

# **Quick and Dirty - But Not Cheap:**

South Africa's Minerals-Energy Complex

*by*

*Gausdal, L and Sharife, K*

## **Introduction**

In late November South Africa (Durban) will host world governments committed to tackling the problem of climate change at the 17<sup>th</sup> annual Conference of the Parties (COP17). COP17 falls under the umbrella of the United Nations Convention on Climate Change (UNFCCC), a convention that emerged from the Earth Summit held in Rio de Janeiro, Brazil, in 1992.

Governments that ratified the convention – presently over 190 signatories, are known as the 'Parties' and meet annually at the COP.

The spirit of the UNFCCC is underpinned by two principles: i) common but differentiated responsibilities and respective capabilities, and ii) polluter pays. The question at the heart of the COP17 meeting is greenhouse gas (GHG) emissions reductions. The UNFCCC's Kyoto Protocol, finalised in Japan (1997) legally binds 37 industrialised nations (known as Annex 1 countries) to cut emissions, while developing nations like South Africa are excluded.

But even as South Africa talks the green talk, actions prove otherwise evidenced in the construction of the third- and fourth-largest coal-fired power plants in the world (Kusile and Medupi) for the benefit of large mining houses such as BHP Billiton, accessing what is claimed to be the cheapest electricity in the world thanks to four decade-long apartheid-era negotiated 'discount' deals.

As this article unpacks, at the cost of R125 billion, Medupi alone - pegged to generate 4800MW - is estimated to emit more than 30 million tonnes of carbon dioxide per year, places

it ahead of 115 countries globally, once operation begins in 2012. Ironically, the Uppington solar plant – forecast to produce 5000MW of solar energy, has been slated as a ‘private sector’ project (NPR 2010).

Beyond emissions, the nation faces a crisis arguably more immediate than climate change: acid mine drainage (AMD) – the ‘by-product’ of the country’s colonial and apartheid-era history rooted in exploitation of lucrative finite resources, such as gold, uranium and coal. Not only does AMD, constituting about 88% of waste generated in SA, threaten to contaminate scarce water resources in a country where the water crisis is not looming, but already present; but it simultaneously catalyses ecosystem destruction and the externalisation of the true costs of the ‘world’s cheapest electricity’ – coal.

Though the costs of mitigating water pollution has been pegged at R360 billion over the next 15 years by one specialist report unpacked below, the real costs – to the ecosystem (including land, air, water resources), citizen, and labour health and safety; and commercial ventures such as agriculture, is incalculable. Despite these profound realities, and others – such as overestimated coal reserves, the government has embarked on a programme of continuing South Africa’s uneven development, rooted in the apartheid-era formulated ‘minerals-energy complex’ (MEC) via the seven-year long R440 billion coal-expansion programme – and this, in the name of the people.

### **Unpacking Acid Mine Drainage**

Johannesburg is known as ‘eGoli’ or the City of Gold – named for the mines that have yielded some 45,000 tonnes of the precious metal from porous dolomite over the past 125 years. But the gold rush along the 75km ‘ridge of white waters’, or Witwatersrand, around Johannesburg has bequeathed a grim legacy: AMD, formed from water that has interacted with iron ore in

mine voids, or underground water systems. It is characterised by extreme acidity and is contaminated with a high concentration of salts, sulphates and heavy metals. Already, 40 million litres of highly corrosive, toxic and radioactive AMD have seeped into the local ecosystem, threatening communities that depend on groundwater and raising important questions about government or corporate negligence.

Acid mine drainage (AMD) has been described as the single most dangerous threat to South Africa's environment, after climate change. So, when Rand Uranium<sup>i</sup> CEO John Munro claimed that the seriousness of acid mine drainage (AMD) which had been recognized long ago, required faster 'acting on the ground' both the South African government and environmental NGOs like Earthlife Africa, may have breathed a sigh of relief.

Until Munro's following sentence: "spending all our time finding culprits may well be a waste of resources. They simply could not have created this problem. As a result, burdening these new companies with the sins of the past is simply unsustainable. These companies will collapse. So not only will we not have a solution, we won't have mining in the Central, Western and Eastern Basins. So we lose a whole lot of jobs and we believe that is not the right way to go." The question of whether the mining industry – a socially, politically and environmentally lethal 'development' vehicle, justifies highly pollutive activities under the job bracket is questionable.

