



The Sezela Sugar Mill in KZN. The sugar industry's been looking into cogenerating power at mills for years, but has never been able to get the right price.

COURTESY OF ILLOVO



the only buyer of all power generated by IPPs, it has made little progress negotiating Power Purchase Agreements (PPAs) with IPPs. Issues around price determination and the management of relations between IPPs and Eskom have also not been finalised.

Eskom hasn't signed a PPA since 1976 when the Cahora Bassa Dam project came on stream. Frustration is increasing among prospective IPPs because of regulatory red tape swamping their attempts to register and get take-off agreements. These steps are essential to secure investment. Most want to put up wind farms and concentrated solar-power plants.

"If we push for prospective IPPs, we'll only be able to access the National Energy Regulator's (Nersa) renewable energy feed-in tariff (Refit), sign a PPA and register as an IPP by February 2011! So it's not good news for those who want to move forward quickly," said the South African agent for WELtec biodigesters Paul Reynolds. He believes the head of government's national planning commission, Trevor Manuel, could expedite the process. "All our efforts haven't amounted to much and we need someone with a bit of will to get involved."

In March, Nersa announced the Refit guidelines. In setting the rates at which Eskom needs to purchase power from IPPs, Refit shifts the focus from a capital cost to operational cost. Refit rates are R1,25/kWh for wind power, R0,94/kWh for small hydro power, R0,90/kWh for landfill gas and R2,10/kWh for concentrated solar power. Two key technologies – biomass/biogas and solar photovoltaics (PV) – weren't included, although Nersa promised to investigate and if possible, include them before October 2009.

Despite Eskom's hike, the cost of producing energy through renewable means is still a lot higher than coal and is not yet viable. "But with the envisaged future tariff increases, some technologies will achieve grid parity in a few years' time," said Van der Wath.

Break-even points depend on the cost of technology being utilised and the capital investment. "At the moment, Nersa's feed-in tariff has taken care of the cost of technology plus a return on investment. Currently, the break-even point for electricity

# Eskom's weak-minded POWER PLAY

Eskom's price structure means domestic electricity consumers are subsidising industry, while the cheap prices given to industry won't push large companies to invest in green energy, writes Robyn Joubert.

**E**SKOM'S 31,3% TARIFF INCREASE, which bumps the wholesale price of electricity up from 25,24c/kWh to 33,14c/kWh, is a hefty one and not likely to be the last.

Eskom is shoring up cash to fund the construction of coal-power plants to double capacity, from 40 000MW to 80 000MW. But, there's no need for Eskom to raise capital at all. Private investors are willing to invest billions in green energy if incentives and take-off agreements are in place.

"Eskom's calculating the tariff based on the cost of coal power plants," said a carbon credit originator at Nedbank, Karen van der Wath. "This doesn't take into account power produced by Independent Power Producers (IPPs). If Eskom buys from IPPs and adds more renewable sources, it wouldn't have to load its capital spending."

The poor have been somewhat shielded from the price hikes, with increases limited to 15%. Ironically, the increases

won't apply to customers with secretive special purchase agreements, although their increases were not specified.

According to an industry source, the smelter at Richards Bay pays between 6c/kWh and 8c/kWh, while mining pays 18c/kWh to 20c/kWh. Domestic customers, using an estimated 15% of Eskom's power are, in effect, subsidising industry's power consumption.

As a rough guide, prior to the increase, most domestic consumers paid between 45c/kWh and 60c/kWh, while commercial users paid about 38c/kWh and industry and mines about 25c/kWh. Given the cheap rates offered to industry, it's not surprising that industry doesn't feel the need to invest in green energy.

There's also been another blow dealt to the green power movement. Despite Eskom being unable to meet demand in the long term, it's doing little to encourage additional players. While Eskom's been appointed as

from landfill gas is R0,75/kWh and Nersa has given them a R0,90/kWh feed-in tariff," said Van der Wath.

