

THEORY AND PRACTICE IN CHALLENGING EXTRACTIVE-ORIENTED INFRASTRUCTURE IN SOUTH AFRICA

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ABSTRACT

A long period of capitalist crisis has amplified uneven and combined development in most aspects of political economy and political ecology in most parts of the world. With ongoing paralysis of United Nations climate negotiators, to illustrate, the most critical question for several decades to come is whether citizen activism can forestall further fossil fuel combustion. In many settings, the extractive industries are critical. Invoking such principles requires investigating the broader socio-ecological *and* economic costs and benefits of capital accumulation associated with fossil fuel use, through forceful questioning both by immediate victims and by all those concerned about GreenHouse Gas emissions. Their solidarity with each other is vital to nurture and to that end, the most powerful anti-corporate tactic developed so far, indeed beginning in South Africa during the anti-apartheid struggle, appears to be financial sanctions. The argumentation for invoking sanctions against the fossil fuel industry (and its enablers such as international shipping) is by itself insufficient; also required is a solid activist tradition. There are, in 2014, two inter-related cases in which South African environmental justice activists have critiqued multi-billion dollar investments and thus collided with the state, with two vast parastatal corporations and with their international financiers. Whether these collisions move beyond conflicting visions, and actually halt the fossil-intensive projects, is a matter that can only be worked out both through argumentation – e.g. in the pages below – and through gaining the solidarity required to halt the financing of climate change.

1. INTRODUCTION

Uneven and combined development is the process by which capital accumulation proceeds, in the first instance by centralizing capital in particular spaces, sectors and scales while disinvestment occurs elsewhere – and simultaneously through an exploitative relationship between capitalism and a variety of non-capitalist spheres. This article considers analyses, discourses, strategies and tactics emerging about two South African mega-projects worsening the economy's fossil-fuel dependence, socio-ecological degradation, and the country's 'Resource Curse.' The two largest mega-project cases now underway in SA are considered: first, a coal-fired power plant known as 'Medupi,' constructed for the parastatal electricity corporation Eskom's grid; and second, the transport parastatal corporation Transnet's expansion of the country's minerals-energy-petroleum-rail-pipeline-port complex, with a focus on the largest single site, Durban. The latter project is still in its early stages (2005-40), while Medupi's first generator is due for completion during 2015 following rather revealing delays of more than three years.

The two cases are closely related in functional terms, because they will exacerbate SA's so-far self-defeating reliance upon export-led minerals growth and manufactured imports. Although precise costing estimates are impossible at this stage, each entails large infusions of local and foreign financing (Medupi around \$10 billion, and Transnet's South Durban expansion as much as \$25 billion). Indeed in both cases, notwithstanding a sharp and potentially dangerous increase in SA sovereign foreign debt – from \$25 billion in 1994 to \$135 billion in 2013 – the two main parastatal corporations' recourse to substantial external funding was considered appropriate by their managers and by the national Treasury. In contrast, when

contemplating the foreign debt in 2009, Rand Merchant Bank² predicted SA would soon hit a repayment squeeze similar to 1985's historic debt crisis.³ It turned out that the ratios have risen more slowly, but the absolute value of foreign debt is likely to exceed \$140 billion by the time of the 20th anniversary of freedom in 2014.

The two projects have cemented the borrowers' relations with, respectively, the World Bank and the Chinese Development Bank. Further funding is anticipated via the Brazil, Russia, India, China and SA (BRICS) bloc, as a new BRICS Development Bank is established with an infrastructure mandate in 2014. In both cases, these financing arrangements are proving highly problematic: with Eskom because the World Bank's largest-ever loan was granted in spite of numerous eco-social, economic and governance shortcomings; and with Transnet because its main place-based expansion – the existing South Durban harbour and a new port 7 kilometers south – is hotly contested by local civil society. In both sites, the most important contradiction is longer-term and global in nature, namely the impact of the projects on climate change. Only in the latter project is the government beginning to recognize this threat, although not on the causality side, but instead as a reflection of the port's vulnerability to major storms and sea-level rise. Given the importance of innovative development finance within SA, the BRICS, the G20 and the multilateral institutions, and the way representatives of these different blocs have differed publicly over the structures, processes and protections associated with development finance, this is a good opportunity to assess the priorities of one of the world's highest-profile national governments.

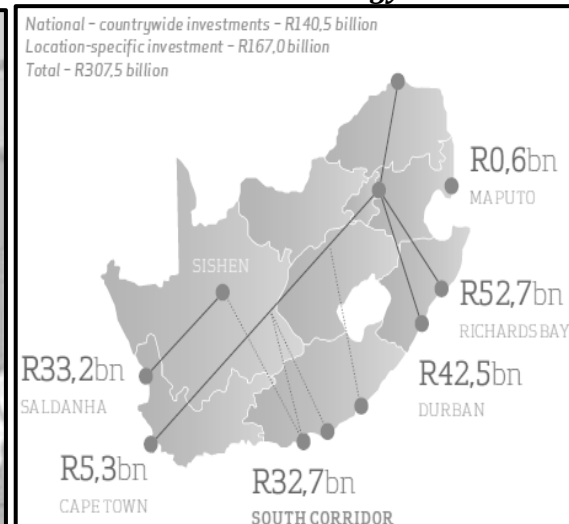
Much can be learned at the two sites:

- Medupi power plant.** In April 2010, the World Bank offered a \$3.75 billion multi-tranche credit to the SA government for its parastatal firm Eskom. The main purpose is construction of the Medupi power plant, but one of the conditions was increasing Public-Private Partnerships in associated activities, including solar power generation. The project also includes a 'fig-leaf' renewable energy project (according to one of the Bank's external reviewers in 2010),⁴ and it carries an absurd claim made by Bank president Jim Yong Kim in 2012 that Medupi is a 'clean coal' generator.⁵ The impact on climate change is immense, for Medupi is a 4764 MW power generating station (the world's third largest, once complete), and *two more in exactly the same style will follow*. The next plant, Kusile (4800 MW), is already under construction. Local communities, environmentalists (local and global) and workers have regularly contested Medupi. The Bank's Inspection Panel found six major shortcomings in a 2012 report, and further Bank investigations into Eskom in December 2013 also raised serious questions as to whether future tranches should continue.

Eskom's two newest coal-fired power plants



Transnet investment strategy



- **Transnet expansion.** In March 2013, the Chinese government lent \$5 billion to the SA parastatal Transnet mainly for the purpose of extending rail infrastructure further into the northern and eastern coal fields for subsequent coal exports mainly to India and China, as well as for general financing support that will include Durban harbour expansion, since such funding is essentially fungible. In addition to increasing the speed and magnitude of coal freight to the world's largest coal export terminal, at Richards Bay, Transnet has also been raising funds for an anticipated \$25 billion of new port and petrochemical investments in Durban, including a fully-privatised port management model at a brand new \$10 billion 'Dig Out Port'. This will complement the \$2.3 billion doubling of Transnet's Durban-Johannesburg oil pipeline capacity, which was commissioned at a third of that cost in 2007 and is due to be complete in 2014. Durban is also now a site of offshore oil prospecting, not far from the point where Africa's largest refinery complex stands in hyper-toxic South Durban. There near-universal community opposition has emerged to Transnet's plans, including on grounds of climate damage. Transnet's Environmental Impact Assessment (EIA) consultants made a contentious statement in 2013 that larger ships in the new port will result in lower emissions per container carried.

In both cases, local activists and a few journalistic and academic allies have disputed the 'clean' fiction, although it remains to be seen whether the financiers take these broader problems into consideration, or continue to treat them with mere lip-service. In one encouraging sign, the SA government's Department of Environmental Affairs decided in October 2013 that the Transnet EIA for the expansion of the old harbour's berths so as to take much larger post-panamax ships was unconvincing. The EIA was temporarily rejected in large part because of Transnet's climate denialism, as well as the port expansion's impact on bird and fish life. Secondly, the two projects confirm the need for disclosure, transparency, and participation. In both cases, there are substantial problems with the firms' *bona fides*, including Eskom's use of a private intelligence firm against critics, and Transnet's failure – along with the Durban municipality – to either provide necessary information about the Port expansion (such as notifying stakeholders as to its EIA problems), or engage in meaningful participation.

These features will be evident in the financing of Eskom/Medupi and Transnet/Durban fossil fuel and transport projects, in the next two sections, followed by a section that puts these mega-projects into the context of SA's 'Minerals-Energy Complex'. The concluding section notes the limitations of advocacy given the adverse power relationship that links the SA state and capital. But as was the case in the 1980s against apartheid, the weak link in this relationship between state and capital may well be the vulnerability of the two major firms promoting the mega-projects, Eskom and Transnet, to international financial sanctions.