Cumulatively, the mining industry generated over 500 000 jobs in 2010. Minister of Economic Development Ebrahim Patel's keynote address at the May 2010 Green Economy Summit acknowledged: There is now broad acceptance that 150 years of industrialisation that started in Europe, based mainly on fossil driven energy, has impacted on the climate and environment in very profound ways." (Patel 2010) The future could be different, he predicted, for if South Africa was able to capture two per cent of the estimated global green economy *in*

*the next five years*, “we can expect to create up to 400 000 jobs in energy, manufacturing, agriculture, mining and services”. (Patel 2010)

“Addressing acid mine drainage will be expensive, but as long as most of the mining houses are still raking in billions of rands in profits every year, how can anybody argue that ‘we‘ cannot afford to fix the problem?” argues Stephanie de Villiers, co-author of the Africa Earth Observatory Network report ‘H2O-CO2 Energy Equations for SA’. “The argument that the mining houses of today should not be held responsible for the problems created by their predecessors over a long period of time holds water with me only up to a point.”

Even the Council for Scientific Research and Industrial Research (CSIR) stated, “The major sources of AMD include drainage from underground mine shafts, runoff and discharge from open pits and mine waste dumps, tailings and ore stockpiles, which make up nearly 88% of all waste produced in South Africa.”

Dr Anthony Turton, a water expert formerly with the CSIR, stated in a parliamentary briefing (2008) that “South Africa has lost its dilution capacity, so all pollutants and effluent streams will increasingly need to be treated to ever higher standards before being discharged into communal waters or deposited in landfills...It has taken major engineering and technology to mobilize the water needed to sustain these industrial and urban conurbations. It now means that effluent return flow out of these major industrial and urban conurbations is a major threat to future economic development, simply because the quality of the water is so degraded that it becomes unfit for human and industrial consumption.”

Turton would later be suspended by the CSIR for depicting “inappropriate visual material” and “poor demonstration of links between cause and effect - for example the depiction of an unfortunate child with birth defects in several pictures, the statement that she lived in an area

affected by mining waste, and making strong inference from a single data point.” (CSIR 2008).

In his capacity as a CSIR representative, he argued that the science of ‘science’ of South Africa’s mining industry was, “embedded in this legacy (violence and the disrespect of human rights that still lives with us today)” whether acknowledged or not, citing three consequences:

- “The propensity to resort to mass violence when expectations exceed the capacity of the government to deliver, with water already a political issue;”
- “The legacy that has left a country with no coherent sense of nationhood, prone to popular rhetoric that reflects crudely defined racial stereotypes, a manifestation of which is a majority of citizens who are mired in endemic poverty, with little prospect of escaping that trap, without massive government planning and support”;
- “The systematic erosion of investor confidence, punctuated by bouts of extreme violence such as the recent xenophobic attacks (see Image 1b), which cause great harm to the perception of the international financial community that South Africa is a viable destination for foreign direct investment.”

Thus, the adage that Johannesburg’s streets were ‘lined with gold’ has taken on a new and more ominous meaning. The threat from the bright yellowish precipitate produced by AMD when ‘fool’s gold’, or iron pyrite, is exposed to oxygen and water, emanates from various mining areas in the Witwatersrand including the West, Central and East Rand basins. In August 2002, the West Rand basin began decanting acid water from underground mines, spilling into interconnected mining cavities and tunnels and, in some areas, rising above ground.

Described as the single greatest threat to South Africa's water-scarce environment, AMD has reached the Cradle of Humankind world heritage site west of Johannesburg and, without pumping, it could decant along the city's southern boundary in just over a year.

### **Energy – but at what cost, and for whom?**

In late February, the department of water affairs (DWA) finally released the results of an expert report to assess the threat posed by AMD, which urged that pumping and treatment of mine water should be implemented in the Western, Central and Eastern basins “as a matter of urgency”. In his budget speech this year, Finance Minister Pravin Gordhan allocated a provisional amount of R225m (US\$32.4m) to the DWA, while the overall cost of mitigation measures to prevent AMD breaking through the environmentally critical threshold of 150m below ground is estimated at R1.2bn. Of this, R441.6m would be required for capital expenditure, R121.5m for annual operating costs and R626m for long-term prevention, according to government estimates. In addition, there is a dispute over the extent to which mining houses should be held accountable for the hidden costs associated with mining, including AMD.

But the problem was a long time in the making. “The projection that the West Rand basin would decant was done in 1996,” says hydrologist Garfield Krige, a former water technologist for mining company JCI who formed part of the environmental team that did the work. “Apart from having meeting after meeting and discussing the issues around the AMD, nothing in reality has been done since 1996.”

According to Krige, this inaction has enabled many of the original mining houses responsible for producing the mine voids to sell or transfer their assets and liabilities to other owners.

“This allowed for them to get out of the problem,” he said, citing the example of the Grootvlei mine.

Specialists interviewed by the authors revealed that decants of the Eastern basin, estimated to release 82m litres per day in three years if pumping ceases, depend on whether water is drained from the Grootvlei mine, due to the interlinked nature of underground mine voids.

