
Gauteng Green Strategic Programme

Economic Development Sector Report
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I. Economic development

I.1. Status quo

This chapter presents an overview and analysis of strategies, policies, plans, frameworks and programmes of action¹ for a 'green economy' in South African and Gauteng. Though a wide range of economic development strategies has been sourced and analysed, it is not possible to reflect comprehensively on all aspects of *all* of these here. Rather the chapter focuses on national, provincial and municipal strategies, or elements of these strategies, that speak to the ideal of a green economy and the need for more sustainable economic growth paths. The following are included:

- Strategies that promote a green economy in the narrow sense, in that they propose either industrial strategy-style interventions to develop 'green economy sectors', or job creation programmes with 'green jobs' as the outcome. These are strategies that take an important but arguably limited view of what it means to create a green economy. They see the green economy as a particular set of industries in addition to other more mainstream sectors or sub-sectors with growth potential.
- Strategies that recognize that the day-to-day operational decisions of government, and in turn of firms that work with government, may ripple across the economy as a whole to create greener ways of doing business. These strategies do not explicitly target the development of one or other economic sector that can be preordained as 'green'. Rather they take the broader view that administrative choices and regulatory practices of government may create demand for greener inputs, processes, systems, outputs and waste by-products, *in every sector*.
- Strategic commitments that recognize how our economic trajectory will increasingly be affected by climate unpredictability, emerging global regulatory regimes destined to heavily penalize dirty economies, as well as resource constraints arising in areas such as energy, water, air-quality, waste management, and land-use, amongst others. These strategies address the green economy in the broadest sense. They focus on the need for fundamental structural transformation in the kind of economy we have – notably its resource underpinnings and its prevailing practices of environmental cost externalization – with the aim of laying foundations for future economic resilience.
- Strategies that entirely omit more sustainable economic choices, or that self-evidently negate the ideals of a green economy.

Before reviewing these strategies, this chapter provides a brief overview of the status quo of economic development in Gauteng.² The overview focuses on a set of five conundrums that,

¹ The convention in this chapter is to refer to all of these with the term 'strategies'.

² It is not appropriate, or indeed possible, to provide a comprehensive status quo analysis of every aspect of Gauteng's economy in this report. To do so would require an assessment of its sectoral and structural composition, the patterns of the space economy, the workings of the regional innovation system, the supply of skills relative to prevailing business needs, the survival and expansion rates of small entrepreneurs, the costs of doing business, and

through the lens of an envisaged future ‘green economy’, define current economic challenges and opportunities. This brief status quo situates the subsequent critical analysis of national, provincial and municipal strategies documented in the second part of this chapter, and anchors the proposed recommendations in the final section.

Conundrum 1: appropriate policy responses to the jobs-skills mismatch

Gauteng contributes approximately 34% of national Gross Value Added (GVA), whilst the wider region of cities and towns in and around Gauteng makes up 43% of the South African economy.³ This is the largest contribution of any of the country’s provinces.⁴ Furthermore, Gauteng’s economic growth rate was faster than the national average for much of the last decade, reaching above 5% in 2004 and 2005, and above 6% in 2006 and 2007.⁵

This strength in the Gauteng economy has been built on profound structural changes over the last few decades. Gauteng’s economy was originally based on mining, and on manufacturing activity closely associated with minerals extraction and processing. But recently the province has seen a relative decline in the weight of primary and secondary sectors, matched by strong relative growth in tertiary sectors.⁶ This change has been accelerating over the last few years. In 1995, primary and secondary industries made up 34,3% of the Gauteng economy, with mining contributing 3,7% and manufacturing 23,3%. By 2009, primary and secondary industries had declined 27,2%, with the share to mining having reduced to 3,3% and manufacturing to a mere 16,5%. By contrast, key tertiary industry sectors have seen dramatic growth. The finance, real estate and business services sector, which in 1995 made up 15,4% of the economy, has in some recent years grown at more than 11% per annum to now stand at 22,8%, overtaking manufacturing to be the largest contributing sector in the province. The change is pointedly illustrated by the fact that mining output shrank by -31,4% between 1995 and 2009, while the finance, real estate and business sector grew a phenomenal 158,4% over the same period.⁷

These changes are not necessarily problematic on their own terms. But a key challenge is that industries like mining and manufacturing have historically been relatively labour intensive, while the strongest growing components of the tertiary sector tend to employ fewer workers per unit of output produced. On average, over the period 2000-2008, each worker in Gauteng’s finance, real estate and business services sector produced R212 233 of Gross Value Add per annum.⁸ By contrast, over the same period, mining saw R165 094 of annual GVA produced per worker and manufacturing R192 164.⁹ Table 1 below presents a different view of the same thing. It shows: the average annual growth rate of employment per main economic sector

many other issues. This brief status quo overview instead provides a summary of the key economic challenges and opportunities facing Gauteng from the perspective of how to achieve a green economy.

³ (GCRO, The Gauteng City Region Review, 2011)

⁴ (GCRO, OECD Territorial Review Background Report, 2010, p. 1)

⁵ (Statistics South Africa (StatsSA), 2010, GDP 3rd Quarter 2010 and GDPR to 2009, excel tables accessed at <http://www.statssa.gov.za/Publications/statsdownload.asp?PPN=P0441&SCH=4795>)

⁶ (GCRO, OECD Territorial Review Background Report, 2010, p. 2)

⁷ (GPG, 2011; StatsSA, 2010, GDP 3rd Quarter 2010 and GDPR to 2009 op cit)

⁸ (In constant 2005 Rands)

⁹ (2008 and 2009 saw a reversal in the mining industry, as international commodity prices spiked in the early part of the 2008, and then the world financial and economic crisis hit late in the same year, followed by a dramatic weakening of the Rand, boosting export values. The number of employees in the Gauteng mining sector dropped from 74 648 in the third quarter of 2007 to 27 575 a year later, only slightly recovering to 31 011 in the third quarter of 2009. With this, productivity in the mining sector rocketed from R168 160 of GVA per worker in 2007 to R417 814 in 2008 and R355 202 in 2009. Own calculations from StatsSA Labour Force Survey time series data sourced from Quantec EasyData, and StatsSA, 2010, GDP 3rd Quarter 2010 and GDPR to 2009, op cit)

between 2000 and 2009; the average annual growth rate of GVA per sector; and a simple GVA elasticity of employment (or employment intensity of growth) by dividing the average annual employment growth by the average annual GVA growth for each sector. This means that for every 1% increase in GVA in the manufacturing sector there has been a corresponding 1,32% increase in manufacturing jobs. By contrast, a 1% increase in GVA in sectors such as wholesale & retail trade, transport & communication, and finance & business services, drives relatively smaller percentage changes in employment.¹⁰