2. ESKOM'S MEGA-POWERPLANT AT MEDUPI

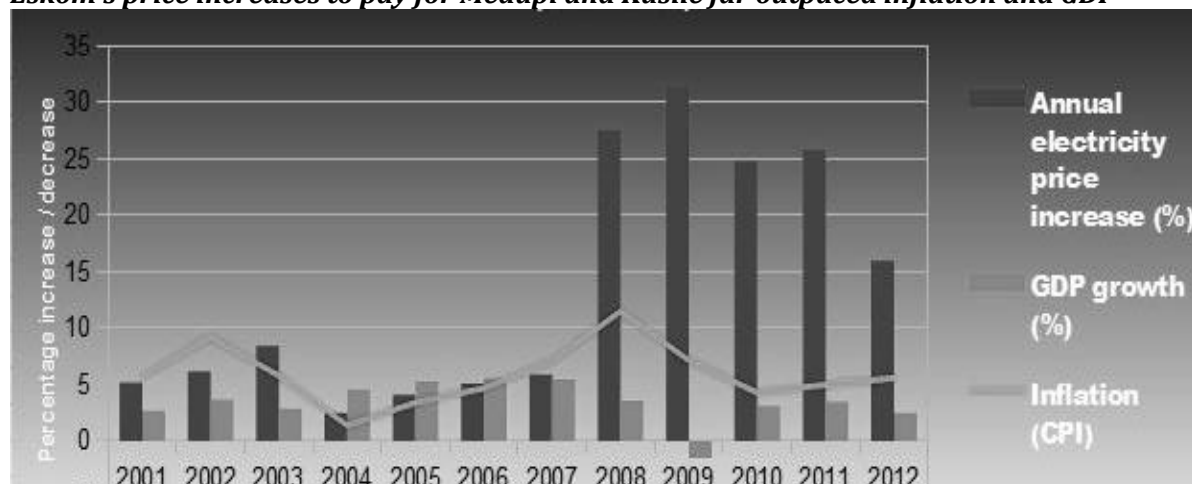
The most significant challenge to mega-project development finance in SA began in February 2010, when the South Durban Community Environmental Alliance (SDCEA) and the NGOs groundWork and Earthlife Africa launched a multi-faceted civil society campaign – unsuccessful in the short term – against the World Bank's largest-ever loan. On 8 April 2010, after nearly two months of strenuous activist lobbying against more fossil fuel credits, the Bank Board approved a \$3.75 billion loan to Eskom. Its main purpose (for which \$3.1 billion was allocated) was construction of Medupi, a power station that will pump 25–30 megatonnes of CO₂ into the atmosphere annually, more than the output of 115 countries. That loan was a last-minute request, as the 2008–09 global financial turmoil apparently dried up Eskom's potential private sector financing. In the period 2005–11, approximately 3.7 billion euro was lent to Eskom by 20 major banks (led by Credit Agricole, MPMorgan Chase and Deutsche Bank),⁶ but liquidity shortages compelled Eskom to seek out the World Bank in 2009.

As a result, there was not much time for more than 200 organisations across the world to generate a critique of the loan, in large part based on the obvious threat to world climate.⁷ South Durban activists launched the local public campaign with a spirited protest at Eskom’s main local branch.⁸ To establish a campaign against an obscure World Bank loan so quickly, with the purpose of generating a crisis of confidence at the Bank and in Pretoria, required clarity of message, an explicit demand (stop Medupi financing) and a variety of issue-linkages to pull various constituencies into a coalition. As always, the most fundamental narrative asked the question, who wins and who loses?

First, 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 great risk. Forty new coal mines in impoverished areas of Limpopo, Mpumalanga and KwaZulu-Natal provinces will be opened to provide inputs to Medupi and its successor, Kusile, as well as for exports. This will create a few thousand coal sector jobs (hence receiving endorsement from the National Union of Mineworkers), but it appears likely that many more 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. Even though an air-cooled supercritical 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.⁹ Environmentalists and local farmers complained about the destruction of the nearby Mokolo River, in spite of a legal requirement that: ‘Mining cannot impede or divert the flow of water, or alter the bed, banks, course or its characteristics of any watercourse.’¹⁰ Because of destruction caused by illegal sand mining, according to local farm leader Francois van den Berg, ‘farmers could no longer grow winter crops such as pumpkins and tomatoes, which were an important source of income and staples for those in the area.’¹¹

Once the coal is burned and electricity generated, the winners and losers become even more divergent. Medupi’s main beneficiaries are the world’s largest metals and mining corporations, especially BHP Billiton (Melbourne based) and Anglo American (London based), which already receive the world’s cheapest electricity thanks to multi-decade deals. During the early 1990s, Eskom had a third too much excess capacity due to the long SA economic decline; its solution was to attract huge aluminium smelters to mop up the excess power. The agreements were finally leaked through an opposition member of parliament in March 2010, and they disclosed that BHP Billiton and Anglo were receiving electricity at less than \$0.02/kilowatt-hour, whereas the overall corporate price was around \$0.05/kilowatt-hour, still the cheapest available anywhere, and the consumer price was around \$0.10/kilowatt-hour. In early April 2010, just before the 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’.

Eskom’s price increases to pay for Medupi and Kusile far outpaced inflation and GDP



Source: World Bank, Eskom, Statistics South Africa

2.1. Affordability, Commercialization and the Privatisation Threat

Who lost, in terms of bearing the cost burden for Medupi? In terms of financing, the repayment of principal and interest required a 127 percent real price increase from 2008–12 for household electricity consumers (to nearly \$0.12/kilowatt-hour).¹² The anticipated 2013-18 annual price rises declined to the 10-15 percent range, but these were still around twice the anticipated annual inflation rate of 6 percent. What is not known is the price elasticity of electricity, and how much *less* consumers will now consume – and in turn, the adverse implications for public health, gender equity, micro-entrepreneurship, education and so many other positive externalities associated with electricity access.¹³ Indeed, Eskom had tried to raise its prices by a factor of six over a decade-long period, but after a great deal of civil society pressure in 2013, the National Energy Regulator of SA granted only an 8 percent annual increase for the subsequent five years, half what was requested by Eskom, leaving a \$19 billion shortfall.

Eskom remains committed to its 1998 *White Paper* mandate of imposing ‘cost-reflective’ pricing, i.e. carrying the smallest possible subsidies for ordinary retail consumers. Eskom’s continual justification of the Special Pricing Agreements for BHP Billiton and Anglo is the declining cost of providing large short-term supplies of power, i.e. with a declining marginal cost curve, the two huge firms warranted discounts based on economies of scale. For this reason, the claim that expanding electricity supply would be pro-poor fails, since the vast bulk of inexpensive power is guaranteed to the multinational corporations. This reflects Eskom’s ‘commercialisation’ – a step along the path to full-fledged privatisation. Indeed, another controversial aspect of the loan was the Bank’s insistence on partial privatisation: Eskom would offer private renewable energy generating capacity to Independent Power Producers as a condition of the Bank loan. In the process, this advanced Eskom’s previously-expressed desire to privatise 30 percent of generating capacity, a move opposed by trade unions – especially the National Union of Metalworkers of SA (Numsa) – and consumers.¹⁴ Privatisation and other forms of commercialization of SA state services have been a failure in every respect, not least because adding a profit incentive of typically 30 percent of capital puts the commodity into a far higher price range than earlier.¹⁵ Numsa’s oft-stated ideal would be provision of electricity through non-profit, worker-managed, community controlled and municipally subsidized renewable-energy cooperatives.¹⁶

2.2. Corruption

Corruption was another feature that generated critiques of the World Bank by civil society and opposition political parties – especially the liberal Democratic Alliance – and even the influential neoliberal *Business Day* newspaper.¹⁷ They opposed the loan because contrary to supposed Bank anti-corruption policies, it directly funds ANC ruling party coffers via the party’s in-house investment arm, Chancellor House. Medupi is being built with Hitachi boilers that in turn kick back millions of dollars (the amount is still unclear) due to a 25 percent ANC investment in the local Hitachi subsidiary, as well a 10 percent stake in another Medupi construction subcontractor, Bateman Africa. As the Eskom-Hitachi deal was signed under suspicious circumstances, the Eskom chairperson at the time (and former environment minister), Valli Moosa, was also a member of the ANC’s finance committee. A government investigation by the country’s Public Protector released in March 2010 found his conduct in this conflict of interest to be ‘improper’.¹⁸ Then in 2013, the country’s main construction companies confessed to widespread collusion on various state-funded projects. Many of the firms involved in Medupi’s construction – including industry giant Murray & Roberts – were found guilty of anti-collusion violations and fined \$140 million by the Competition Commission.¹⁹

2.3. Labour Unrest

A wide variety of problems subsequently emerged in the actual construction of Medupi, continuing into early 2014. These include widespread labour unrest that reoccurred on dozens

of occasions, featuring periodic mass strikes and extremely militant protests. The strikes that were recorded in mid-2010, for example, related to the fact that 140 workers suffered 'running stomachs and stomach ache after consuming what is reported to be food donated by their employer Murray and Roberts,' according to Numsa. From there, worker militancy kept rising, and by September 2012, fully 17 000 workers were affected by wildcat strikes and sabotage of equipment at Medupi. In October 2012, 3000 workers marched to Eskom's main office at Medupi, with numerous grievances expressed by Numsa:

