

Challenges also create opportunities



UNIVERSAL NEED: A Bulgarian Roma man works DECIDE: Energy use reflects the billions of decisions we make in our homes, offices, factories and motor on top of a pile of wood coal. PICTURE: REUTERS

CONTINUED FROM PAGE 14

In terms of technological advancements, BP has also come up trumps with BPSA's award-winning Waterfront office which ranks among the world's most innovative and sustainable buildings. Its design embodies the principles of BP's global Green Office initiative, providing a truly green environment for employees, contractors and visitors in every sense of the word.

With more than 400 solar panels on the roof which is the largest solar power array in Africa, double glazing of the windows which helps to keep the building's indoor temperature within a reasonable range, a passive air-handling system whereby air moves naturally through the building rather than being pumped, the use of natural lighting through atrium roof lights and light shelves which reduce the requirement for artificial lighting, and a lighting system that is both movement- and light-sensitive thus reducing energy load, the BPSA Waterfront office in Cape Town really is a pioneering achievement in passive energy design.

What's at stake in the Western Cape?

Although climate change is a global phenomenon, with no ecosystem on Earth remaining unaffected by rising temperatures this century, research has indicated that the south-western corners of the three continents below the equator, namely America, Africa and Australia, are likely

intrusion, raising groundwater tables and increasing coastal erosion.

vehicles every day.

The Western Cape's 33 important estuaries, which are feeding and nursery grounds for many shellfish, fish and bird species, are particularly vulnerable to climate change. Fisheries may also be affected.

Responsible energy

In terms of feedstock for power generation, South Africa is coal rich, which means that we are relatively secure from a coal-fired power station perspective. However, like many other countries around the world, we are subject to fluctuations in the liquid fuels market, and this affects 3% to 5% of Eskom's total electricity production capacity.

Eskom's electricity capacity is largely centralised in the north-eastern parts of South Africa, which means lengthy transmission with regard to energy distribution. Therefore, a best-case energy scenario for Eskom for the Western Cape involves a balance between conventional coal-fired, renewable and nuclear sources of energy, as this offers important diversification of the energy mix with decentralised power spreading the energy supply risk.

The Western Cape's electricity demand is peaking at 4 000 MW in winter and our energy demand is expected to grow to 420 million GJ over the next 20 years, so the first big win in responsible energy is using energy efficiently, which can provide considerable financial and energy savings, as well as carbon emission reductions.

If the industrial sector, for example, which accounts for 46% of total energy consumption in the Western Cape, producing 48% of the province's carbon emissions, were to become 10% more efficient by 2024, there could be cumulative savings amounting to 278 million GJ of energy and carbon emission reductions of more than 35 billion kilograms.

that it is controversial in terms of the transportation of radioactive materials, the disposal of radioactive waste, health impacts for communities living near nuclear plants, the prohibitive cost of decommissioning plants and the possibility of nuclear weapons proliferation.

PICTURE: CLIVE KNIGHT

As in most things, challenges also create opportunities and, by moving quickly towards a sustainable energy future in the Western Cape, it is hoped that the way forward will provide many benefits.

Some of the benefits of diversifying the energy supply mix in the province could be investment stimulation, job creation and emission reductions. There could be technology advances, as well as market opportunities for transportation, power generation, hot water and space heating, green project development and a stake in the carbon market that is developing internationally. In the process, health, social and environmental problems associated with an energy system that has relied heavily on coal-produced electricity and petro-chemicals could also be addressed.

The Age of Renewables has arrived

Worldwide, the monumental transition from a "Hydrocarbon Age" to the "Age of Renewables" has begun. The Western Cape is undeniably a part of this historic global process, which means that you and I are becoming a part of history in the making, influencing not only our energy future, but also the environmental and cultural changes that are part and parcel of this momentous transition. These are sure to be interesting times!

What you can do...