Table I. Simple GVA elasticity of employment per sector in Gauteng, 2000-2009

	Average annual % Δ Employment	Average annual % Δ GVA	Δ Employment
			Δ GVA
Agriculture, forestry and fishing	3,00	0,71	4,22
Mining and quarrying	-15,37	-3,30	4,65 ¹¹
Manufacturing	2,42	1,83	1,32
Electricity, gas and water	11,87	1,83	6,48
Construction	7,50	10,82	0,69
Wholesale, retail, motor trade and accommodation	2,65	3,60	0,74
Transport, storage and communication	3,58	5,39	0,67
Finance, real estate and business services	6,53	6,64	0,98
Community, social, personal and government combined	2,30	3,08	0,75
Total	3,10	3,97	0,78

Source: Own calculations from StatsSA Labour Force Surveys, sourced through Quantec EasyData and StatsSA, GDP 3rd Quarter GDP and GDPR, November 2010

Compounding the challenge is that mining and manufacturing traditionally absorb unskilled and semi-skilled workers, whereas the work requirements of most tertiary industries, and especially much of finance, real estate and business services, tend to demand higher skill employees.¹² The result is a jobs to skills mismatch, with firms unable to source personnel with the requisite skills, and large numbers of unskilled and semi-skilled workers unequipped for the higher-skilled jobs that are increasingly available.

This mismatch between an increasingly service-sector dominated economy and a large lower-skilled workforce has created a major structural unemployment problem. In the first quarter of 2011 unemployment in Gauteng (on the official or narrow definition) stood at 26,9%. Counting

¹⁰ (This analysis is based on and updates that in Borat, H. (2009), 'Labour market theme trend paper', Gauteng 2055 long term development strategy unpublished theme papers, commissioned by the Gauteng Department of Economic Development and Planning, pp3-4)

¹¹ (Note that this means that for every 1% annual contraction in mining GVA between 2000 and 2009, there has a dramatic 4,65% shrinkage in mining employment)

¹² (This is not true in every respect of course. There is evidence that the apparent strong growth in finance, real estate and business services masks the fact that there has been a switch out of permanent worker employment practices in the mining and manufacturing industries, into temporary outsourced work arrangements. Firms providing temporary contract labour fall into the 'business services sector'. The measured drift in value and employment share to this industry therefore does not always mark an actual structural shift. See Tregenna, F. (2010), 'How significant is intersectoral outsourcing of employment in South Africa?', *Oxford Journal of Industrial and Corporate Change*, 19(5) October 2010, <http://icc.oxfordjournals.org/content/early/2010/03/12/icc.dtcq001.short?rss=1>)

in discouraged work-seekers, unemployment (on the expanded definition) was 31,8%.¹³

In the face of this challenge, government in Gauteng confronts a conundrum. It is inevitably under pressure to prioritise strategies that target sectors with the greatest employment multipliers, and in particular those more likely to absorb a larger number of low and semi-skilled workers. Unfortunately these often tend to be industries that are, by their nature, internally unsustainable, or contribute disproportionately to the severe sustainability pressures escalating across the world. This is so because they are:

- a) Still locked into the minerals-energy-complex which has historically dominated the South African economy.¹⁴ These are industries that are centred on, or that have close linkages to, mining, minerals processing and/or metals manufacture. They are unified by cheap, coal-based energy inputs and conventional ways of doing business that externalise the true costs of economic activity.¹⁵
- b) Focused on manufacturing of products for international or local sale, demand for which depends on a global culture of wasteful conspicuous consumption.

Conundrum 2: escaping the curse of resource endowments

For more than a century the continued rapid growth of the South African economy has been based on minerals extraction, and the upstream and downstream manufacturing and finance activities related to mining. The Centre for Corporate Strategy and Industrial Development (CSID) in a report for the Gauteng Department of Economic Development, summarises the situation best:

“The centrality of mining activities in the South African Economy in the turn of the 20th Century shaped the development of the manufacturing sector through diversification and extension of activities by the mining conglomerates. These activities included downstream mineral processing, engineering, the steel and chemicals sector, other manufacturing sectors, and banking. The development of the South African economy and the nature of capital accumulation was thus, and continues to be, highly skewed towards and organised around minerals and energy as core sectors.”¹⁶

The country’s extraordinary mineral resource endowment has therefore been its greatest economic asset. But it has also been its greatest constraint, in that it sets parameters for a path-dependent economic trajectory from which it is very difficult to escape. To make the point it is worth quoting the Minister of Trade and Industry at some length:

“The structural problems which underpin South Africa’s economy derive from the accumulation path established under colonialism and Apartheid. What emerged has been historically defined as a ‘minerals - energy complex’ in which low paid, generally unskilled labour was exploited to support an accumulation trajectory based primarily on capital intensive commodity based industrial activities and the export of basic commodities and low value add products. In the contemporary period this deep seated structural fault line has been exacerbated by the increasing financialisation of the economy. ... As a result formal employment growth has come

¹³ StatsSA (2011), Quarterly Labour Force Survey:1st Quarter 2011, Statistical Release P0211, accessed at <http://www.statssa.gov.za/Publications/statsdownload.asp?PPN=P0211&SCH=4910>

¹⁴ (The term ‘minerals and energy complex’ is credited to Fine, B and Z. Rustonjee (1996), *The Political Economy of South Africa: From Minerals-Energy Complex to Industrialisation*, Boulder, CO: Westview.)

¹⁵ (Marquard, A. (2009), ‘Renewable Energy Policy in South Africa’, Stellenbosch.