Medupi Contractors continue to sow divisions between workers on basis of regionalism and provincialism reminiscent to the apartheid era style tactics of fueling tribalism and ethnicity amongst workers... Workers continue to earn poverty wages, in particular general labourers are paid a meagre wages of \$1.60-1.70 per hour culminating in their relegation to extreme shadows of impoverishment and inevitably brewing labour unrest in the project... only whites and immediate relatives of the cartel bosses occupy senior positions across various contractors on site, equally previously disadvantaged people are reduced to the lower order of the project value chain system which defeats the spirit of transformation in totality... former rebels of the Congolese war are on site disguising as security personnel... [and] instill fear in our members... Contractors utilize services of labour brokers who fail to pay workers on time... we are witnessing the re-introduction of the compound system, akin to conditions during the eighteenth century discoveries of both gold and diamonds, as black workers are accommodated in crowded hostels, whilst their white counterparts live in houses or posh lodges and hotels in town... Numsa further notes workers from the outlying villages also experience similar challenges owing to long hours of work and long travel to and from work, resulting in unbearable fatigue.²⁰

After a temporary settlement in early 2013, pay protests resumed, leaving 25 Hitachi and Murray & Roberts employees injured in one incident, and catalyzing a strike of 1100 workers. Construction was halted for ten weeks because according to Numsa, 'workers have endured all manner of victimisation, including a lock-out, which has led to this ongoing strike and violent unrest at the power station.'²¹ In January 2014, unrest was sparked when workers suffered another lock-out, just as this report was going to press. According to Numsa's Stephen Nhlapo, 'The workers are angry and other workers might join them. There might be a full-blown strike. The way things are going, we are going to have big disturbances this year.'²²

2.4. Construction Incompetence

The main internal crisis emerged because of the unsatisfactory work quality by corporate contractors. In December 2012, for example, 9000 welds on the Hitachi boilers were discovered to have been done without heat-treatment, contributing to a six-month delay. The French firm Alstom was another multinational corporate contractor whose Medupi software – the 'brain' of the plant that controls the six boilers to ensure safety – failed repeatedly in 2012. Although originally scheduled for application in December 2012, by November 2013 it was still not in working order,²³ and Alstom was reportedly replaced by Siemens. Soon thereafter the Eskom chief executive, Brian Dames, resigned 'for personal reasons,' although earlier in 2013, Minister of Public Enterprises Malusi Gigaba declared that 'heads will roll' if Medupi fell further behind.²⁴

As a result, by March 2013 there were threats of a return to the 'load-shedding' (brownout) status that left Eskom a national laughing-stock. As industry analyst Chris Yelland reported, Eskom avoided black-outs by using diesel to power gas turbines and paid BHP Billiton to forego consumption: 'Not only does this cost Eskom dearly due to the enormous direct cost of diesel fuel and payments to smelters to shut down, Eskom also loses the electricity sales revenue so desperately needed to meet its burgeoning costs.'²⁵ By November 2013, an emergency was declared with enforced cut-backs of 10 percent on the largest electricity consumers, and an emergency appeal was made to the Department of Environmental Affairs that air quality standards near other Eskom powerplants be relaxed, at the risk of a repeat of the 2008 crises.

2.5. Surveillance of Critics

The combination of structural pressures associated with rising mining and smelting demand, the inability of major corporations to carry out the construction of Medupi, a sense of urgency that bordered on panic, and rising class, community and environmental struggles on the mines, together drove Eskom to desperate measures. In early 2013, a whistleblower revealed that Eskom had hired a private firm – Swartberg Intelligence Support Services – for \$1 million to spy on workers, community activists and environmentalists (including Earthlife Africa and Greenpeace chapters). Eight months later, after Eskom's community and environmental forum had fallen apart, Dames apologized: 'The use of private companies to gather intelligence from stakeholders is unacceptable and not how Eskom does business'.²⁶ In any case, according to *Business Day* columnist Simon Reader, 'It seems Swartberg wasn't all that good.'²⁷

2.6. Criticism by the World Bank's Inspection Panel

There was also pressure against Eskom emanating from an unexpected source: the World Bank itself. Based on April 2010 complaints from Medupi-area community groups regarding 15 environmental and social grievances, the Bank's Inspection Panel assessed 11 of these and in May 2012, seven specific failures were identified and presented to the Board of Directors:

- EIAs were not 'undertaken proportional to, among others, cumulative impacts' because of lax SA standards regarding the multi-decade effects of Medupi's pollution;
- 'an inadequate assessment by management of capacity at provincial and local authority level,' making municipal regulation of Medupi's air and water pollution impossible;
- Insufficient expertise for 'preparation and implementation of projects that are highly risky or involve serious environmental and/or social concerns';
- 'the operation of the power plant, including the technology for removal of sulphur dioxide from emissions, namely flue gas desulphurisation, will place an additional strain on water resources in an area that is already suffering from water scarcity', and Eskom 'did not fully consider the impacts and risks of water supply alternatives' for local users;
- 'considerable risks' regarding 'air quality and health issues' because the Bank itself failed to 'provide adequate information on alternative sources of water for the plant';
- 'the emissions from the Medupi plant pose a health risk to local communities, adding to existing background levels of air pollutants; and
- failure to factor in the 'additional strain on public services and infrastructure in the municipality' which 'is poorly equipped in terms of financial and human resources.'²⁸

However, after considering this tough critique, the Bank directors merely slapped its own officials and Eskom on the wrist, recommending 'a supervision plan' but a reliance on local 'systems as the core means to address these challenges in future.' The biggest loan in the institution's history had become so politicized, apparently, that instead of stronger persuasion, such as withholding future tranches, the Bank decided that 'the outcome of the project relies heavily on a good working partnership between the World Bank and Eskom as well as the country's national and subnational authorities.'²⁹ That partnership apparently needed to be nurtured, what with South Africans regularly speaking out against the Bretton Woods Institutions, especially given that both the Bank and International Monetary Fund needed recapitalization.³⁰ As a result, when Jim Yong Kim visited Johannesburg in September 2012, he ignored the obvious site visits for his institution's two biggest investments. It would not have been too far for Kim to travel (a 20 minute helicopter ride) to either the Medupi site where that very day, 17 000 workers went on a wildcat strike, or to the town of Marikana where exactly two weeks earlier, the Bank's \$150 million investment in the Lonmin platinum mine's

community investment programme became the source of extreme embarrassment, as a result of the police massacre of 34 striking mineworkers.³¹

As disasters at Medupi continued, the Inspection Panel's insistence on more internal oversight over Medupi compelled staff to issue a December 2013 report to the Board, which conceded that 'the commissioning date will slip by another 4-5 months and is now anticipated for early 2015.' Moreover, the attempt to save truck petrol and wear and tear on local roads by building a \$500 million rail line to move coal to the Majuba power plant was also delayed, requiring the state to 'streamline the rest of the tendering processes.' The Bank failed to acknowledge the kinds of corruption in 'tenderpreneurship' that allowed the ANC's deputy president Cyril Ramaphosa (owner of the Shanduka coal empire) – a major supplier on this route – to avoid 'possible prosecution' for massive water license violations at his coal mines, as a result of alleged interference in license regulation by water minister Edna Molewa. According to two senior whistleblowers in her department, 'The minister made it very clear that she did not want the matter to go to court as it would cause an embarrassment for Ramaphosa. She said if the matter went to court it could even cost her her job.'³² Finally, the December 2013 Bank report revealed yet more ecological threats, including major *new* water requirements from the highly vulnerable Crocodile River that crosses the priceless Kruger Park game reserve, as well as desulphurisation delays. The Bank was itself disgusted that two months earlier, Eskom filed a 'draft application seeking exemption and postponement of Minimum Emission Standards for the Medupi power plant,' asking for an additional four years to desulphur its emissions, something even Bank staff refused to countenance.

2.7. Conclusion

These are all critical problems for Medupi and its financiers. In a 2010 debate, the Bank's chief Africa economist at the time, Shanta Devarajan, offered these rebuttals:

The benefits are the increased access to power for many people in the sub-region; the costs include some of the points you mention, such as carbon emissions and the financing costs. Our analysis indicated that the benefits outweighed the costs. We included estimates of the shadow price of carbon (based on international estimates) and of course the financing costs in that analysis. If you accept the principle that decisions like these should be based on benefit-cost analysis, then I would encourage you to examine our analysis and its assumptions (all of which are in the public domain), rather than simply list a series of concerns.³³

The problem, of course, is that the 'increased access to power for many people' ignores the increased cost and diminished affordability, and hence *decreased access* for poor people. At this stage, without any new power from Medupi and with much higher costs passed to Eskom customers as well as regional electricity purchasers, there is not yet data to show just *how far the costs outweigh the benefits*. But there is little doubt they do, and will for future generations.

3. SOUTH DURBAN'S TRANSNET PORT-PETROCHEMICAL EXPANSION

By 2040, an estimated \$25 billion in new port and petrochemical investments will result in what is already Sub-Saharan Africa's largest port, in South Durban, handling 20 million containers annually. This is an eight-fold increase from 2.5 million containers in 2012. To this end, SA's National Development Plan named South Durban as its second highest-priority mega-project (after the Waterberg-Richards Bay coal infrastructure expansion).³⁴ Financing could be the most critical element, given that SDCEA has announced it will begin a 'financial sanctions' campaign against Transnet if it follows through.