According to the government report, recent rainfall in the Eastern basin had boosted the rate of rise to around 0.4m per day (about seven times the rate during drier conditions). “At the prevailing rate, mine water can flood the pump station in as little as 16 days unless the Grootvlei mine seriously increases pumping output.” According to Andre Botha from Agri South Africa (AgriSA), an agricultural trade association in South Africa representing over 70,000 commercial farmers, AMD would not only impact the best agricultural land but also eco-tourism (BusinessLive 2011). Botha also cited the case of Grootvlei mine, whose chief executive Khulubuse Zuma is a nephew of South Africa’s president. (The mine is also known as ‘Mandela’s mine’ for its connection to Zondwa Mandela, a grandson of Nelson Mandela.)

“Contamination is already occurring in the Krugersdorp-Boksburg stretch,” Botha told the authors. “They stopped pumping the water at the Grootvlei mine, which then seeps through, contaminating the groundwater. This is the same water used by vegetable farmers for irrigation.”

“In this case, and more broadly, unfortunately, some of the mines are connected directly or indirectly to ANC cadres or even the party itself. This brings us back to the chicken and egg situation as the policing function should be done by the state,” he added.

But Mike Muller, a former director general of the Department of Water Affairs and Forestry (1997-2005), disagrees. “While decants of water from old mines will affect water quality in Gauteng, they are only one of many sources of pollution,” he said.

Muller was more forthright on the subject of mines that have reached the end of their lives but cannot be closed down because of environmental liabilities. He cited the example of DRD Gold, saying that DRD’s submissions to the Security Exchange Commission in New York “disclosed substantial financial liabilities and warned that environmental issues related to water management were perhaps the single biggest liability facing the company”.

DRD recently declared profits of over R100m, chiefly attributed to the company’s sale of old mining rights that would include its environmental liabilities. Company spokesman James Duncan from the PR firm Russell and Associates avoided direct questions on AMD, referring instead to a company brief entitled ‘AMD: The legal, moral and commercial balancing act’. This disclosed that DRD mined 978,000 tonnes in the area, constituting 0.5% of the total number of tonnes mined underground and less than 5% during the operating time of the mines in question. When asked whether DRD was aware, prior to acquisition, of the environmental liabilities including that of AMD, the PR firm’s Duncan said that he did not understand the question.

“For us, ownership of the rights is not the issue. The issue is how much of the exposed waste the company is accountable for. After careful calculations we arrived at a figure of 1.5%.”

Duncan refused to confirm or deny whether DRD had acquired underground mining rights making it liable for water flowing from the mine. “For us, it is not relevant to the issue of acid mine drainage for which the company is accountable,” he said



Initially, the government claimed that DRD was responsible for 44% of the treatment cost in the Western basin area, which began decanting in 2002. DRD maintained otherwise. Like Rand Uranium, DRD challenged the government directive on the issue, claiming it had been withdrawn completely in 2009.

### **Polluters play, victims pay?**

Companies like Rand's Munro strongly advocate for 'an economically viable business model' that would transform AMD into tap water that could be sold.

"The business can attract external funding and that has been demonstrated by the Western Utilities Corporation (WUC) feasibility work undertaken.

"So, if we can attract independent capital to this problem, make it an attractive business for them, there needn't be reliance on the state or mining companies."

According to hydrologist Krige, government directives kept changing the upper limits of the pollutants allowed to flow into the environment "until it was almost not necessary to treat the water in order to comply with the directive," he told the authors.

Meanwhile, those charged with investigating the problem may indeed benefit from its solution. In August 2005, Harmony Gold Mines (Randfontein Estates) and gold/uranium tailings recovery company Mintails formed the WUC to manage the responsibilities of the Western Basin Environmental Corporation (WBEC).

WUC is listed on the AIM board of the London Stock Exchange as Watermark Global plc, but according to Turton, its ownership is "clouded in mystery" as it is a reverse listing. "As far as can be ascertained," says Turton, "the main owners are the very mines who seek what is

known as ‘closure certificates’ (...) which will exonerate the owners from all environmental liabilities.”

Turton says that the WUC deal will also give the mine owners a guaranteed 16% return on their investment, “So, not only will the mines evade the legal requirement of the ‘polluter pays’ principle (...) but they will actually profit from that evasion.”

WUC and Watermark Global have yet to release an environmental impact report, produced at an estimated cost of R60m, which digitises hundreds of maps and collated research on the decant forecast to occur in the Central basin sometime between 2012 and 2013. In addition, a DWA document seen by the authors details plans by WUC to offset the costs of possible remediation via a 75 mega-litre treatment plant to convert AMD into potable water. This will be sold on to some 11 million consumers via a company called Rand Water.

One expert told the authors that the process – an alkaline-barium-calcium purification process developed by the Council for Scientific and Industrial Research (CSIR) – was the “least-cost option”, and another stated that it would have produced industrial or grey water as opposed to clean water. The first phase of the project could have been completed by December 2010 but the inter-ministerial committee co-chaired by former Department of Mineral Resources minister Buyelwa Sonjica, vetoed the ‘polluters profit’ plan.