¹⁶ (CSID (2010), ‘The Development of an Industrial Policy for Gauteng Province: Preliminary Report’, unpublished report prepared for the Gauteng Department of Economic Development, January 2010, p23)

mainly from the services sectors particularly the wholesale and retail sectors and businesses services sectors, particularly outsourcing, logistics and private security. Because growth and employment creation in these sectors is considerably dependent upon credit extension and consumption both outcomes are vulnerable and unsustainable ... In other words growth along the existing path was not sufficiently under-pinned by growth in the production sectors of the economy. On the contrary SA experienced a phenomenon known as deindustrialisation in which its manufacturing sectors have declined and in some cases are near to collapse. These sectors, are of strategic importance to a sustainable economic growth trajectory because they are characterised by high economic and employment multipliers. Put another way the process of adding value to basic or primary commodities is both labour intensive (including at lower skills levels) and stimulates other economic sectors including by demand for inputs into the manufacturing process and in the downstream linkages in the production of other value added products, for export, retail and in the services sectors.”¹⁷

In other words, South Africa’s underlying problem is that its economic foundations have been built on commodity extraction, associated manufacturing and exports; because these productive sectors have recently underperformed the solution is to build a future economy based on commodity extraction, associated manufacturing and exports, but focusing a little higher up on the value chain through beneficiation.

The conundrum – that attempts to diversify out of the narrow range of unsustainable industries that dominate South Africa’s economy invariably build those same industries – can be illustrated by the automotive and automotive component parts industry.

Although the country’s auto and component parts industry represents less than 1% of world vehicle production¹⁸, it is significant within the context of the South African economy, and it is often claimed as an industrial strategy success story. In 2009, it contributed some R61 billion to South Africa’s total exports¹⁹, with R33,2 billion of this represented by vehicle exports and R27,8 billion by component parts.²⁰ In the same year it made up 5,9% of national GDP, with 2,7% contribution by manufacturing, 0,37% by importers, and 2,8% by retail sales. Within Gauteng, transport equipment manufacture is estimated to make up 1,8% of total provincial GDP.²¹

The industry has deep roots in South Africa, its birth commonly attributed to import substitution policies as far back as the 1920s. Further, its growth has a complex history through successive waves of local content support programmes, and, more recently, export

¹⁷ (Davies, R (2011), ‘The Industrial Policy Action Plan - a pillar of governments New Growth Path’, *Umsebenzi Online*, Volume 10, number 10, 4 May 2011, <http://www.sacp.org.za/main.php?include=pubs/umsebenzi/2011/vol10-10.html>)

¹⁸ (Powels, D. (2009), The South African automotive industry: a reflection on the first year of economic crisis, presentation to Automotive Industry Development Centre (AIDC) AIC Conference, 2009, accessed at <http://www.aidc.co.za/index.php?ct=1&pid=2171>)

¹⁹ (Down from R92,4 billion in 2008, before the global economic crisis)

²⁰ (Twine, T. (2011), ‘An analysis of the automotive sector in South Africa: a health check on the status of the sector, the past, present and future’, presentation to Automechanika Investor Conference, 9–12 March 2011, accessed at <http://www.aidc.co.za/index.php?pid=2708&ct=1>)

²¹ (Own calculations from Quantec EasyData, 2010)

incentives introduced in 1995 under the Motor Industry Development Programme.²² However, it is fair to say that part of the reason for the presence and relative success of the auto and component parts sector is the proximity of a mature metals and foundry industry²³, in turn based on the country's iron and other ore endowments, as well as the fact that South Africa holds 70% of the world's platinum and 20% of palladium, with both of these platinum group metals being essential inputs into a fast growing local catalytic converter industry.²⁴ In turn, unsurprisingly, vehicle and automotive component parts manufacturing is often identified in industrial strategy analyses as one of the sectors most worth supporting because of its backward linkage multiplier effects.²⁵

The implication is clear. Gauteng might aspire to build alternative, hopefully more sustainable, economic futures, but it will struggle to ignore the inherited basis for its economic strength. This inheritance – of enviable mineral resource endowments and mature industries built on the back of these assets – still looms large as a competitive advantage that 'must' be capitalised on, even while the short term benefit of this legacy drags the province down onto an ever more unsustainable growth path.

Conundrum 3: Reducing the cost of doing business

One of the competitive advantages of South African businesses has been that they have historically been spared significant input costs to production processes and commercial operations. It is often asserted that South Africa has one of the cheapest prices for electricity of any country in the world, a function of over-capitalisation of power-supply infrastructure in the 1970s, followed by a long period in which little to no investment was undertaken. While this is not the place for a detailed comparative price assessment, there is available evidence that South African businesses enjoy similar input price advantages over many international counterparts in such areas as office and industrial space, vehicle prices and taxes, motor fuel, and property tax.²⁶

However, these input prices are now beginning to rise. This in large part reflects the fact that thresholds have been reached beyond which it is no longer possible to artificially suppress the price of resource inputs through various practices of cost externalisation and deferral. For South Africans the point is best illustrated by the recent steep increases in electricity tariffs,

²² (Barnes, J. Kaplinsky, R, Morris, M (2003), 'Industrial Policy In Developing Economies: Developing Dynamic Comparative Advantage In The South African Automobile Sector', Trade and Industrial Policy Strategies (TIPS), accessed at <http://www.tips.org.za/node/366>)

²³ (See http://www.csir.co.za/msm/metals_and_metals_processes/news/news01.html: "Most foundries serve the mining industry, closely followed by the general engineering and automotive industry. South Africa ranks 19th in the world production figures in terms of tonnage cast with approximately 500 000 tons ... Globally developing countries are upgrading and expanding foundries. This being due to the automotive industry in which significant growth is predicted.")

²⁴ (See US Commerce Department, 'An overview of the South African automotive industry', http://www.just-auto.com/analysis/an-overview-of-the-south-african-automotive-industry_id86764.aspx: "The catalytic converter industry, with platinum group metals as the primary input, has shown a great deal of growth over the past few years and is one of South Africa's fastest growing industries.")

²⁵ (On CSID's (2010) analysis, it is the industry with the highest measured backward linkages of any of the Gauteng economic sectors analysed: "R1million increase in demand for the transport equipment sector can potentially induce a R3.36 million increase in output for its input sectors". The next highest are publishing and printing at R2,87 million and electrical machinery and apparatus at R2,81 million. Op cit, (2010), p52)

²⁶ (See for example, UBS, (2009), 'Prices and earnings: A comparison of purchasing power around the globe: 2009 edition; and Cushman and Wakefield Research (2011), Office space across the world: global office market report, 2011 edition.

but the price pressures are building in other areas such as office space (artificially low because of lax planning regulations that permitted urban sprawl), vehicle fuels, food, road tolls, municipal rates and service charges, and so on.