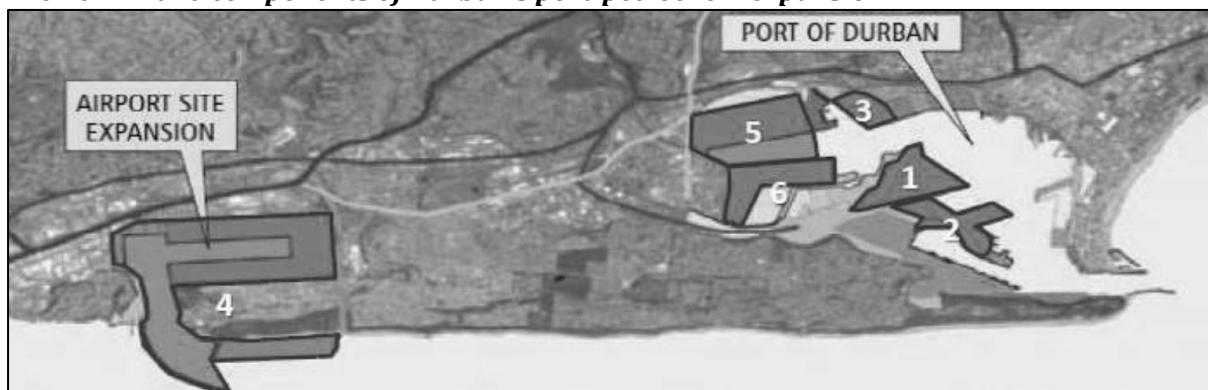
Although the project's earliest investments are a \$20 million bridge (2006-10) linking the port more directly to Durban's highway system and a \$2.4 billion oil pipeline (2007-14), which

both entail Transnet as the main funder using internal financing, the bulk of investment will occur in both petrochemical expansion (so as to take up the new doubling of pipeline-transport capacity) and a new 'dig out port' (estimated to cost \$10 billion) that will begin in 2016. Hence the 2014-16 period is the crucial window in which financing will be assembled. That funding will also pay for a dramatic increase in existing port capacity, so that the 5000+ container 'post-Panamax' ships can be accommodated in the current harbor (stages 1-3). In 2016, the dig-out port at the old airport site will be excavated, with an anticipated first berthing in 2020 (stage 4). The final growth of the existing port will include an extensive dig-out of the area currently under Transnet railroad siding operations (stages 5-6), although with liberalization of transport in the early 1990s and the move of freight to road-based trucking, this land is mostly unused. The latter stages of the project are in close proximity to the predominantly Indian areas of Isipingo and Merebank in the south and Clairwood in the north, as well as the African township of Umlazi and the coloured Wentworth area.

Finding the money will be Transnet's most critical challenge, given the scale of the project and how many aspects are being contested. Transnet acquired the first tranche of financing for this project and \$30 billion worth of other mega-projects from a \$5 billion loan, apparently without conditions (and with terms not publicly released), made by the Chinese Development Bank in March 2013, at the time of the Durban BRICS summit. There were, in addition, repeated subsequent bond offerings of several hundred million dollars, including in the London markets in November 2013 where the premium paid by Transnet was enormous on its Rand-denominated bonds: 9.5 percent. But the longer-term threat is that the promised BRICS Bank will seek projects like this one, as exemplars of export-oriented infrastructure.

In July 2013, a high-profile meeting of the Durban Transport Forum heard Transnet's port expansion director Marc Descoins update his team's planning: 'The fatal flaws analysis yielded many risks but no show-stoppers.'³⁵ Descoins had not, at that time, factored in resident and labour opposition to the mega-project, its vast environmental implications, or rising disgust about construction-driven White Elephants. Tracing several of the problems with the port-petrochem expansion in South Durban sheds light on the interconnections between social and environmental grievances, as well as a growing economic debate about whether SA's vulnerability to the world economy should be mitigated, or instead grow worse.

The 2014-2040 components of Durban's port-petrochem expansion



Source: Transnet

3.1. The Doubling of Oil Pipeline Capacity

The first part of the expansion, the Khangela Bridge, was a function of trucking company frustration with the delays encountered moving freight from ships in the existing port to the highway system through South Durban. Originally announced as a \$7 million expenditure, the project costs ballooned by a factor of nearly three by the time the bridge was complete in 2010. One reason was rampant corruption involving three major construction companies.³⁶

The second stage was Transnet's Durban-Johannesburg oil pipeline construction project, lasting from 2007-14. The mega-project, known as the 'new multi-product pipeline', cost \$2.34 billion, a dramatic cost escalation in part because the pipeline was diverted hundreds of kilometers from the traditional route west along the N3 highway. That route ran through mostly-white Durban suburbs (Mariannhill, Hillcrest, Shongweni and Camperdown), and now the pipeline moves double the pre-existing oil volume through (mostly-black) South Durban, Umbumbulu and other former KwaZulu bantustan areas. According to Durban's leading environmental journalist, Tony Carnie, 'The \$600 million petrol, diesel and jet fuel pipeline will replace the existing Durban-to-Johannesburg pipeline which was built in 1965. The existing pipeline is believed to have rust defects and cannot cope with the future demand in fuel growth in Gauteng.'³⁷ By moving the project southwards before turning west, the cost estimate rose by more than 50 percent. But there were many other cost increases, with the total reaching \$2.34 billion by 2013, in part because of apparent construction company collusion on tendering by one of the main pipeline construction companies, Group Five Civil Engineering.³⁸

In his own review of the cost overruns, without considering construction company collusion, Public Enterprises Minister Malusi Gigaba uncovered 'systemic failings that compromised the intended outcomes' and he admitted that his project managers 'lacked sufficient capacity and depth of experience for the client overview of a megaproject of this complexity,' especially related to 'analysis of risks.' Nor were EIAs or water and wetland permits 'pursued with sufficient foresight and vigour.'³⁹ Well before this became public knowledge (Group Five only stepped forward to confess its role in industry collusion in 2009), SDCEA offered several critiques of the pipeline, including the racially-biased routing; inadequate public participation; dubious motivations for the pipeline; government's failure to prevent, detect or manage pipeline leaks; and climate change.⁴⁰ According to SDCEA, the race and class bias were crucial reasons to reject Transnet's re-routing strategy, because 'The pipeline threatens people with potentially severe environmental safety and health problems (well known to refinery victims in South Durban), *in a manner that is discriminatory along class and racial lines.*' The local ecology itself was already saturated with toxins, SDCEA alleged:

Durban Bay, in which the harbour is situated, is struggling to cope with the pollution loads from harbour and associated activities, contaminated riverine and storm-water inflows. The expansion will require further removal of aspects of the Bay's ecosystem, which will in turn further reduce the assimilative capacity of this threatened and fragile estuary. There have been major incidents affecting the harbour, including the September 2007 fire at Island View Storage. Reducing the amount of hazardous material being stored, handled and transported in the harbour is a crucial first step to reducing the risk to people living, traveling and working in the area. Yet the pipeline proposal will do the opposite. The routing of the pipeline south, directly through low-income black residential areas instead of through areas including farming lands owned by wealthy white South Africans, is suspiciously reminiscent of the environmental racism we in South Durban have become familiar with... The leaks that have occurred in existing petroleum pipelines have been devastating to South Durban, including the 1.3 million liters that spilled from Sapref lines in 2001, that were not detected until residents complained. According to present practices, only a leak of more than 1% will be detected. Incidents leading to a loss of product which is not detectable by the system may continue to pollute the soil and groundwater for a long time. During this period, many people, fauna and flora may be affected by the consequences of the pollution and not understand the cause until it is too late. In this case, the costs will not be borne by the polluter, as our legal framework requires.⁴¹

Many of the same complaints arose again four years later, in mid-2012, when the next stage of the port-petrochem complex reached fruition: the proposal for a new dig-out port and expansion of the old port. The most heart-felt of the critiques levelled was against displacement, because for many Indian and African residents of South Durban, their earlier residents during apartheid were in Cato Manor, a well-located residential area, and that meant the white

government moved them to South Durban as part of its racial displacement strategy. Now the same appeared imminent, though this time for class reasons.

3.2. Displacement and Trucking Company Attacks

SDCEA, the Wentworth Development Forum and Merebank Residents Association and the Clairwood Residents and Ratepayers Association are justifiably convinced that the port-petrochem project will generate not just traffic chaos, but residential displacement on a very substantial scale. From the north, the old harbour's expansion creep will displace residents by the thousands from the culture-rich, 150 year old Indian and African community of Clairwood. That area's African shackdwellers and long-time Indian residents are already being squashed by trucking companies, who are beneficiaries of the rezoning – or simply failure to enforce existing zoning – that facilitates Back-of-Ports creep. In the process of liberalized zoning and lack of residential area zoning enforcement by the municipality, ten Clairwood and nearby Bluff suburb residents were killed in the decade 2003-13 by truck accidents. Mostly carrying freight, these drivers killed 70 people in the course of 7000 accidents in Durban in 2012 alone. The worst single case occurred in September 2013, when 23 people were killed by a runaway freight truck on the Field's Hill section of the alternative (non-tolled) highway from Johannesburg. That accident was revealing, for one of the world's three largest shipping companies, Evergreen, hired a local informal truck company which allegedly instructed its driver to avoid tolls to save \$4. Police cracked down after the accident and found several of the company's trucks operating under unsafe conditions. The one that hit two commuter taxis was driven by an unqualified immigrant driver, underpaid; the truck's brakes failed on one of the steepest highways in the country. A few weeks later, government proposed restricting that particular hill to only 5 tonne trucks, banning 16 tonne trucks. But the broader problem of rising accidents was not addressed.