DWA spokesman Sputnik Ratau said he could not offer comment on the WUC proposal but that government would engage with all stakeholders including mining companies on the question of AMD. “When it comes to the issue of accountability on the part of mines, government will neither exonerate nor attack them. We must remember that this is the legacy of 120 years of mining and it will not be an overnight solution. It is a work in progress,” he said.

Not all groups are happy with the process used to create the task team or carry out investigations. Judith Taylor of environmental watchdog NGO Earthlife Africa says “the Department of Mineral Resources does not work with the DWA or Department of Environmental Affairs. There is no coordination or integration. Companies are basically allowed to self-regulate as there is nobody checking up. The task team itself was created very much as a ‘behind-closed-doors’ affair.”

Other environment-focused groups such as the Africa Earth Observatory Network (AEON) question the costs involved. AEON’s report ‘H2O-CO2 Energy Equations for SA’ calculated that water treatment and desalination plants to handle water pollution would cost R360bn over 15 years.

“My problem is that there is legislation in South Africa that requires mines to ensure they rehabilitate water, to prevent or mitigate any contamination,” says AgriSA’s Andre Botha.

“We know that South Africa is a water-scarce land and if we allow for contamination of our groundwater resources, we are heading for serious trouble.”

South Africa, one of the world’s most water-scarce countries, receives an annual run-off of just 40mm (from a global average of 266mm) and 98.5% of the country’s land mass is classified as arid. Water demand is expected to exceed availability by 33% in 2025 while 10 of the country’s 19 water management areas are already experiencing water shortages.

Meanwhile, the primary causes of AMD – finite capital-intensive extractive industries structured around exploitation of coal and gold, for instance, is also on the decline.

Should such costs of mitigation, budgeted by the South African government at a cost of R1.2 billion should be classified as ‘ecological reparations’ when contextualising the activities of major mining companies (chiefly entities like Anglo-American) over a period of 120 years,

notably during apartheid? Moreover, should the activities be allowed to continue as an industry?

### **SA's Black gold dependency – and decline?**

Recent studies by respected scholars such as Chris Hartnady, a former geology professor at the University of Cape Town, revealed that pollution and environmental degradation far outweigh the value of remaining resources (such as gold, which is ninety-five per cent exhausted)

“Given the energy and environmental problems associated with ongoing ground water control, water-resource contamination by acid mine drainage and the possibility of widespread mercury and other factors of pollution caused by illicit underground ore-processing by the *zama-zamas* (illegal miners), the glory days of South African gold mining appear to have arrived finally at an ignominious end.” (Hartnady 2009)

The United States Geological Survey cites existing South African gold reserves at just 6 000 tonnes, some 30 000 tonnes less than South Africa's own estimates, which would be forty per cent of the global total (Umvoto Africa, 2009). Much like the potentially overinflated estimates of gold, the justification behind Eskom's R440 billion expansion plan, largely structured around coal, operates on the premise that coal reserves, estimated at 30 billion tonnes (downsized by the Department of Minerals and Energy during 2003–2004 from 50 billion tonnes) will last for 200 years, vindicating the initiative's drastic expense on the public purse (Mail & Guardian, 2010).

A report published in the SA Journal of Science, estimates that coal, currently generating as much as ninety per cent of South Africa's electricity, may in fact be capped at 15 billion

tonnes and would become increasingly difficult to excavate four decades from now, with coal production peaking at 285 million tonnes in 2020.

The financial burden of AMD mitigation, extending far into the future, is similar to that of Eskom's new coal expansion plan, which will generate yet more AMD and place severe strains on crucial catchment systems. Bobby Peek of groundWork (the leading anti-pollution NGO) stated: 'The environmental and social cost of this development will impact on all South Africans as three major water catchments. The Limpopo, Vaal and Senque (Orange) Rivers are all going to have their water diverted for Medupi and future power stations' (groundWork and Earthlife Africa 2010). Companies like Rand Uranium paid just 1% for use of water, despite mining houses causing over 70% of water pollution – and AMD, constituting almost 90% of waste generated.

'Certain expert assessments by the Environmental Protection Agency in 1987 concluded that "problems related to mining waste may be rated as second only to global warming and stratospheric ozone depletion in terms of ecological risk. The release to the environment of mining waste can result in profound, generally irreversible destruction of ecosystems". In many cases the polluted sites may never be fully restored, for pollution is so persistent that there is no available remedy (EEB, 2000).' (Department of Environment and Tourism 2008)

