electricity suppliers can no longer meet demand; so until supply once again catches up, the emphasis is on reducing demand, as Jeff Daniels learns*

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Surround yourself with the most energy-efficient equipment possible

South Africa is floating on an ocean of coal but it's not making the energy situation any easier. The country's power stations are already working flat out and often it's necessary to bring old stations that have been pensioned off back into production at peak times. Once, South Africa had energy to spare and could export to neighbouring countries. Now, it has to import.

What seemed like a comfortable position a couple of decades ago has changed dramatically, thanks to the ever-increasing affluence of the population. Now homes that were once lit by paraffin lamps and heated by coal braziers have electricity. The new middle class aren't washing their clothes in the sink but in brand spanking new washing machines. At peak times of the day, Eskom—the state-run electricity supplier—is finding it hard to meet demand. New, bigger and more productive power stations are being built but there is a limit to what can be done within the country's resources. There's also the persistent realisation that environmentally, coal is not the answer.

Therefore, in the short to medium term, Eskom has decided that the answer is conservation. Despite being a company whose purpose it is to produce and sell electricity, Eskom is now putting R5 billion behind a whole raft of initiatives

designed to cut consumption in every corner of the country.

The responsibility for this programme lies with Andrew Etzinger, a long-time Eskom employee and head of the Integrated Demand Management Project since 2006. "IDM's role," says Etzinger, "is to co-ordinate demand side strategies by taking a market-driven approach to understanding and meeting consumer requirements. Armed with this understanding, Eskom can collaborate with government, external stakeholders and consumers alike to achieve

the overall goal of cutting consumption without necessarily reducing the quality of life for citizens."

Whether dealing with residents, commerce, manufacturing or agriculture, a team of 170 working from the six most important regional centres is masterminding proceedings. Regardless of

the audience, the broad approach remains consistent. For all sectors, electricity is used to power lighting, heating and operation of machinery and in all cases the message is identical—use only what you need when you need it and surround yourself with the most energy-efficient equipment possible. In other words, change behaviour and change technology.

Eskom IDM has developed programmes for every sector but the one with the greatest short-term potential is the domestic market. "The very simplest and quickest action," says

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**R5  
BILLION**

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**Funding set aside by  
Eskom for cutting power  
consumption**

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CFLs only consume one third of the power of incandescent bulbs

Etzinger, “is to switch from incandescent bulbs to CFL [compact fluorescent lighting]. Worldwide, there have been bold initiatives to see incandescent lights phased out by 2012. In the UK, over 39 million CFLs have been installed in houses to promote energy efficient lighting. South Africans too have seen the light: Eskom has fitted 47 million CFLs in homes across the country. This has resulted in a saving of 1,800MW of electricity—the equivalent to half a large power station.”

Incandescent bulbs create light by heating a

thin filament of metal to white heat. But along with the light there is a lot of hot air. CFLs use electricity to excite mercury vapour, producing short-wave ultraviolet light that then causes phosphor to fluoresce, producing visible light.

People like incandescent lights because they are immediately bright; but the sad fact is that a typical 100 watt tungsten filament incandescent bulb may convert only two per cent of its power input to visible white light, whereas typical fluorescent lamps convert about 22 per cent of the

**47  
MILLION**  
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**Number of CFLs fitted in  
homes by Eskom to date**

power input to visible white light. Although prices are coming down, CFLs are still much more expensive than incandescent bulbs to buy but as they should last 10 to 20 times longer while only consuming around a third of the equivalent power, CFLs are a much better long-term solution for all concerned.

Having focused the population's attention on lighting, the next most productive area is water heating. For many years, poorer residents were obliged to wash in cold water, often at an outside tap. Not surprisingly, the sale of electric water geysers has been considerable. But as around 40 per cent of domestic electricity goes into geysers, Eskom IDM is keen to promote more efficient ways. For the next 12 months, Eskom IDM is promoting the use of heat pumps which, in a counter-intuitive way, are much more efficient than a typical resistant-element geyser. For every kWh of energy supplied to the heat pump, more than 3kWh of thermal energy is produced.

This heat pump campaign, along with a similar rebate incentive on solar heating, are two areas where local suppliers and merchants can take more of a role. The schemes are being administered through Eskom registered suppliers (and through the Sustainable Energy Society



Eskom is working hard to promote energy efficiency



Lagging pipes

of Southern Africa [SESSA] in the case of solar heaters) in order to weed out unscrupulous installers or inefficient equipment. "It's vital," says Etzinger, "not to compromise the overall programme by allowing anything to be installed that doesn't meet best practices. As we are dealing with public money, installations have to be monitored independently in order to assess their quality."

**"IT'S VITAL NOT TO COMPROMISE THE OVERALL PROGRAMME BY ALLOWING ANYTHING TO BE INSTALLED THAT DOESN'T MEET BEST PRACTICES"**

Try as it might to reduce demand, there are times when there just isn't enough supply. Part of IDM's remit is to test load limiting technology in order to minimise load shedding. There are a couple of pilots taking place in two Johannesburg suburbs where residents have been invited to participate in new load limiting technology aimed at controlling residential demand in order to avoid the need to shut down supply completely.

Residents are being given an 'electricity demand display instrument' (or eddi) that can be plugged into any socket in any room in the house. When the network is under stress, they can then see in real time exactly what power various devices are consuming and make their own decisions on what to

switch off—hopefully diverting the need to close down the whole network.

Changing attitudes and behaviour can be a slow process, but with a combination of carrot and stick, Eskom IDM is seeing badly needed progress being made. But much of the hope lies with the next generation who are learning about the need for conservation as part of their education. If the youngsters can't help educate their parents, at least they will understand the situation when it is their turn to control the household budget. **BE**

For more information about Eskom IDM visit: [www.eskomidm.co.za](http://www.eskomidm.co.za)



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