3.3. Local Ecological Degradation

Opposition from local communities will grow even more intense once the largest part of the port expansion begins, in 2016. The proposed dig out port is where the old airport stood, on the southern border of the Merebank neighbourhood. To dig a 1.5 kilometre length of soil 20 meters deep is dangerous, given how many toxic chemicals have come to rest there over the years. Even Descoins conceded, 'We have to look at contamination issues. Hydrocarbons have been pumped around this area for decades and we know there have been some leaks.' That soil, water and air pollution will exacerbate the five-year dust cover under which the dig-out port's construction will suffocate Merebank and Wentworth, the mainly Indian and coloured communities of South Durban. These neighbourhoods are already coated with regular oil-related sulfur and soot showers from the oil refining complex, as witnessed in their world-leading asthma rates.

In addition to damage to human health, BirdLife SA observed that since Durban has one of just three estuarine bays in SA, its 'ecosystem services' value of goods and services is vast: as a heat sink and carbon sink, for biodiversity, as a fish nursery, for waste disposal, and for storm protection. Moreover, the Bonn Convention's protections for bird migration should make estuaries and wetlands like South Durban immune from more cementing. In May 2013, Public Enterprises Minister Malusi Gigaba dismissed the worries over 'frogs and chameleons'.⁴² In contrast, the ecological damage implied in this stage of Transnet's expansion was so extreme that the Department of Environmental Affairs reviewed the EIA for the build-out of two berths so as to accommodate super-post-Panamax ships of 15 000 containers or more, and rejected the first version in October 2013. One of the two reasons was Transnet's failure to do more than 'monitor' the damage it would do the major sandbank in the middle of the estuarine bay, which hosts so many reproductive processes for fish and birdlife.⁴³

3.4. Global Ecological Implications and Local Climate Adaptation

The second reason Transnet suffered an early rejection of its EIA was due to the most important environmental problem of all, climate change. The firm's consultants had not begun to consider the impact of rising sea levels or extreme storms.⁴⁴ As oceans warm up, cyclones and hurricanes also intensify, with their impact exacerbated by sea-level rise. 'The volume of Arctic sea ice has been reduced by 75 percent in just 30 years,' reported the world's most respected climate scientist, James Hansen of NASA, to the Cornell University Global Labor Institute in 2012: 'There is a danger that the ice sheets will begin to collapse and we could get several meters of rising sea levels in one year.'⁴⁵ Durban recently suffered an early indication, for in March 2007, according to the assessment of local marine expert and municipal official Andrew Mather, 'wave run-up heights were measured at twelve beaches along the Durban coastline and these peaked at 10.57 meters above Mean Sea Level.' Nearly a billion dollars' worth of coast infrastructure was destroyed. In August 2012, the same Durban port berths proposed for expansion in 2014 were severely damaged during heavy winds which bumped a ship up against cranes, resulting in a fortnight-long closure, less than a year after Durban hosted the UN climate summit.

What of the mitigation challenge associated with the port-petrochem complex? According to the Academy of Science of SA's 2011 book about Durban, *Towards a Low Carbon City*, 'The transport sector is pivotal to the transition to a low carbon city... The top priority was identified as the need to reduce the vehicle kilometers travelled in the road freight sector as this provided the greatest opportunity to simultaneously reduce emissions of GreenHouse Gases and traditional air pollutants.'⁴⁶ The Transnet port-petrochem complex will do the opposite, in part because for decades, Transnet sabotaged its own rail freight capacity, allowing road trucking to surge from 20 to 80 percent of container carriage. Yet in addressing the obviously adverse climate implications of their project, Transnet hired Nema Consulting which in turn hired as a climate specialist the SA Council for Scientific and Industrial Research, whose 2011 report, 'Modelling of potential environmental change in the port marine environment', completely ignored climate. Follow-up with officials of Nema in 2012 generated this reply: 'The project will decrease the ship waiting and turnaround times which will have a lower carbon impact'. The consultants did not factor in the dynamic aspects of the shipping system, meaning that if there is an increase in efficiency by reducing the ships' offshore wait, the result is to speed up the system as a whole, thus *increasing* carbon impact.

3.5. Economic Irrationalities

Ironically, *inefficiency* may be the way the port-petrochem project is unveiled as being uneconomic and inappropriate for financing. The argument in favour of the port is mainly that jobs will be created and SA will have world-class infrastructure for export-led growth. But rising capital intensity at Transnet along with trade-related deindustrialization will probably result in more net employment loss, which is the norm since 1994 when democracy also ushered in economic liberalization after joining the World Trade Organisation. The project only makes sense if one is locked into national boundaries established in Berlin during the colonial 'Scramble for Africa' in 1885. As the region's main port-rail link to the largest market, Gauteng – and from there to the rest of the subcontinent – Durban is facing stiff competition from Maputo in Mozambique for shipments to the huge Johannesburg market, because it is a much less mountainous journey.

In addition, there is general container-handling competition from other ports along the coast attempting to set up regional freight hubs and export processing zones. As it stands, at \$1080 per container, Durban's costs of processing freight are the highest in the world. What port advocates have not been able to do is explain how an additional \$25 billion in investments (no doubt much more according to the recent trend of final costs tripling original estimates) will cut operating and maintenance costs to competitive levels. Repaying the interest on the capital, the principal and all the new additional costs will force much higher container handling charges, leaving the real prospect of another white elephant. In Durban, similar projects that were anticipated to earn profits – such as the airport, convention centre and marine entertainment complex – all have needed multi-million dollar annual taxpayer bailouts.

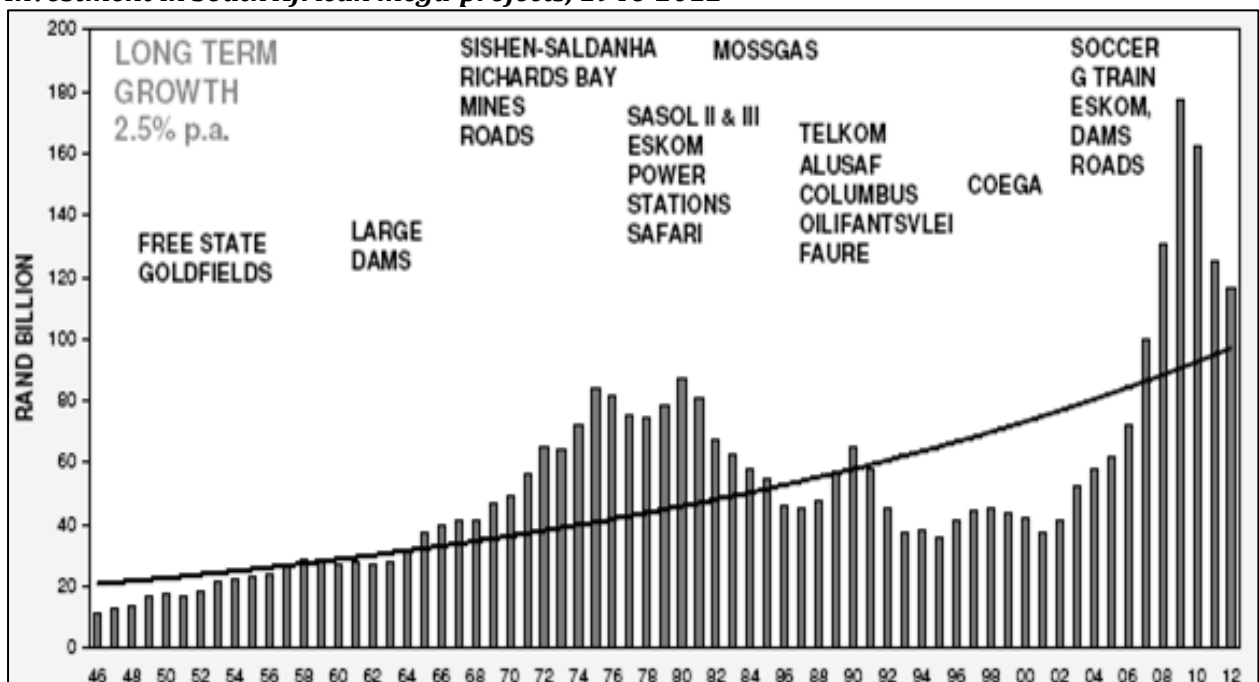
3.6. Conclusion

A very different Strategic Investment Project would recognize the urgent need to detox South Durban and reboot the local economy towards more labour-intensive, low-polluting industry, and add much more public transport, renewable energy, organic agriculture not reliant upon pesticides, a 'zero-waste' philosophy and a new ethos of consumption. The South Durban activists and the national Million Climate Jobs campaign who want society to adopt this approach remain on a collision course with Transnet, its financiers, the Treasury and Presidential Infrastructure Coordinating Commission, as well as the municipality. Unlike the Medupi campaign from February to April 2010, there is far more time for mobilization of advocacy pressure to halt Transnet's access to external financing, and hence the project itself.