South Africa's current capacity, inclusive of industry and consumers, is 36 000 MW. In the context of the extreme historical damage by the minerals-energy complex to South African air and water quality, Eskom's dramatic expansion of coal-fired electricity generation in coming years is breathtaking. Globally, coal is the preferred source of electricity-generating fuel, supplying forty per cent of energy. A recent study by Paul Epstein of Harvard Medical School's Center for Health and the Global Environment revealed that the public health and economic burdens of coal are US\$500 billion annually, including mercury and greenhouse gas

emissions, toxic spills, land and agricultural damage, and respiratory diseases. (Schwartz 2011)

It is sometimes claimed that the emissions damage of coal-fired plants can be mitigated by carbon capture and storage (CCS) systems and, moreover, the World Bank claims that Eskom's Medupi plant will be the first power station in Africa to use supercritical clean coal technology, reducing emissions by five per cent. Paradoxically, Eskom's managing director, Steve Lennon, confirming the utilisation of use of CCS technology, disclosed that 'one of the plants we are building is CCS ready ... [but] to be quite frank no one really knows what that is at the moment'. CCS technology could reduce Medupi's real output to a capacity of 3600 MW (groundWork 2010). Moreover, despite the supercritical cooling system, approximately ten per cent of the cost of Medupi will come from water transfers for traditional cooling.

The cooling of Eskom's coal-fired stations, especially in Mpumalanga, makes the power company South Africa's single largest water customer. Projections for future coal-cooling water requirements suggest that new dams will be needed more rapidly within the Lesotho Water Highlands Project (LWHP), Africa's largest dam network and the world's second largest water transfer scheme. Formulated by the apartheid regime and the World Bank, and characterised by notorious corruption, socio-environmental impacts and sanctions busting, the LWHP's collaborators included the compliant regime in Lesotho installed by Pretoria during the 1980s, as well as a number of multinationals that would later be prosecuted for corruption and bribery.

While LWHP was opposed by the African National Congress (ANC) during the apartheid era, it was subsequently endorsed by Kader Asmal, the first post-apartheid water minister. The planned power plants will continue providing the world's cheapest electricity to the world's largest mining and metals houses, for some of Africa's most capital-intensive and export-

oriented smelters. Medupi will be the world's fourth largest coal plant, and is pegged to generate 4 800 MW of electricity after it begins operations in 2012. Emissions of around 30 million tonnes of carbon dioxide per year will put this plant ahead of the annual emissions of 115 countries. There are thirteen other coal-fired stations in South Africa, and the next one, Kusile, will be even larger.

### **Cool capital, hot and dirty planet**

The government's struggle to finance the R125 billion Medupi project is ironic, given that the government's Upington solar project, valued at R150 billion, is seeking funds largely from private investors, and when built is anticipated to supply 5 000 MW of electricity (NPR, 2010). Eskom plans to invest R440 billion in new plants over the next seven years<sup>ii</sup>, for which funding has begun to flow from international institutions.

Emblematic was a US\$3.75 billion loan from the World Bank in April 2010, and in an opinion editorial published by the Washington Post, just prior to the Bank shareholders' vote on Medupi, the South African minister of Finance, Pravin Gordhan, justified the expansion based on 'strong new demand for electricity from millions of previously marginalised South Africans ... now on the grid' (Gordhan, 2010). He did not mention that paying for Medupi will require a 127 per cent real price increase from 2007 to 2012 for South African household electricity consumers. With prices soaring, many more residents were being disconnected, and of Eskom's four million customers, one third registered zero electricity consumption.

Many had reconnected illegally and, as Eskom and the municipality clamped down, the result was more social strife in a country with what is probably the world's highest rate of community protest over a five-year period.

As noted, the source areas of the coal for Medupi are highly contaminated by mercury and acid-mine drainage, with air, land, vegetables, animals and people's health at much greater risk. Forty new coal mines in impoverished areas of Limpopo and Mpumalanga provinces will be opened to provide inputs to Medupi and its successor, Kusile. This will create a few coal sector jobs (hence receiving endorsement from the National Union of Mineworkers), but a great many jobs in agriculture and tourism will be lost as a result of the invasive mining activity and downstream degradation. Medupi itself will be built in a water-scarce area where communities are already confronting extreme mining pollution and, even though an air-cooled model (Africa's first) was chosen, the cost of supplying an additional water-cooling supply amounted to hundreds of millions of dollars, given the long transport and pumping costs.

Once the coal is burned and electricity generated, the winners and losers become even more divergent. Medupi's main beneficiaries will be the world's largest metals and mining corporations, especially BHP Billiton (Melbourne based) and various Anglo-American subsidiaries (most reporting to London), which already receive the world's cheapest electricity thanks to multi-decade deals. Anger soon grew about the huge discounts made when secret, forty-year 'special pricing agreements' were offered by Eskom during late apartheid, when the firm had a third too much excess capacity owing to the long South African economic decline.