From one perspective, these resource price increases reflect the essence of what the green economy is all about. The pillars of a resource-intensive, resource-extractive minerals and energy complex economy were built on a foundation of cheap inputs – from the price of coal to the cost of labour forced into apartheid’s dormitory townships and homelands. The limits of this economic path are now being reached, and businesses are beginning to see costs long externalised and forgotten about rebound as sudden input supply ruptures and environmental disasters, all of which translate into unexpected price spikes.²⁷

This presents government with a conundrum in two respects. First, since businesses are always price sensitive, and investment decisions are contingent on predictability of low capital and operating costs over an extended period, government is always under pressure to work on behalf of the economy to keep the ‘costs of doing business’ as low as possible. But a sustainable economy depends on more prudent use of natural resources, and the only way to make sure that resources are not used wastefully, and preserved for future generations, is to ensure that they are valued at a level that their medium- to long-run marginal cost of replacement is factored into the extraction, production, transport and retail process. This will inevitably translate into price increases which will weigh on the balance sheets of existing firms. To truly achieve a green economy, government cannot shield business from these increases – at best it can help them navigate the inexorable transition to a higher price economy – but it is almost certain that many businesses will simply not be able to survive in an economy where resource constraints and replacement costs are properly costed and internalised.

Second, as prices begin to rise under conditions of supply constraints, and as environmental costs conveniently ignored over the years are re-internalised, the economy will see demand begin to increase for alternative goods and innovative services that will help allay or manage-down price hikes. Businesses will spend money on these ‘green’ goods and services. In aggregate terms this demand is not a cost to the economy; it is a strong market signal for investment, innovation and skills development in a business revolution, in everything from office environments to logistics chains to product designs to manufacturing plant configurations to auditing requirements, and so on. The targeted result is much the same as, and potentially at an equivalent scale to, the information technology revolution that has filtered across every facet of economic life over the last two decades, creating huge market opportunities as a result. It is very possible that the economy will expand in overall terms if these opportunities can be converted into new and growing segments of the economy. But at the level of individual firms there may be many not able to absorb the costs of new ‘green goods and services’, who will fail. The conundrum will become all the more visceral as carbon taxes and international import duties (indexed to an economy’s sustainability track-record) come into play in the years ahead. Government will need to manage very carefully this process of creative destruction. If managed well, the South African and Gauteng economy may see a moment of economic renewal and dramatic expansion; if managed badly, the economy may enter another period of crisis.

²⁷ Challenges with addressing acid mine drainage are probably the best current case in point.

Conundrum 4: Government itself dependent on wasteful resource consumption

In the matter of South Africa's economic dependence on businesses that wastefully consume large volumes of (historically low-priced) resource inputs, government in South Africa is not an innocent bystander. It is worth noting that the finances of local government, especially larger urban municipalities, are heavily dependent on the excessive consumption of water and electricity, on the generation of large volumes of waste, on the sale of more and more motor fuel in municipal areas, and on the continued growth of homes, offices and factories on which property tax can be charged. As the price of services and land increases under conditions of resource scarcity, residents and businesses will consume relatively less of each of these, impacting negatively on the stability and growth of municipal finances. Even while it might feel a strong 'moral obligation' to promote a green economy, local government will struggle with a structural disinclination to work towards more sustainable production and consumption patterns. Managing this conundrum will depend on municipalities finding innovative alternative sources of revenue to compensate for the loss on the sale of few units of electricity, water, waste removal, etc.

A similar position pertains at national and provincial levels, where tax revenues are still heavily dependent on larger industries. There is a large structural incentive for the fiscus to continue to be used to support established sections of the economy which provide the greatest relative share of tax resources. Correspondingly, there is less structural incentive to use national and provincial business on start-up firms in a new and untested segment of the economy. Other countries have begun to chart a long-term economic course which sees public-sector investment into an alternative, potentially sustainable growth path, based on the revenue accrued from older export and consumption driven heavy industry base. In this model 'green' growth is subsidised, at least for the foreseeable future, by the continued existence of inherently unsustainable industries. While this is a feasible, and perhaps unavoidable, way forward, it presents its own (obvious) contradictions, and will be a difficult path to navigate over the long run.

Conundrum 5: Trajectories to a green economic future

In addition to the conceptual and practical difficulties listed above, Gauteng is faced with the conundrum of adopting one of two possible trajectories, one involving a deeper transformation than the other, in its long term transition to a green economy. The first option is for Gauteng to become more efficient in the utilisation of resource inputs needed to produce a given quantum of economic output. This is an increased 'efficiency' trajectory, in which each unit of GDP would take fewer resources to produce in future than is the case currently. While this is certainly positive, and is a necessary condition for a greener economy, it is still possible that a rapidly expanding economy, with many more units of GDP produced, would still end up consuming far more resources than currently.

While increased resource efficiency per unit of economic output is a necessary condition, it is arguably not a sufficient condition for a green economy in the full sense. The alternative trajectory is to try to achieve an economy in which economic output continues to grow, but in which the *total* quantum of inputs required for this growth first plateaus and then declines in aggregate terms. This is an economy which moves beyond mere unit-input efficiency, to one that uses less and less resources in total terms for more and more growth. This would be a fully regenerative economy, reversing historical resource depletion and degradation through

sustained investment in natural capital. Conceiving of what this economy would look like, let alone how it would work, is not easy, for the simple reason that our current economic model is tied up in the idea that resources are extracted and used to make profit. In the present model, rehabilitation of a tattered environment may be something for corporate social investment divisions to put money into, but the perception is that there is no conceivable return on investment in ecological regeneration.

Getting to a green economy that is fully regenerative may not be possible within the current limits of thinking, social structure and available technology. However it is worth noting that there are hopeful starts along this path in recent embryonic work to (a) move beyond GDP as the primary measure to evaluate social and economic progress; (b) develop environmental accounts to capture and track natural capital stocks and values, since this accounting will be the condition for determining future ecological destruction and rehabilitation; and (c) to think about ecological goods and services as an economic sector in which jobs can be counted and value determined.

1.2. Policies and strategies in place

1.2.1. National strategies

A review of national government strategies, plans, frameworks and programmes of action indicates that the idea of a green economy entered the policy lexicon shortly after the start of the current term of office, 2009-2014.