4. CONCLUSION: CLIMATE AND CAMPAIGN STRATEGY

What is the future of SA mega-project development strategy, based as it is on fossil fuels, and on extremely dubious approaches such as those we have just examined?⁴⁷ In October 2012, at a Presidential Infrastructure Investment Conference in Johannesburg, Deputy Public Works Minister Jeremy Cronin confessed what is patently obvious in the neo-colonial SA economy: 'Too much of our development has been plantation to port, mine to port.' Instead, we need 'social infrastructure, such as water, hospitals, schools, and housing, in order to prevent the kind of protests witnessed recently in the mining sector.'⁴⁸ Cronin's influence notwithstanding, this rhetoric is probably just a case of 'talk-left, invest-right': in mega-projects like Medupi and South Durban's port sprawl, against the interests of people and planet, and instead on behalf of corporate profits. In these respects, there was more continuity than change in the pre-1994 and post-1994 eras. For many years, mega-projects have dominated corporate investment, and have always entailed very generous state-supported subsidies, usually associated with mining (Free State Goldfields), smelters (Alusaf, Columbus), airports, ports (Richards Bay, Saldanha, Coega), mega-dams (Gariep, Lesotho), coal-fired powerplants and other energy projects (Mossgas, Sasol oil-from-coal) and occasional special projects (sports stadiums and the Gautrain).

Investment in South African mega-projects, 1946-2012



Source: SA Reserve Bank

What this means is that there remains a formidable lobby for fossil-fuel based infrastructure investment in SA, ranging from mining houses to the construction industry. The ruling class mandate is to 'mine more and faster and ship what we mine cheaper and faster', as *Business Day* editor Peter Bruce ordained just as Gordhan was finalizing his \$100 billion infrastructure budget in February 2012.⁴⁹ Behind Bruce's strategy is a long history of cheap energy supply for transnational capital made possible by the availability of large amounts of poor quality coal and an incestuous relationship between the coal mines, gold industry and Eskom. A history of state intervention in securing the energy needs of the mines, agriculture and industry established the principle of keeping electricity as cheap as possible for big capital.

The ANC government did not change this arrangement, which helps explain why its posture at recent climate summits has been in defence of the world emissions status quo. The new government was as co-opted as was the old regime by the 'minerals-energy complex' (MEC), a phrase that captures the fusion of state, mining houses and heavy industry, especially in beneficiating metallic and mineral products through smelting. First using the term MEC in their 1996 book *The Political Economy of South Africa*, Ben Fine and Zav Rustomjee showed throughout the twentieth century that mining, petro-chemicals, metals and related activities, which historically accounted for around a quarter of GDP, typically consumed 40 percent of all electricity, at extremely low prices.⁵⁰ David McDonald updated and regionalised the concept a decade onwards in his edited collection, *Electric Capitalism*, discovering an 'MEC-plus':

Mining is South Africa's largest industry in the primary economic sector and the country has the world's largest reserves of platinum-group metals (87.7 percent of world totals), manganese (80 percent), chromium (72.4 percent), gold (40.1 percent) and aluminosilicates (34.4 percent)... South Africa's appetite for electricity has created something of a scramble for the continent's electricity resources, with the transmission lines of today comparable to the colonial railway lines of the late 1800s and early 1900s, physically and symbolically.⁵¹

Eskom fostered a debilitating dependence on the (declining) mining industry. It left South Africa, according to the University of Cape Town Energy for Development Research Centre, as 'the most vulnerable fossil fuel exporting country in the world' if the Kyoto Protocol is fully extended in 2015 at the Paris UN climate summit; 'heavily reliant' on energy-intensive industries; 'highly dependent' on coal for primary energy; offering 'low energy prices to large corporate consumers'; and risking the development of a 'competitive disadvantage' by virtue of 'continued high energy intensity' which in the event of energy price rises 'can increase the cost of production'.⁵² As a result, when corrected for income and population size, South Africa's emissions were higher than even the energy sector of the US, *by a factor of twenty*.⁵³

To deal with this legacy, the government adopted a Long-Term Mitigation Scenario (LTMS) in mid-2008, to great fanfare. The LTMS plans for absolute cuts in CO₂ to start only in the period 2030–5, after a post-2020 plateau. And tellingly, the 2004 National Climate Change Response Strategy endorsed carbon trading, declaring 'up-front that the Climate Development Mechanism (CDM) primarily presents a range of commercial opportunities, both big and small'.⁵⁴ (The carbon trading strategy was apparently killed in 2013 when the national Treasury issued a carbon taxation proposal, with the observation that carbon trading would not work in a market with only a few very large polluters.⁵⁵) Yet the South African government's 2010 National Climate Change Response Green Paper acknowledged local dangers of climate change: 'Should multilateral international action not effectively limit the average global temperature increase to below at least 2°C (above pre-industrial levels), the potential impacts on South Africa in the medium- to long-term are significant and potentially catastrophic.' The paper warned that under conservative assumptions, 'after 2050, warming is projected to reach (increase?) around 3–4°C along the coast, and 6–7°C in the interior'.⁵⁶

How would South Africa to address climate change at the global scale? The main negotiation session in the 2009 Copenhagen COP15 was disappointing, with a deal between US president Barack Obama and BRICS (minus Russia, hence 'BaSIC') leaders Lula da Silva, Manmohan Singh,

Wen Jiabao and Jacob Zuma leaving the earth's atmosphere with 770 parts per million of CO₂ equivalents (or worse if the promised 15 percent emissions cuts from 1990 levels to 2020 are not achieved, and in reality, these 'cuts' could become a 10 percent increase once carbon trading and offset loopholes are factored in). In these and future climate negotiations, Pretoria would be taken more seriously if seen to be honouring its official pledge, made just before the Copenhagen summit: cutting greenhouse gas emissions to a 'trajectory that peaks at 34 percent below a Business as Usual trajectory in 2020.' But that highly unlikely promise was contingent on the North paying Pretoria (unspecified) climate funds and transferring low-carbon technology without the usual debilitating royalty requirements, according to Environment Minister Edna Molewa.⁵⁷

So far the strategy has not paid off in any way, aside from giving South Africans higher-profile roles in the annual UN negotiations, as well as occasional leadership positions in matters such as climate finance. For example, the UN High-Level Advisory Group on Finance which reported to Ban Ki-moon in November 2010 was co-chaired by South African planning minister Trevor Manuel, and in 2011 he co-chaired the Green Climate Fund design committee. His conservative recommendations included financing up to half the North-South climate financing with CDM and other carbon trades.⁵⁸

What, then, compelled the South African government to such extreme commitments for new projects such as Medupi and the Transnet expansion, which will undeniably exacerbate all these problems? The main reason for the former was a series of electricity generation shortfalls during January–March 2008 which led to consistent surprise 'load shedding' in which entire metropolitan areas were taken off the electricity grid. These were due partly to a lack of new capacity built by national power generator Eskom since the early 1990s (when excess capacity had risen to more than 30 percent), the running down of coal supplies and rain damage to incoming coal. But the main reason was the increased electricity consumption of metals smelters due to the 2002–08 speculative uptick in commodity prices. Indeed, even earlier, the economy's five-fold increase in CO₂ emissions since 1950, and 20 percent increase during the 1990s, can largely be blamed upon supply of the subsidised electricity by Eskom to multinational corporate mining houses and metals smelters.

Hence the economics of electricity supply to the mining sector can be questioned. Not only are vast carbon-based profits fleeing to the mining houses' offshore financial headquarters but, despite consuming huge amounts of electricity, the smelters create very few jobs. Instead of cutting back on these sorts of projects, and turning the subsidies to renewables, the ANC government attempted to augment coal-fired generation with, first, dangerous new pebble bed nuclear technology (rejected by German nuclear producers in the 1990s and finally in 2010 defunded by finance minister Pravin Gordhan in frustration) and then with dangerous existing-technology nuclear reactors (rumours continue that another \$100 billion of investment has been earmarked after 2020 for a new generation of nuclear technology, with assistance from the Russian government, as arranged during the 2013 BRICS summit). Renewable sources like wind, solar, wave, tidal and biomass are the most obvious ways forward for this century's energy system, but still get only a tiny pittance of government support, and provide less than 5 percent of the grid's power.

The parastatal corporations' substantial new investments also reflected growing pressures to maintain infrastructure spending in the wake of a major downturn after the completion of the 2010 World Cup stadiums and associated infrastructure (the new Durban airport, the Gautrain fast train in Johannesburg-Pretoria, and some highway extensions in Gauteng Province and Durban). But amidst the infrastructure investment boom, contradictions have become glaringly apparent, not only with the white elephants already constructed but in those still to come, including the Medupi coal-fired power plant and Transnet's South Durban port-petrochemical expansion.

In this context, SA often feels close to exploding, given the extreme dislocations and inequalities, so well exemplified in the mega-projects discussed above. The power relations that create these tensions are being contested with intense vigour, in workplaces and communities. The protests are always local in character, but they also reflect the durable national-level power

relations. During the post-apartheid era, most South Africans suffered from neoliberal policies imposed by the governments of Nelson Mandela (1994-99), Thabo Mbeki (1999-2008), Kgalema Motlanthe (2008-9) and Jacob Zuma (2009-present). The results included an immediate rise in income inequality, with the Gini coefficient soaring from below 0.6 in 1994 to 0.72 by 2006 (0.8 if welfare spending is excluded).⁵⁹ The official unemployment rate doubled from 16 percent in 1994 to around 32 percent by the early 2000s, falling to 23 percent by the late 2000s when in 2009-10 another 1.3 million jobs were lost – but by counting those who gave up looking for work, the realistic rate is closer to 40 percent.⁶⁰ The long-term explanations for the employment massacre were increased imports in labour-intensive sectors – mostly by ship through the Durban port (source of 60 percent of SA-bound cargo) – and imported machines to exacerbate capital-intensive production techniques.