These agreements were finally leaked in March 2010, and disclosed that BHP Billiton and Anglo were receiving the world's cheapest electricity, at less than \$0.02/kWh (whereas the overall corporate price was around \$0.05/kWh, still the world's cheapest, and the consumer price was around \$0.10/kWh). In early April, just before the World Bank decision, Eskom announced that a small modification was made to BHP Billiton's contract price but it was reportedly to the firm's 'advantage'. Finally, however, the Australian-based mining house was



sufficiently intimidated by the glare of publicity that, in October 2010, Deutsche Bank mining analysts predicted BHP would dispose of Richards Bay assets. Business Day believed that: ‘The reason for selling the aluminium smelters would be the scrutiny under which BHP’s electricity contracts have come amid demands for resource companies to use less power’ (Business Day, 2010b).

An additional problem with BHP and Anglo as beneficiaries is the outflow of profits to Melbourne and London, at a time when South Africa’s current account deficit made it the world’s most risky middle-income country, claimed The Economist (25 February 2009). Moreover, South Africa had an existing US\$75 billion foreign debt, which would be escalated by five per cent with the World Bank loan. The 1994 foreign debt was just US\$25 billion, and First National Bank projected that the ratio of foreign debt to GDP would by 2011 rise to the same level as was reached in 1985, when a debt crisis compelled a default (on US\$13 billion), a signal that business and banking were finally breaking ranks with the apartheid regime.

Another controversial aspect of the loan was the World Bank’s articulation of the privatisation agenda. The confirmation that Eskom would offer private generating capacity to independent power producers was established in loan documentation, in relation to the renewable component, advancing Eskom’s desire to privatise thirty per cent of generating capacity (including a forty-nine per cent private share in Kusile, although no private interest had been expressed for Medupi). This component attracted explicit opposition from trade unions – especially the National Union of Metalworkers of South Africa (Numsa) – and consumers.

Corruption was another feature that generated criticisms of the World Bank by South African opposition political parties (especially the centre-left Independent Democrats and the liberal Democratic Alliance, which subsequently merged) and the influential liberal Business Day newspaper. These organisations opposed the loan because, contrary to supposed World Bank

anti-corruption policies, it will directly fund ruling party coffers. Medupi will be built with Hitachi boilers that in turn kick back between \$10 and \$100 million (the amount is still unclear) thanks to an ANC investment in Hitachi. As the Eskom-Hitachi deal was signed, Eskom chairperson Valli Moosa was also a member of the ANC's finance committee. A government investigation released in March 2010 found his conduct in this conflict of interest to be 'improper'.

The ANC promised to sell the investment stake, but this dragged on for several months. Finally, in May 2010, Chancellor House managing director Mamatho Netsianda relayed by text message to the media: "The official position is that Chancellor House Holdings is not selling its stake in Hitachi Power Africa" (SAPA, 2010). Ironically, in February 2010, the World Bank had issued a major statement at the same time as its annual African Development Indicators, entitled 'Quiet Corruption', in which it blamed African teachers and healthcare workers for moonlighting (a result of World Bank structural adjustment policies).

As in the case of the Bisasar Road's carbon trading project, classified as a CDM (Clean Development Mechanism), the matter of historic racial injustice should not be ignored. The World Bank's financing of apartheid began just three years after the 1948 election of the Afrikaners' National Party, lasting until 1967, and including \$100 million for Eskom. During that period, the Bank financed the supply of electricity to no black households (which only began receiving electricity in 1980), and instead empowered only white businesses and residences (Bond, 2003).

Curiously, Gordhan has argued that "South Africa, in sixteen years of democracy, never has had to take any loans from the World Bank ... This is an opportunity for the World Bank to build a relationship with South Africa" (Gordhan, 2010), yet the Bank's 1999 and 2008 Country Assistance Strategy documents show conclusively that Medupi is the fifteenth credit

since 1994. As for ‘building a relationship’, Gordhan also neglected to mention that the Bank co-authored the 1996 Growth, Employment and Redistribution (Gear) (homegrown structural adjustment) programme, whose orthodox strategies failed and which led South Africa to overtake Brazil as the world’s most unequal major country, as black incomes fell below 1994 levels and white incomes grew by twenty-four per cent within fifteen years, as was claimed by official statistics. Still, the World Bank was the obvious financing choice for Medupi, because even though it has embedded itself deeply within the climate-change discourse, over eighty per cent of the Bank’s oil-related Third World projects are geared for export to the North.

Since Kyoto, the Bank has invested in more than 128 fossil-fuel projects, with an increase of 256 per cent for coal and coal-related project during 2007–2008 alone. Nor do the industrialised economies whose governments run the Bank, and which are on the receiving end of cheap benefits from foreign-owned multinationals, care to consider socio-economic and environmental externalities. The Bank’s role in climate-change financing has been aggressively promoted by its president, Robert Zoellick, whose track record on financing, environment and the US military-industrial complex is, simply, shocking (Bond and Dorsey, 2010).