Of course, policies and programmes that to all intents and purposes are about the 'green economy' have been made and executed well before 2009. One example is the Working for Water programme. Launched in 1995 by the then Department of Water Affairs and Forestry, Working for Water is in effect a special type of an Expanded Public Works Programme (EPWP) project. On a temporary basis it employs members of local communities to clear invasive alien vegetation, currently estimated to cover some 10% of South Africa. Since its inception the programme has cleared one million hectares of land, and given employment to about 20 000 people per annum, with a target of 60% women from very poor communities. The programme has expanded to some 300 projects across the country.²⁸ While not historically termed as such, Working for Water is a classic example of a 'green jobs' programme, where employment is created through the supply of targeted environmental or ecosystems services funded by government.

Such important legacy programmes must not be ignored. However it is fair to say that only over the last year-and-a-half has the notion of a green economy become fairly common-place in national economic strategy documents.

Medium Term Strategic Framework 2009

The first notable articulation of green economy commitments was in the 2009 Medium Term Strategic Framework, issued by the Presidency in July 2009. The MTSF is a foundation document for policies and strategies developed during the 2009-14 term of office, "meant to guide planning and resource allocation across all the spheres of government". It states that the

²⁸ (See <http://www.dwaf.gov.za/wfw/>)

“main focus of the current period is to minimise the impact of the economic downturn on the country’s productive capacity as well as jobs and poverty reduction measures, to identify opportunities for new areas of growth and economic participation, and progressively to set the country on a new growth and development path. Fundamental to the attainment of all (these) objectives is a growing economy, appropriately transformed, so that the benefits of growth are shared by all.”²⁹ With this focus in mind the MTSF sets out 10 strategic priorities. Strategic Priority number 9, ‘Sustainable resource management and use’, proposes a number of programmes relevant to sustainable economic development, with the key ones being to:

- “Implement the National Framework for Sustainable Development to ensure that the country follows a sustainable development trajectory for now and into the future;
- Promote innovation and diversification towards alternative production of resources;
- Pursue and explore further the concept of Green Jobs including scaling up labour intensive natural resources management practices that contribute to decent work and livelihood opportunities. In particular projects and industries are being pursued in the fields of marine aquaculture development, wildlife management, waste services and ecosystems rehabilitation programmes.”³⁰

This is a cogent first articulation of a green economy ideal. However it must be noted that the MTSF also has a number of other strategic priorities which are more ambiguous on the sustainability of the country’s economic choices. Strategic Priority 1, ‘Speeding up economic growth and transforming the economy to create decent work and sustainable livelihoods’, proposes that long run growth will depend on “cleaner, lower-energy technologies and green jobs”. But it is equally emphatic that:

“While recognising the need to move up the value chain in the medium to long term, industrial policy in particular must recognise that: ... for the foreseeable future, extraction and processing of minerals and related sectors, including heavy chemicals, will remain critical for exports, making support for its continued expansion and diversification, including through supportive regulation and adequate, cost-effective infrastructure, critical for development across the economy”

In the medium term, the MTSF states: “growth should come more from industries that can competitively meet the needs of South Africa and the region, and to some extent that can compete in the global market. The lead sectors already identified are automobile, chemical, metal fabrication, tourism, clothing and textiles as well as forestry.”³¹

The MTSF therefore leaves the reader unsure of whether a green economy agenda will only be activated over the medium to long term, or whether it will be pursued in the short term alongside continued support for legacy sectors, and beneficiation based on these.

Delivery Agreement for Outcome 10: Environmental assets and natural resources that are well protected and continually enhanced

The 2009 Medium Term Strategic Framework laid a foundation for a new process undertaken by national government in the current term of office, namely to develop Outcomes

²⁹ (Minister in the Presidency: Planning (2009), ‘Together doing more and better: Medium Term Strategic Framework (A framework to guide government’s programme in the electoral mandate period 2009-2014)’, July 2009, p7)

³⁰ Ibid (2009), p39

³¹ Ibid (2009, pp11-12)

Statements, with associated Delivery Agreements signed by responsible Ministers, holding departments accountable to achieving specific outputs. 12 Outcome Statements have been generated, roughly aligned with the 10 Strategic Priorities in the MTSF.

For the purposes of this analysis the Delivery Agreement for *Outcome 10: Environmental assets and natural resources that are well protected and continually enhanced* is important. The Delivery Agreement sets out:

- a) Some clear outputs related to the green economy which contribute to Outcome 10 itself;
- b) Outputs that fall to the prime responsibility of the Minister of the Environment, and so belong in this Delivery Agreement, but which contribute to the achievement of *Outcome 4: Decent Employment through Inclusive Economic Growth*

In respect of (a) the Delivery Agreement defines 'Output 4' as 'Biodiversity protected'. Under this is a 'Sub-output 4.4: Valuing ecosystems services'. The Agreement signals that the environmental costs of resource based services is currently not determined. It proposes as an indicator the "number of tools developed for the economic valuing of biodiversity and ecosystems services", and sets a target to "Determine environmental cost by 2014". It then lists key activities for this target as: "Encourage investment (in) ecological infrastructure"; "Improve investment in ecological infrastructure support jobs"; "Quantify the economic value of biodiversity and ecosystem services"; and "Promote incentives for conservation and improved ecosystem protection."³²

In respect of (b) the Delivery Agreement defines a number of cross-cutting sub-outputs, as follows:

- Under 'Sub-output 2: Environmental Sustainability', "Scaling-up expansion and implementation of environmental sector EPWP (Land Care, Working for Water, Working for Wetlands, Working on Fire, Working on Waste, Working on Energy, Working for Fisheries, Working for Woodlands)." The Agreement proposes the following important target: 1 156 00 EPWP work opportunities and 325 652 FTEs (Full Time Equivalents) by 2014. No related activities are defined.³³
- Also under 'Sub-output 2: Environmental Sustainability', is "Greening of municipalities or Ecotowns programme in 10 municipalities". The Agreement proposes as a target "2830 decent jobs by June 2012", and commits to the following activity: "Implementation of the green economy interventions by the local government and these include communication, education and regulation that will be necessary to ensure local green growth and job creation. Intervention to further include urban infrastructure, sustainable land use management, spatial planning and the efficient use of natural resources."³⁴
- As a contribution to 'Outcome 4, Output 2, Sub-Output 5', on the Green Economy, the Delivery Agreement states the need for "Green growth contribution to economic