For household electricity savings:

- Turn off lights when you leave a room and only leave lights that are necessary for security burning all night.
- Replace regular, incandescent light bulbs with compact fluorescent lights (CFLs) – disposing of the CFLs in your supermarket disposal bin.
- Use energy efficient air-conditioners and set thermostats at a point that will save energy while still keeping you comfortable.
- Plant shade trees around your house to keep it cool in summer and install security doors and burglar bars so that doors and windows can safely be kept open in summer for a through draft.
- In winter, pile on jerseys and snuggle under blankets or quilts but if you must use a heater, make sure it is an energy efficient one.
- In winter, wear warm sleepwear and socks to bed, put brushed cotton sheets on your bed and use an old-fashioned water bottle instead of switching on an electric blanket.
- Use draft excluders at the base of your exterior doors and windows to keep out drafts and seal up any other air leaks in your home.
- Insulate your ceiling. • When buying new appliances, make sure that they are
- energy efficient ones. • Dry your clothes on an outside line in summer and use
- a drying rack or clotheshorse in winter. • Only use your washing machine when there is a full
- load, or if you need to do a half load, use the economy programme.
- Use your washing machine at a low temperature setting, which uses less energy than a higher temperature setting.
- As 7% of all electricity is used by appliances on standby, switch off television sets, computers and other appliances when they are not in use.
- Avoid overfilling your kettle and only heat enough water for one cup when making yourself a cup of tea or coffee
- Defrost your fridge and freezer regularly to keep them



running efficiently and avoid putting hot or warm food into the fridge – allow food to cool down first.

- Ensure that your dishwater is fully packed and wash on an economy cycle every time you use it.
- Because the geyser in your home uses 40% of your household electricity, switch it off if you are going to be away from home for longer than two days and use an insulating blanket on your geyser and around the associated pipes, which will reduce the amount of heat lost to your roof.
- Reduce your electric geyser consumption by boosting with a solar water heater.
- When cooking, ensure that you use solid-based pots with tight-fitting lids and simmer meals in a hotbox rather than on the stove.
- Don't forget to reduce, recycle and re-use as recycled goods generally consume less energy in their manufacturing process than new ones.

For vehicle fuel consumption and emissions savings:

- Set up a car pool or ride-sharing initiative with family, friends, colleagues and neighbours.
- Commit to buying new vehicles with as small an engine as possible, preferably a 1200 to 1400cc engine which is more than adequate for most trips.
- Ensure that you have the correct tyre pressure as under-inflated tyres are not only dangerous, they cause the engine to work harder and therefore consume more fuel.
- Maintain your vehicle as partially blocked filters, poor oil performance and under-performing emissions control systems can result in increased fuel consumption and higher emissions.
- Remove roof box rails as all external fixtures cause an increase in aerodynamic drag, requiring extra power from your engine, increasing fuel consumption and emissions - opening sunroofs and windows also increases drag over your vehicle.
- Use high-quality fuels such as BP Ultimate, which will allow your vehicle to run more efficiently via improved combustion quality, thus reducing fuel

consumption and lowering emissions independent tests have shown that the fuel economy benefit of BP Ultimate Unleaded can be up to 25km more a tank and up to 36km extra when using BP Ultimate Diesel, compared to ordinary fuels. • Reduce the use of air-conditioning in your vehicle as this requires more fuel and produces increased emissions.

• Avoid carrying unnecessary items in your boot or cabin as reducing the load on your vehicle will reduce fuel consumption and lower emissions.

• Reduce stop/start driving as every time you use the brake or accelerate energy is lost as heat, which reduces fuel economy. • Avoid unnecessary idling as this will consume fuel and produce emissions even while stationary. Rather switch off your engine if you will be stationary for more than a few minutes and it is safe to do so. • Avoid high speeds and hard acceleration as this will increase fuel consumption. Accelerating more steadily to your desired

speed will reduce fuel consumption and



Cape Times... Wednesday, July 29, 2009

A COMMERCIAL FEATURE

to be the most affected by climate change.

The exact manifestation and scale of change in the Western Cape region cannot be predicted for certain; however it is possible that there will be an increase in the annual average temperature of at least 1°C by 2050. Higher temperatures and increased wind velocity could create conditions conducive to wild fires, with a possible increase in the frequency and intensity of extreme events such as fire and flooding.