In addition, ecological problems became far worse, according to the government's 2006 Environmental Outlook research report, which noted 'a general decline in the state of the environment'.⁶¹ By 2012, SA's 'Environmental Performance Index' slipped to 5th worst of 133 countries surveyed by Columbia and Yale University researchers.⁶² For example, in spite of water scarcity and water table pollution in the country's main megalopolis, Gauteng, the first two Lesotho mega-dams were built during the late 1990s thanks to World Bank financing, with destructive environmental consequences downriver, and the extremely high costs of water transfer deterring consumption by poor people in Gauteng townships.

One result was the world's highest-profile legal case of Third World development corruption. Another result was the upsurge of social protest in which Africa's main 'water war' – between Soweto residents and their municipal supplier outsourced to a Paris water company, Suez (whose construction subsidiary was one of the firms prosecuted for corruption in Lesotho) in the early 2000s – can be traced to the higher prices and a commercialized system that protesters objected to. The wealthiest urban (mainly white) families continued to enjoy swimming pools and English gardens, which meant that in some of the most hedonistic water consumption in the suburbs was 30 times greater each day than in low-income townships (some of whose residents continue doing gardening and domestic work for whites). Rural (black) women still stand in line for hours at communal taps in the parched former bantustan areas. This case was an important precedent for electricity, for Medupi's financing costs have a similar impact on affordability for low-income black South Africans.

Similar biases affect health and welfare when it comes to the distribution of electricity. While BHP Billiton gets the world's cheapest energy for its aluminum smelters, millions of poor people are regularly disconnected from or denied access to the grid due to extreme poverty. Because of dirty household energy, the passage is often rapid from HIV-positive to full-blown AIDS status via respiratory-related opportunistic infections, including the raging TB epidemic. These add to the existing set of occupational health diseases inherited from the MEC. The government's failure to prevent mining pollution, toxic dumping and incineration led to a nascent but portentous group of mass tort (class action) lawsuits. The victims included asbestos and silicosis sufferers who worked in or lived close to the country's mines, who in 2013 achieved a landmark victory. Other legal avenues and social activism were pursued by residents who suffered persistent pollution in extremely toxic pockets like South Durban and, just south of Johannesburg, the industrial sites of Sasolburg and Steel Valley. In these efforts, the environmental justice movement almost invariably fought both corporations and Pretoria, which from 1994 downplayed ecological crimes (a Green Scorpions anti-pollution team did finally emerge but with subdued powers that barely pricked).

With this level of degradation, it is no surprise that there is such intense labour, social and environmental resistance. The 2012 and 2013 World Economic Forum *Global Competitiveness Report* placed SA in the world-leading position for adverse employee-employer relations out of the 144 countries surveyed.⁶³ And typically 10 000 protests are recorded by police each year; in 2012-13, for example, the minister of police reported that of 12 400 protests, '10 517 were peaceful and 1 882 were violent public protests, with a total of 693 criminal cases reported.'⁶⁴ Because attempts to change public policy have failed, thus far, one obvious *new* pressure point will be financing. What is at stake is whether common sense prevails over profits. That calculus

has to be swung in the favour of the former, by reducing the latter, perhaps through non-violent civil disobedience of the sort pioneered in Durban in 1913 by Mahatma Gandhi; i.e., of the sort international anti-apartheid activists used to assist in ending apartheid. The most powerful weapon was financial sanctions. Whether the World Bank and international lenders – including China and the coming BRICS Bank – can be forced to stop new tranches for Medupi and new Transnet financing, is a matter of organizing prowess.

It is the financing weaknesses of the two parastatal corporations that might, if organizing does intensify, make the mega-projects more difficult to bring to fruition, given SA's vulnerabilities and excessive foreign debt. But that will be a matter for struggle.

NOTES

1. This research was made possible only through the activist-sourced knowledge generated by repeated contestations against both Eskom and Transnet by tireless colleagues at the South Durban Community Environmental Alliance, groundWork and the Centre for Civil Society.

2. Rand Merchant Bank Financial Markets Research, 'Monthly ZAR outlook,' Johannesburg, March 5, 2009, p.2. What makes this debt worse is the interest rate; amongst SA's largest trading partners, only Greece's has been higher, according to the Department of Trade and Industry. One reason interest rates have been so high in relative terms, is to guard against capital flight which periodically crashes the currency. SA's liberalized exchange control system initially compelled a massive interest rate increase in 1995-96 to mitigate the exchange control deregulation of March 1995. See Patrick Bond, *Against Global Apartheid*, London, Zed Books, 2003.

3. Patrick Bond, *Elite Transition*, London, Pluto Press, 2000; Connie Fields, *The Bottom Line: Have You Heard from Johannesburg*, Berkeley, Clarity Films, 2010, <http://www.clarityfilms.org/joburg/>.

4. This was confessed by William Moomaw of Tufts University, an outside evaluator of the Medupi loan; <http://ia600307.us.archive.org/7/items/PatrickBondWilliamMoomawDiscussClimateJusticeSouthAfricaAndThe/PatrickBond.wmv> In any case, Eskom's commitment to renewable energy and integrated demand management was erratic, as in early 2014 it simply halted crucial renewable energy subsidies: [http://simbalism.co.za/index.php?page=press Africa and Eskom&ownerid=press Africa and Eskom.php&contentid=492](http://simbalism.co.za/index.php?page=press+Africa+and+Eskom&ownerid=press+Africa+and+Eskom.php&contentid=492)

5. Jim Yong Kim, 'Press Conference with WBG President Jim Yong Kim, S.African Finance Minister Pravin Gordhan, and WB VP for Africa Makhtar Diop', 6 September 2013, Pretoria, World Bank, <http://www.worldbank.org/en/news/speech/2012/09/06/press-conference-wbg-president-jim-yong-kim-safrican-finance-minister-pravin-gordhan-wb-vp-africa-makhtar-diop>

6. BankTrack, urgewald, groundWork and Earthlife Africa, *Bank Rolling Climate Change*, London, 2011, http://www.banktrack.org/show/pages/bankrolling_climate_change_report_on_banks_and_coal

7. groundWork (2009), *The World Bank and Eskom*, Pietermaritzburg, December, <http://www.groundwork.org.za/Publications/Reports/SpecialReports/worldbankeskom09.pdf> and <http://www.earthlife.org.za/?p=858>

8. South Durban was already known as a prolific site of protest against fossil fuels, given that it hosted amongst the largest and least responsible petro-chemical firms south of the Niger Delta. With electricity prices soaring, many more residents in South Durban were being disconnected. They often reconnected illegally, and Eskom and the municipality clamped down, generating ore local anger.

9. <http://ia600307.us.archive.org/7/items/PatrickBondWilliamMoomawDiscussClimateJusticeSouthAfricaAndThe/PatrickBond.wmv>

10. Siphso Kings, 'Medupi mining puts river in deep trouble', *Mail&Guardian*, 11 January 2013, <http://mg.co.za/article/2013-01-11-mining-puts-river-in-deep-trouble>

11. *Ibid.*

12. SAPA, 'Sweet deals use 5 percent of Eskom's power – Hogan,' April 19, 2010.

13. The literature on multipliers is reviewed in Patrick Bond, *Unsustainable South Africa*, London, Merlin Press, 2002.

14. Castro Ngobese, 'Numsa statement on Eskom retrenchments,' National Union of Metalworkers of SA Press Statement, Johannesburg, April 19, 2010.

15. Patrick Bond, *Elite Transition*, Pietermaritzburg, University of KwaZulu-Natal Press, 2005.

16. Castro Ngobese, 'Motivations for a socially-owned renewable energy sector,' Johannesburg, 15 October 2012, <http://www.numsa.org.za/article/motivations-for-a-socially-owned-renewable-energy-sector-2012-10-15/>

17. Peter Bruce, 'The thick end of the wedge,' *Business Day*, April 19, 2010.

18. Ernest Mabuza, 'Valli Moosa-Eskom 'Conflict of Interest'', *Business Day*, February 19, 2010.

19. Ironically, in February 2010, the World Bank had issued a major statement alongside its annual African Development Indicators, entitled 'Quiet Corruption', in which it blamed African teachers and healthcare workers for

moonlighting (a result of Bank structural adjustment policies). World Bank, *Silent and Lethal: How Quiet Corruption undermines Africa's development efforts*, Washington, DC: World Bank, 2010.

20. National Union of Metalworkers of SA, 'Appalling working conditions and deteriorating working conditions within the Medupi Project grievances', Lephhalale, 19 October 2012.

21. National Union of Metalworkers of SA, 'Statement on the latest developments at Medupi Power Plant', Johannesburg, 22 January 2013.