³² Department of Environmental Affairs (2010), "Delivery Agreement for Outcome 10: Environmental assets and natural resources that are well protected and continually enhanced", p59

³³ Ibid

³⁴ Ibid

growth and employment, while preventing environmental degradation and pollution, bio-diversity loss and unsustainable natural resource use (a just transition towards a resource efficient, low carbon and pro-employment growth path)". In this regard it commits to having a Green economy plan approved by 2011, and projects the following key targets:³⁵

- Greater localisation of manufacturing (including) 60% of installed solar water heaters by 2014;
- Increase percentage of patents registered in the green industries sectors (waste, water, energy, environmental monitoring & management) from current baseline to 5 % by 2014;
- Calculate % spent on research, development & innovation for green industries development by May 2011;
- Increase number of masters and PhDs in green industries related sectors from current baseline to 20% by 2014;³⁶
- R11,7 billion provided by IDC for investment over the next five years in green industries;
- Assessment of the potential of a green development bond by 2014;
- 5% share of non-public works employment, as a % of total employment, in green jobs;
- 3% of GDP to be made up of the Environmental Goods & Services (EGS) industry by 2014;
- A higher rate of growth in the waste recycling industry to R6,5 billion by 2014;
- Finalise a carbon tax instrument by 2011.

The Delivery Agreement also lists 'Sustainable consumption' as an interesting 'sector specific output'. While no target is set, the Agreement commits to: "Formulate and adopt sustainable development performance monitoring to guide the integration of economic growth, social equity, and environmental protection, including measures for institutional triple bottom line accounting"; as well as to "Finalisation of the National Eco-label".

New Growth Path

The Outcomes Statements were formulated and published before the completion of one of South Africa's most important new economic strategy documents, the New Growth Path (NGP). The NGP was released in November 2010 as part of South Africa's decision to try reduce mass unemployment by creating five-million jobs by 2020. The NGP aims to "provide bold, imaginative and effective strategies to create the millions of new jobs South Africa needs" and further to "lay out a dynamic vision for how we can collectively achieve a more developed, democratic, cohesive and equitable economy and society over the medium term, in the context of sustained growth". The NGP proposes that this vision is to be achieved through "... identifying where employment creation is possible, both within economic sectors as conventionally defined and in cross-cutting activities."³⁷

³⁵ Ibid, pp102-104. Many of the targets are précised slightly to make their meaning clearer.

³⁶ It is not clear whether this means increase the number from the current baseline by 20%, or to 20% of some total. It is doubtful whether it is possible to increase the percentage to 20% of all masters and PhDs in three years

³⁷ National Department of Economic Development (2010), 'The New Growth Path: the Framework', 23 November 2010, p6.

The NGP makes commitments to a green economy in two ways. First, it gives recognition to the far reaching effects of global climate change, and the imperative for a carbon-intensive economy such as South Africa's to transition to one that manages risks and reduces its impact on scarce natural resources. In this respect the NPG acknowledges a "trade-off" between the near term costs and the future benefits of moving to a green economy³⁸, noting that:

*"The world economy faces far-reaching changes as a result of efforts to reduce global warming. While efforts to control emissions will impose heavy costs – especially on relatively carbon-intensive economies like South Africa – they also lay the basis for major new industries. More broadly, accelerating technological change promises to transform the world economy in the coming years, with new job opportunities in areas such as biotechnology and nano-technology."*³⁹

Second, the NGP identifies the green economy as a priority sector to support employment creation. Jobs Driver 3 is "Taking advantage of new opportunities in the knowledge and green economies"⁴⁰ In relation to this, the NGP envisages a number of targets and associated activities:

- In the 'green economy', "300 000 additional direct jobs by 2020, of which 80 000 in manufacturing and the rest in construction, operations and maintenance, rising to well over 400 000 by 2030." The NGP sees these jobs being in "Natural resource management and construction in the short to medium term; renewable energy construction and manufacture of inputs in the medium to long run". It proposes a range of actions in order to achieve these jobs, including:
 - IRP⁴¹ to identify options for renewable energy generation, with appropriate regulatory changes to follow;
 - Development of green industrial support package with IDC as champion and special measures for SMEs and co-ops;
 - Codes for commercial buildings to reduce energy use and waste;
 - Social pact to support greening the economy;
 - Targeted skills development;
 - Public works to drive environmental programmes, including recycling and community cleaning;
 - Technology and fiscal policies to support diffusion of green technologies for households and enterprises.⁴²

- In relation to the 'knowledge economy', "100 000 new jobs by 2020". Not all of these are in the area of the green economy. The NGP envisages jobs growth in knowledge intensive sectors such as ICT, higher education, healthcare, mining-related technologies, and pharmaceuticals. But it also specifically mentions knowledge intensive jobs growth in "green" technologies and in biotechnology.⁴³

In its discussion of Jobs driver 3 interventions, the NGP also mentions that, "Additional jobs

³⁸ Ibid, p2.

³⁹ Ibid, p4.

⁴⁰ Ibid, p9

⁴¹ The Integrated Resource Plan for Electricity

⁴² Ibid, p35

⁴³ Ibid, p35

will be created by expanding the existing public employment schemes to protect the environment, as well as in production of biofuels.”⁴⁴ The idea of public works environmental programmes is also picked up in Jobs driver 4, “Investing in social capital and public services”. Here the NGP mentions:

(G)overnment will set targets for growth in the public service to meet national needs. It will also establish rural, literacy, green and HIV-education youth brigades that engage up to a million young people over the next few years, combined with measures to expose young people to work experience through internships in the private and public sectors. It will also extend the Community Works Programme to more wards.⁴⁵

It is not entirely clear whether jobs in green youth brigades, benefitting a portion of one million young people over the next few years, is in addition to the public employment schemes and 300 000 direct jobs in the green economy noted as part of Jobs driver 3.