The sugar industry's been looking into cogenerating power at mills for years, but has never been able to get the right price. South African Sugar Association external affairs director Johann van der Merwe said that when buy-in tariffs for biomass are included in Refit, it'll trigger investment in cogeneration at sugar mills and perhaps at timber mills. "The selling price of Eskom power is still lower than the Refit for renewable energy. The trigger for co-gen will be whether the Refit will make it viable, and not so much what Eskom is selling their electricity for."

*'When buy-in tariffs for biomass are included in Refit, it'll trigger investment.'*

It's estimated that solar PV will only become a viable investment at around R2,95/kWh, which is substantially more expensive than other renewables included under Refit, and significantly higher than the average of 33c/kWh that will be received by Eskom.

Many biomass plants can run independently of the national power grid, and some projects are proceeding regardless of Refit inclusion.

Reynolds said Eskom's increases make it more viable to buy biogas digesters to generate electricity. "At present interest rates and the euro/rand exchange rate, a plant that processes 150 000t sewerage sludge per annum will be viable if R0,80/kWh is received for electricity generated. Total investment is €3 650 000 euros (about R44 million) which could be paid off in six or seven years. These plants have a lifespan of 20 to 30 years."

# Eskom's expensive CHEAP TRICKS



**T**HE RATHER THICK-SKINNED CEO of Eskom, Jacob Maroga, never misses an opportunity to remind us ordinary South Africans how fortunate we are to be blessed with some of the cheapest electricity in the world. So cheap, in fact, that he and his massive-bonus-receiving mates at Eskom have no other choice but to subject us to massive double-inflation increases.

What old Jacob never mentions, however, is that when one takes into account all the services the state should have been providing to date but hasn't, (we're still hoping this will change), like passable health services, education, security, or functional administration, despite taxpayers labouring under one of the heaviest tax burdens in the world, then this supposed cheap electricity seems like the least the state can do for its long-suffering taxpayers.

But sometimes the rather selective arguments Jacob puts forth seem to border dangerously on downright dishonesty. Because it isn't domestic electricity consumers who benefit from cheap electricity, but rather industry.

And by industry, I don't mean farmers. According to an Agrelek adviser, speaking to us off the record, the tariff farmers were paying before the increase was in the same 45c/kWh to 60c/kWh band normal domestic consumers found themselves in. Compare that to the Richards Bay smelter, which paid between 6c/kWh and 8c/kWh, while mining got away with a measly 18c/kWh to 20c/kWh.

So unless I'm missing the elephant in the room here, it very much seems as if domestic customers, who incidentally use an estimated 15% of Eskom's power, together with other unfortunate sectors like agriculture, effectively subsidise heavy industry and mining's energy consumption. But what makes the

situation even more unpalatable is that because industry pays so little for their electricity, there is no incentive for them to start investing in green technologies. As a matter of fact, both Eskom and Sasol recently shelved all their green technology investments because of the recession.

All of which means ordinary electricity consumers, and other unfortunate sectors like agriculture, will still have to absorb some frightening increases before the Richards Bay smelter, for instance, feels enough heat to start putting up wind farms.

What's more, despite Eskom's struggle to meet demand, it's not doing much to encourage private sector electricity generators – the last power purchase agreement Eskom signed was in 1976 when Cahora Bassa came on stream!

Instead of encouraging independent power producers, and reducing the burden on already overstretched citizens, Eskom demands reams of regulatory red tape for producers to register, and so secure take-off agreements essential to secure investment. One only needs to consider the sugar industry, which has been looking into co-generating power at sugar mills for years, but has never been able to get the right price.

Finally, we need to reconsider the idea that coal-fuelled electricity is cheap. Considering the vast and mostly irreparable ecological damage coal mining inflicts on our sensitive water catchment areas, as well as the direct pollution of water sources, combined with the choking air pollution from burning coal, it doesn't seem so cheap to me. But as long as Mother Nature is forced to pick up the bill, Jacob Maroga will no doubt persist with the idea that our coal-fuelled electricity is some of the cheapest in the world. |fw

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