Each year, the world’s governments (mainly in the North) supply over \$700 billion in fossil-fuel subsidies, including through the World Bank, the African Development Bank and others of their ilk. In contrast, by 2009, almost two decades after the non-binding United Nations Framework Convention on Climate Change was adopted at the Rio Earth Summit, Northern governments channelled a mere \$3 billion in climate mitigation and adaptation funding to the Third World. The fossil-fuel subsidies that do trickle down into Southern elite pockets are often siphoned out to offshore financial centres.

Since the early 1960s, Nigeria's political and military elites have engaged in over \$400 billion of capital flight (UNODC, 2011). Overall, more than sixty per cent of Africa's illicit capital flight is siphoned by multinationals through corporate mispricing, much of which is related to oil, gas and other mineral resources (Sharife, 2010). Ironically, more than half of the small islands on the frontline of climate change are economies 'outsourced' as tax havens (Sharife, 2010c). In South Africa, meanwhile, capital flight has been estimated in 2007 as high as twenty-three per cent of GDP, amounting to R450 billion in 2007 (Business Day, 2010a).

This is a continuation of capital flight during the apartheid era, which has been projected at seven per cent of national GDP, smaller in part because of a more 'patriotic' minerals-energy complex elite and the existence of exchange controls from 1985 to 1995. For South Africa, then as now, exploitation of resources therefore constitutes a double edged form of economic theft. And it raises the question of how to gain compensation for the enormous damage done by the minerals-energy complex, beyond even the extreme crisis presented by acid mine drainage.

### **Conclusion:**

First, there was Cecil Rhodes – and colonialism, followed by 'randlords' such as the Oppenheimers, apartheid-era 'capitalists' such as George Albu – founder of Genmin (now, BHP Billiton), and finally, those behind – and fronting, the new, politically correct, elite - ranging from Patrick Motsepe to the Guptas. For over a century, the trajectory of oppression in South Africa has been interlocked with pollution, profit and politics – of the worst kind. Revolving doors abound between politicians and financiers, state and capital; with leading politicians and bureaucrats such as Keys (BHP Billiton chief executive after 1994), Mick Davis (formerly Eskom treasurer when early 1990s' special pricing agreements were made and then Billiton chief operating officer), Xolani Mkhwanazi (first post-apartheid chief

executive of the National Electricity Regulator of SA, then chair of BHP Billiton Southern Africa), and Vincent Maphai (leading state research official in the Mbeki camp, then chair of BHP Billiton Southern Africa). While corporations, accessing the ‘cheapest energy in the world’ – including former and current owners, must be held liable for the costs of mitigation and mine closure, as well as inclusion rather than externalisation of the real costs of coal, gold and other forms of mining, the real onus falls on the government as democratically elected office-bearers, responsible for the public good and equitable management of national resources. In this case, the socio-ecological and financial costs of South Africa’s ‘energy roadmap’ to the future, located firmly within the minerals-energy complex, must be dismantled – rather than reformed, and replaced with a financially and socio-ecologically ‘clean’ solutions.

---

<sup>i</sup> Founded in 2008, Rand Uranium – with a mandate to exploit 100mlbs superior grade uranium resources (see: [http://www.randuranium.co.za/pdfs/presentations/indaba\\_03022010.pdf](http://www.randuranium.co.za/pdfs/presentations/indaba_03022010.pdf)), is considered one of the more responsible companies operating in the area. The company lists expenses as follows: 1% royalties, 52% payroll, 1% water, 15% electricity, contractors 9% and consumables 22% (see: [http://www.financialresults.co.za/2011/harmony\\_ar2011/ar-fin-dir-review02.php](http://www.financialresults.co.za/2011/harmony_ar2011/ar-fin-dir-review02.php))

## **References:**

Africa Earth Observatory Network (2010) ‘H2O–CO2: Energy equations for South Africa’ 22 November <http://www.aeon.uct.ac.za/content/pdf/annualreps/2010-Energy%20Report%20series%202%202010%20LoRes.pdf> (accessed 21 February 2011).

Bond P (2003) *Against Global Apartheid: South Africa meets the World Bank, IMF and International Finance*. London and Cape Town: Zed and UCT Press.

Bond P and M Dorsey (2010) Anatomies of environmental knowledge and resistance, *Australian Journal of Political Economy*, 66, Dec, pg. 286–316.

Botha, A (2011) Interview with Khadija Sharife for *The Africa Report*

---

Business Day (2010a) Answers needed on bank's policy by stealth, 10 August.  
<http://www.businessday.co.za/articles/Content.aspx?id=117524> (accessed 21 February 2011).

Business Day (2010b) Assets may be on block in BHP Billiton's bid to buy potash, 25 August. <http://allafrica.com/stories/201010250137.html> (accessed 8 March 2011).