While the NGP makes a clear commitment to a green economy, it must be noted that it replicates the idea of sequencing economic interventions – seen in the Medium Term Strategic Framework of 2009 – that gives first priority to mining and manufacturing. In Jobs driver 4: “Main economic sectors”, the NGP articulates the need for strong ongoing support for the mining and manufacturing value chains, while building more “knowledge intensive sectors for the long run”. Inter alia it proposes strategies to:

- (Accelerate) exploitation of mineral reserves by ensuring an effective review of the minerals rights regime, lowering the cost of critical inputs including logistics and skills in order to stimulate private investment in the mining sector, and setting up a state-owned mining company that would co-exist with a strong private mining sector and that promotes beneficiation, as well as greater utilisation of the mineral resource base of the country for developmental purposes, including potentially through a sovereign wealth fund.*
- (Refocus) the beneficiation strategy to support fabrication (stage 4) (rather than only smelting and refining, which are both capital and energy intensive), including stronger measures to address uncompetitive pricing of intermediate inputs, such as where appropriate, export taxes on selected mineral products linked to clear industrial strategies.”⁴⁶*

The Green Summit, DBSA and the National Department of Economic Development

In May 2010, the national Departments of Economic Development, Science and Technology, Environmental Affairs and Trade and Industry jointly hosted a major Green Economy Summit. The objectives of the Summit were to “gather inputs in preparation for a national (green economy) plan and priority actions”; “identify and confirm ... key elements of a Green Economy path” and to “Start building national consensus on (this) path as an innovative way towards sustainable consumption and production patterns. More specifically, the Summit was meant to lay a foundation for a “Green Economy Plan to be presented to Cabinet by July 2010”. This was to incorporate:

- A supportive regulatory framework to develop green industries and sector action plans;*
- Market instruments to incentivise the use and production of cleaner and low carbon products without having a huge negative impact on production costs;*
- Greater localisation of manufacturing of materials in e.g. solar, nuclear, wind, hydro power, electronics;*

⁴⁴ Ibid, p12

⁴⁵ Ibid, p14

⁴⁶ Ibid, p12

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- (A) review (of) import duties ... to ensure highest level of local component manufacturing whilst maintaining competitive pricing;
 - (Integration of) the different work streams that occur at different sites and (scaling)-up of existing initiatives, including: expansion of green jobs employment opportunities through EPWP i.e. working for water, working for tourism, working for waste, people and parks, etc (and); acceleration of programmes supported by the Clean Technology Fund (\$500 million of the World Bank) to meet the renewable energy targets.”⁴⁷

By all accounts the Green Economy Plan was not presented to Cabinet in July 2010. However, work was taken forward by the Development Bank of Southern Africa (DBSA) on behalf of the national Department of Economic Development. In a report entitled “Programmes in support of transitioning South Africa to a Green Economy: Final Draft”, and dated 15 December 2010, the DBSA explains:

“An output of the deliberations of the Green Economy Summit held in May 2010 was the need to identify flagship programmes to demonstrate and showcase green economic activity. This was proposed as an initial step towards the development of a more integrated and comprehensive approach to the green economy, for adoption by Government. The Development Bank of Southern Africa was accordingly requested to identify green economy programmes and to develop a proposal to mobilise resources on a national basis to support these programmes’ implementation.”⁴⁸

This draft report synthesizes Phase 1 of a process of investigations and discussions⁴⁹ to identify possible green economy programmes, prioritized by social, economic and environmental sustainability criteria, as well as to explore a “funding mechanism” to support green economy initiatives. Phase 2 of the process is to involve more detailed programme design, and Phase 3 will see programme implementation.

The DBSA report evaluates a series of possible programmes according to criteria such as: the impact on jobs, the potential for new industry development and localisation, and spatial impact (specifically the potential for investment de-concentration). On the basis of this scoring, the following 16 programmes are identified as priorities:

1. Government leadership programme in greening public buildings and precincts
2. Scaled-up solar water heater roll-out
3. REFIT optimisation for large scale renewables and localisation
4. Expand off-grid options in rural and urban large scale infrastructure programmes
5. Sustainable waste management for 500 000 households
6. Up-scaling, expansion and improvement of the current ‘Working for’ Programmes

⁴⁷ (Green Economy Summit, 18-20 May 2010, <http://www.sagreeneconomysummit.co.za/2about.html>)

⁴⁸ (Development Bank of Southern Africa (DBSA) (2010), ‘Programmes in support of transitioning South Africa to a Green Economy: Final Draft’, 15 December 2010, p4.)

⁴⁹ (The paper explains: “The programme identification approach adopted in this project included the establishment of a project reference group, with representation from the Economic Development Department (EDD), Department of Environmental Affairs (DEA), Industrial Development Corporation (IDC) and DBSA. This reference group assisted with overall strategic direction in the identification of priority green economy programmes. EDD and DEA also facilitated reporting back into the Employment and Economic Cluster as co-chairs of the Green Economy sub-committee of the Cluster. Furthermore, a Roundtable was held with government departments on 26th October 2010 to share the approach of the work of Phase one and to get some sense of the roles and initiatives across government at the national level. Subsequent to this, on the 9th November 2010, a programme identification workshop was held at the DBSA with over 100 representatives from government, state-owned enterprises, development finance institutions, private and NGO sectors.”)

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7. Rural livelihood resilience through rainwater harvesting
 8. Reduce water losses in agriculture, municipalities and mining
 9. Strengthen demand-side management, through comprehensive municipal water metering systems
 10. Alternative technology for effluent management in small towns
 11. National payments for Ecosystem Services Programme
 12. Integrated sustainable agricultural production systems
 13. Promoting non-motorised transport in South African metros in support of BRTs
 14. Sustainable infrastructure and ecosystem integration
 15. Spatial development planning frameworks
 16. Local Government Green Built Environment Toolkit.

It is not possible to detail all of these programmes here, save to say that the paper provides a well thought through explanation of each intervention, and how it connects to key national targets. To note but one example, the “Scaled-up solar water heater programme” refers to the national government target for “renewable energy to contribute 10 000 gigawatt hours (GWh) of final energy consumption by 2013”. The programme envisages solar water heaters contributing 23% to this target, through the roll-out of one million solar heaters by 2014. The programme write-up references a “Draft South African National SWH Strategy and Implementation Plan”, which records that “6,3m low income households do not have geysers and are currently using stoves and kettles for water heating”, and that “approximately 400 000 geysers burst each year and could be replaced with SWHs”. It concludes on this basis that the market demand for SWH is immense.⁵⁰

An interesting final part of the DBSA report is a discussion of a possible Green Economy Resource Mechanism. In summary the paper suggests that an actual Green Economy Fund should not be established, but that instead a “virtual mechanism”, involving an “engagement platform between public and private financing institutions”, be designed. This will channel either public or private money to where it is needed for implementation, based on the specific needs of particular programmes and projects.⁵¹

The DBSA report has laid a basis for further programme development. By all accounts it also articulates with the further drafting of a more fully fledged Green Economy Plan by a unit within the Department of Economic Development. Unfortunately this was not acquired at the time of writing.