22. Schalk Mouton and TJ Strydom, 'Darkness looms as Eskom takes more strain', *Times*, 9 January 2014.

23. Carol Paton, 'Medupi faces fresh glitches', *Business Day*, 15 November 2013.

24. Londiwe Buthelezi, 'Department denies part in Dames' decision to leave Eskom', *The Mercury*, 6 December 2013.

25. Chris Yelland, 'A company in distress', *Daily Maverick*, 4 March 2013.

26. Sapa, 'Eskom apologises for spying on Greenpeace, Earthlife', 11 November 2013.

27. Simon Reader, 'Why is Eskom the only rotter in the spy saga?', *Business Day*, 26 November 2013,

<http://www.bdlive.co.za/opinion/columnists/2013/11/26/why-is-eskom-the-only-rotter-in-the-spy-saga>

28. Tracy Hancock, 'Inspection panel findings on impact of Medupi', *Creamer's Engineering News*, 17 May 2013, <http://www.engineeringnews.co.za/article/inspection-panel-findings-on-community-impact-of-medupi-2013-05-17>

29. *Ibid.*

30. In 2012, for example, the IMF began raising \$75 billion from the BRICS countries, even though SA's finance minister Pravin Gordhan had recently attacked the IMF for not giving African countries more voting power, and not being sufficiently 'nasty' to European borrowers. Gordhan told *Moneyweb* that SA's contribution was based on the IMF becoming more 'nasty' (*sic*) to desperate southern European borrowers. The result was that China gained dramatically more IMF voting power, while Africa lost a substantial fraction of its share. (*Moneyweb*, 'Special report podcast: Pravin Gordhan, Minister of Finance', 29 September 2011, <http://www.moneyweb.co.za/moneyweb-special-report/special-report-podcast-pravin-gordhan--minister-of?sn=2009+Detail> and Pravin Gordhan, 'IMFC Statement by Pravin J. Gordhan, Minister of Finance, South Africa,' Washington, IMF, 13 October 2012, www.imf.org/external/am/2012/imfc/statement/eng/zaf.pdf).

31. Kim preferred to instead visit a different World Bank investment: a Johannesburg junk mail company. Patrick Bond, 'Kim's trip to South Africa was just a PR exercise for the World Bank', *The Guardian*, 11 September 2012.

32. Nelly Shamase and Matuma Letsoalo, 'Saving Cyril: Molewa accused of meddling', *Mail&Guardian*, 9 November 2012.

33. Shanta Davarajan and Patrick Bond, <http://blogs.worldbank.org/africacan/patrick-v-shanta-round-2>

34. National Planning Commission, *National Development Plan*, Pretoria, 2012, <http://www.info.gov.za/view/DownloadFileAction?id=172296>

35. *Creamer's Engineering News*, 'Prefeasibility work starts on Durban Dig Out Port,' 5 July 2013,

<http://www.engineeringnews.co.za/print-version/prefeasibility-work-starts-on-durban-dig-out-port-2013-07-05>

36. Colleen Dardagan, 'Durban to nail tender riggers', *The Mercury*, 26 June 2013,

<http://www.iol.co.za/business/companies/durban-to-nail-tender-riggers-1.1538042>

37. Tony Carnie, 'New route for R6bn fuel pipeline', *The Mercury*, 9 May 2008.

38. Irma Venter, 'Construction industry must deal with 'great anger' over collusion, says Upton', *Engineering News*, 12 August 2013, <http://www.engineeringnews.co.za/article/construction-industry-must-deal-with-great-anger-over-collusion-says-upton-2013-08-12>

39. Malusi Gigaba, 'Where the Transnet pipeline project went wrong,' Statement by Public Enterprises Minister Malusi Gigaba, Pretoria, 2 December 2012.

40. South Durban Community Environmental Alliance, 'Comments on the Transnet Multi Product Pipeline Proposal,' Durban, 7 July 2008. SDCEA suggested a variety of alternatives: 'Refurbishing the existing pipeline in an incremental manner (instead of doubling capacity), as maintenance is required, replacing the sections with a larger pipeline, using the existing route and servitudes, and installing additional pump stations, as and when required. Accelerating the upgrade of railways and public transport in Gauteng, so as to get more people and product off the roads to minimise transport-related congestion, fuel burning, emissions and associated health effects, by establishing urban transport networks to enable safe and affordable rail transport, linked to park and ride centres with connections to bus and taxi routes. Working with municipalities to encourage sustainable transport solutions and thereby accelerating growth, by enabling more people to access opportunities (e.g., in many countries, transport in the city centre is free).'

41. *Ibid.* On the biggest environmental issue, climate, Transnet was silent. According to SDCEA,

The Draft Scoping Report summary notes in 'TABLE 5-1: Summary of legal requirements that apply to the project and the EIA process' that the Kyoto Protocol is relevant, as it 'Commits a country to quantified emissions limitations and reductions' ... the rise of CO2 emissions that will be facilitated by the pipeline is immense, and is only referred to in the Draft Scoping Report as a potential legal problem, with no details provided.

42. Lloyd Gedye, 'South Durban's battle royal', *City Press*, 28 April 2013,

<http://www.citypress.co.za/news/south-durbans-battle-royal/>

43. Ishaam Abader, 'Rejection of the Final Environmental Impact Assessment Report for the Proposed Deepening, Lengthening and Widening of Berths 203 to 205 at Pier 2, Container Terminal, Port of Durban, KwaZulu-Natal Province,' Department of Environmental Affairs, Pretoria, 2 October 2013.

44. *Ibid.*

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45. Cornell University, 'We have a planetary emergency: Hansen, leading NASA climate scientist, urges unions to act', New York City, 23 October 2012, http://www.ilr.cornell.edu/news/GLIJamesHansen_102312.html
46. Academy of Science of SA, *Towards a Low Carbon City: Focus on Durban*, Pretoria, 2011, <http://www.assaf.org.za/2011/08/durban-on-a-pathway-towards-a-low-carbon-city/>
47. Pretoria's other multi-billion rand carbon-intensive investments in recent years include SA Airways plane purchases – and subsequent multi-billion rand annual bailouts – along with sports stadia widely acknowledged as 'White Elephants' by even Danny Jordaan, local host of the Fifa World Cup in 2010. Meanwhile, renewable energy is being rolled out very slowly – with some high visibility townships getting a few solar geysers but the country's world-class sunshine, wind and tidal potential going to waste (providing less than 5 percent of the country's power). In contrast, Shell received permission in 2013 to drill and frack the Karoo's fragile ecosystems.
48. *CityPress*, 'Infrastructure roll out to cost R844 million', 19 October 2012, <http://www.citypress.co.za/business/infrastructure-roll-out-to-cost-r844bn-20121019/>
49. Peter Bruce, 'Thick end of the wedge,' *Business Day*, 13 February 2012.
50. Ben Fine and Zav Rustomjee, *The Political Economy of South Africa: From Minerals-Energy Complex to Industrialization*, London, Christopher Hirst and Johannesburg, Wits Press, 2006.
51. David McDonald (Ed), *Electric Capitalism*, Cape Town, Human Sciences Research Council Press, 2008.
52. A. Spalding-Fecher, 'The Sustainable Energy Watch Indicators 2001,' Energy for Development Research Centre, University of Cape Town, Cape Town, 2000.
53. International Energy Agency, 'CO2 Emissions from Fuel Combustion, 1971-1998,' Paris, 2000; International Energy Agency, 'Key World Energy Statistics from the IEA,' Paris, 2000.
54. Republic of South Africa Department of Environmental Affairs and Tourism, *National Climate Change Response Strategy*, Pretoria, September 2004.
55. Patrick Bond, 'At Warsaw's COP19 climate summit, South Africa has no bragging rights', *Daily Maverick*, 12 November 2013, <http://www.dailymaverick.co.za/opinionista/2013-11-12-at-warsaws-cop19-climate-summit-south-africa-has-no-bragging-rights/#.UpzqZOKafeo>.
56. Republic of South Africa, *National Climate Change Response Green Paper*, Pretoria, 2010, <http://www.climateresponse.co.za>.
57. For more, see Patrick Bond, *Politics of Climate Justice: Paralysis above, movement below*, Pietermaritzburg, University of KwaZulu-Natal, 2012
58. United Nations, Report of the Secretary-General's High-level Advisory Group on Climate Change Financing, New York, 5 November 2010, http://www.un.org/wcm/webdav/site/climatechange/shared/Documents/AGF_reports/AGF_Final_Report.pdf
59. Hilary Joffe, 'Growth has helped richest and poorest,' *Business Day*, 5 March, 2008.
60. Geeta Kingdon and John Knight, 'Unemployment in South Africa,' Paper presented at the '10 year review of the South African Economy conference,' Stellenbosch University, 28-29 October 2005, <http://www.csae.ox.ac.uk/resprogs/usam/default.html>
61. <http://www.info.gov.za/speeches/2007/07062911151001.htm>
62. Environmental Performance Index, <http://epi.yale.edu/>
63. World Economic Forum, *Global Competitiveness Report 2012-2013*, Davos, September 2012, <http://www.weforum.org/reports/global-competitiveness-report-2012-2013> and same document for 2013-14.
64. SAPA, 'Cops handled 12 399 protests,' IOL News 19 September 2013.