BusinessLive (2011) Acid mine drainage part of a bigger problem, 16 February.  
<http://www.businesslive.co.za/incoming/2011/02/16/acid-mine-drainage-part-of-bigger-problem> (accessed 21 February 2011).

CSIR (2009) 'Acid Mine Drainage in South Africa', Briefing Note 2009/02 August 2009

Department of Environmental Affairs and Tourism (2008), 'Emerging Issues Paper: Mine Water Pollution' by Dr Susan Oelofse.

De Villiers S (2011) E-mail interview with K Sharife for The Africa Report.

groundWork and Earthlife Africa (2010) Press release: World Bank's Climate and Governance Disaster, 10 April.

Gordhan P (2010) Why coal is the best way to power South Africa's growth.  
<http://www.washingtonpost.com/wp-dyn/content/article/2010/03/21/AR2010032101711.html> (accessed 21 February 2011).

Government of the Republic of South Africa (2010) National Climate Change Response Green Paper.  
<http://www.climateresponse.co.za/home/gp/1>.

Green Economic Summit (2010) 'SA Green Economy Summit' 18-20 May.  
<http://www.sagreeneconomysummit.co.za/2about.html> (accessed 11 February 2011).

Hartnady C (2009) South Africa's gold production and reserves. *S. Afr. j. sci.*, Pretoria, v. 105, n. 9–10, October 2009. Available from [http://www.scielo.org.za/scielo.php?script=sci\\_arttext&pid=S0038-23532009000500004&lng=en&nrm=iso](http://www.scielo.org.za/scielo.php?script=sci_arttext&pid=S0038-23532009000500004&lng=en&nrm=iso).

Krige, G (2011) Interview with Khadija Sharife for The Africa Report

Mail & Guardian (2010) SA is nearing peak coal, say scientists, 25 September. 1  
<http://www.mg.co.za/article/2010-09-25-sa-is-nearing-peak-coal-say-scientists/> (accessed 21 February 2011).

Patel E (2010) Keynote address by minister of Economic Development, the Green Economy Summit, Johannesburg, 20 May. <http://www.info.gov.za/speech/DynamicAction?pageid=461&sid=10977&tid=10994> (accessed 21 February 2011)

Reuters (2010) Fact Box: South Africa's power generation plans, 23 November.  
<http://www.necsa.co.za/Article/8afc4d91-b1f5-42d8-8e52-22811f361f00/6/Factboxsouth-africas-power-generation-plans.aspx> (accessed 21 February 2011).

SAPA (2010) ANC closes shop on Hitachi stake inquiries, 13 April. <http://allafrica.com/stories/201004130983.html> (accessed 30 May 2011).

Schwartz A (2011) Coal costs the US \$500 billion annually in Health, Economic, Environmental Impacts, 16 February. <http://www.fastcompany.com/1727949/coal-use-costs-half-a-trillion-dollars-each-year-in-health-economic-environmental-impacts?partner=rss> (accessed 21 February 2011).

Sharife K (2010a) Climate change's secret weapon, 24 February Web 21 February 2011  
[http://www.fpif.org/articles/climate\\_changes\\_secret\\_weapon](http://www.fpif.org/articles/climate_changes_secret_weapon).

---

Sharife K (2010c) The Flying Dutchman, 17 November Web 21 February 2011 <http://hir.harvard.edu/blog/khadija-sharife/sabmiller-flying-dutchman>.

Turton, A (2008), 'Three Strategic Water Quality Challenges that Parliamentarians Need to Know About' Parliamentary Briefing Document Report No. CSIR/NRE/WR/IR/2008/0079/CTurton, A (2011) Interview with K Sharife for The Africa Report

Umvoto Africa Company Announcement (2009) 'SA's gold reserves dip well below official estimates'. [http://www.miningweekly.com/attachment.php?aa\\_id=24543](http://www.miningweekly.com/attachment.php?aa_id=24543) (accessed 21 February 2011).

United Nation Office on Drugs and Crime (UNODC), Nigeria's corruption busters, 20 November. <http://www.unodc.org/unodc/en/frontpage/nigerias-corruption-busters.html> (accessed 21 February 2011).

Western Utilities Corporation (2010) Water Security Seminar, 26 March 2010. [http://www.h2o4life.co.za/pdf/26-03-2010\\_AMD.pdf](http://www.h2o4life.co.za/pdf/26-03-2010_AMD.pdf) (accessed 21 February 2011).

ii 'R160-billion from debt capital markets and R100-billion from development finance institutions and export credit agencies.' See: [http://www.mediaclubsouthafrica.com/index.php?option=com\\_content&view=article&id=2073:buildprogramme251110&catid=45:economynews&Itemid=114#ixzz1eSIOYZ4Y](http://www.mediaclubsouthafrica.com/index.php?option=com_content&view=article&id=2073:buildprogramme251110&catid=45:economynews&Itemid=114#ixzz1eSIOYZ4Y)