However, overall western parts of the Western Cape are expected to experience reduced rainfall with resultant decreased water resources. The level of moisture in soils will be reduced due to the increase in temperature coupled with the decrease in rainfall.

With water being the first of the critical resources to be affected by climate change, there will be increased pressure on water resources and possibly even severe water stress, which will affect not only human populations but also natural systems in the region.

Ecosystems and biodiversity are likely to come under considerable pressure from increased temperatures and we could lose up to half the extent of the fynbos ecosystem and a significant number of its 8 000-odd endemic species.

Rises in sea level will impact on coastal ecology and exposure to extreme weather events, which may increase in terms of frequency and intensity, increasing salt-water

AVE UP TO

R4000 ON

OUR MIELE

MBLE DRYER

As Koeberg's 1 800 MW capacity is currently meeting less than half the electricity requirements for the province, electricity is being imported from the north-east to make up the shortfall. This picture could be intensified with a 5%-to-6%-a-year growth rate over the next five to eight years.

To achieve energy security in the province, Eskom is strengthening the transmission grid that brings power from the north-east. Two gas-turbine power stations, with an installed capacity of 2 084 MW have been completed in Atlantis and Mossel Bay, and a more technologically advanced, coal-fired power station, the Medupi Power Station, which uses dry-cooling fans rather than water-cooled ones, making it more climate change and environment friendly, is under construction in the Waterberg, which is situated in the north of the country.

With Eskom considering Thyspunt, which is 6km from Oyster Bay near Cape St Frances as an alternative site for its pressurised water reactor, with the current Koeberg site as another possibility, nuclear power is set to continue contributing to the national power grid. This is despite the fact



Put your energy to better use.

Save electricity on these powerful Miele Offers. Visit us at at our Tyger Valley Showroom.

> **FREE ZWILLING G SET**

ORTH R2150 WITH YOUR

PURCHASE

Washing Machines

All machines rated

A & A+ for top

energy efficiency.

Tumble Dryers Gentle on clothes. tle on the environment

Dishwashers

AAA energy rating. Jses only 10 litres water for

a 12 place setting. (Hand wash 83 litres)

SAVE ENERGY: When buying new appliances make sure they are energy efficient appliances. Energy efficient air-conditioners will save energy while still keeping you comfortable. PICTURES: COURTESY OF DAIKIN

acuum Cleaner

Acknowledgement is gratefully given to: Andrew Etzinger and Lodine Redelinghuys, Eskom – for checking the Eskom-related copy Chris Lockett – BP technology manager – for the helpful petrol- and engine-saving tips

References

* Heat, Penguin Books, George Monbiot * Hothouse Earth: The Greenhouse Effect & Gaia, Bantam

Press, John Gribbin

* Miracles of Hope: Surviving and Thriving in the 21st Century, White Rock Publishers, Carole Knight www.miraclesofhope.org

* The Weather Makers: The History and Future Impact of Climate Change, Penguin Books, Tim Flannery





INNOVATIVE ENERGY: Keeping your food warm through residual heat.

SAVING ELECTRICITY: Make sure your dishwater is fully packed and wash on an energy saving programme.

LOWER SETTINGS: When using your washing machine and tumble-dryer a low temperature setting will use less energy than a higher temperature setting. PICTURES: COURTESY OF MIELE

Daikin heating and cooling

...inverter technology that reduces energy consumption by up to 30%*



Anything else is a compromise For more information phone 0860 000 622 or visit www.miele.co.za to view our state of the art range of appliances. Cape Town Showroom Tel 021 946 3148/9, Ground Floor, Mettle Building Willie Van Schoor Ave, Tyger Valley.



e of 28 Hz to 108 Hz to greatly imp

emissions. • Avoid short journeys as cold-start journeys lead to high emissions and high fuel consumption for several minutes after start up – if feasible, rather use a bicycle or walk to your destination if it's near to your home.