Industrial Policy Action Plan 2: 2011/12 – 2013/14 (revised 2011)

The Industrial Policy Action Plan is South Africa’s overarching industrial strategy, under the stewardship of the national Department of Trade and Industry. The current version of the plan, released in February 2011, builds on the work of IPAP 1, approved by Cabinet in August 2007, and slightly revises and updates the so-called IPAP 2, released in February 2010 for the period 2010/11-2012/13.⁵²

The February 2010 version of IPAP 2 introduced “‘Green’ and energy-saving industries” as an

⁵⁰ (Ibid, p12)

⁵¹ (Ibid, p25)

⁵² (Department of Trade and Industry (2011), ‘Industrial Policy Action Plan: 2011/12-2013/14’, February 2011. The plan makes it clear that in future the IPAP will be released on a rolling three year basis, but updated annually.)

important new sector for industrial strategy support in South Africa. In the February 2011 update, “Work on Green Industries introduced in the previous iteration of IPAP now finds expression in a scaled up programme”⁵³ It is noteworthy that the sector is renamed simply ‘Green industries’, from the previous ‘Green and energy saving industries’, although there still remains a significant leaning towards interventions in the area of alternative energy.⁵⁴

The sector is introduced as follows:

“Increasing concerns about carbon emissions and climate change will have a profound impact on our economic landscape, introducing both threats and opportunities. There is a growing threat of increasing ‘eco-protectionism’ from advanced industrial countries in the form of tariff and non-tariff measures such as carbon taxes and restrictive standards. Increasing energy costs pose a major threat to manufacturing, rendering our historical resource-intensive, processing-based industrial path unviable in the future.

However, there are significant opportunities to develop new ‘green’ and energy-efficient industries and related services. In 2007/2008, the global market value of the ‘Low-Carbon Green Sector’ was estimated at £3 046 billion (or nearly US\$5 trillion), a figure that is expected to rise significantly in the light of climate-change imperatives, energy and water security imperatives.”⁵⁵

A variety of intervention areas and targets are spelled out in the plan. A key selection of these⁵⁶ can be briefly summarised as follows:

- “Roll-out of national solar-water-heating programme – manufacturing and installation capacity”. As its key target IPAP proposes to increase installation of Solar Water Heaters from 35 000 units per annum to 250 000 units per year by 2014, and to increase manufacturing from 20 000 units to 200 000 units. Amongst the milestones listed for this outcome to be achieved IPAP2 emphasises that *dti* and the National Regulator for Compulsory Specifications (NRCS) will “publish amended National Building Regulations to make it compulsory for new buildings and upgrades to homes to install solar water heaters and other energy-efficient building requirements.”
- “Development of an industrial energy-efficiency programme”. IPAP 2 envisages a programme that will counteract higher energy prices, reduce emissions and create new goods and services. It commits that by the first quarter of the 2011/12 financial year the Industrial Energy-Efficiency Programme will be finalised and launched, focusing on “energy-efficient motors and scaling up of the NCPC⁵⁷”.
- “Demonstrate viability of Concentrated Solar Thermal (CST) power as a major renewable energy generation source”. IPAP 2 commits to demonstrating the commercial viability and economic linkages of this new technology, by ensuring that IDC led financing of a demonstration plant in South Africa is available by the first

⁵³ (Ibid, p16.)

⁵⁴ (Ibid, p97.)

⁵⁵ (Ibid, p97.)

⁵⁶ (Others, not summarised here, are “Solar and wind energy”, “Strengthen water-efficiency standards”, “Biomass Energy”, “Waste and Waste Water Treatment”, and the “The South African Renewables Initiative (SARi)”

⁵⁷ (The National Cleaner Production Centre of South Africa, established at the World Summit on Sustainable Development in 2002, and hosted by the CSIR. See <http://www.ncpc.co.za/>

quarter of 2012/13.

- “Clean and Multi-Energy Stoves”. The aim here is to intervene at the household level to introduce new and cleaner cooking technologies, in a way that also creates a demand for a new low-technology manufacturing activity. IPAP 2 states that the dti will work with the Department of Energy to “redefine the drive for electrification as one of energisation” and ensure “affordable access to clean cooking fuel and stoves”. In support of this roll-out, new standards for domestic fuel-burning stoves will be designed by the third quarter of 2011/12.
- “Water- and Energy-Efficient Appliances”. This intervention uses: “... a combination of appliance and building standards, contracting for energy savings in a manner similar to contracting for renewable energy and public procurement to stimulate the wholesale uptake of water- and energy-efficient appliances.” IPAP 2 proposes to “Finalise a mandatory national labelling scheme for fridges and air-conditioners” by the first quarter of 2011/12, and, by the third quarter of this year, to “Integrate SANS204 into the building code, requiring minimal thermal performance and efficient water heating in all new buildings.”⁵⁸

The IPAP 2 for 2011/12 – 2013/14 also has a number of other interventions that could be counted against the ‘green economy’, but which are contained in other sections. These include the promotion of organic agriculture under “Agro-processing”, and the development of an electric vehicle (and extension across the country of associated infrastructure) located under the “Automotive Industries sector”.

However it must also be acknowledged that IPAP lists for attention a very wide range of sectors that are in no way green, ranging from “Upstream Oil and Gas Services and Equipment”, to “Downstream minerals beneficiation” and “Plastics and pharmaceuticals”.

Industrial Development Corporation

The Industrial Development Corporation (IDC) was established in 1940 to drive industry support programmes in South Africa. It remains today one of the country’s premier development finance institutions, providing debt and/or equity finance to private-sector led industry development projects in line with selected areas of industry focus. In April 2011 the IDC was given a mandate to dramatically expand its funding flows to in excess of R100 billion over the next five years on projects in line with the New Growth Path. Of this, some R25 billion will be allocated to projects within the green economy. A new “Green Unit” has been established to manage this funding. Established in April 2011, it has assumed responsibility for a number of green economy projects previously carried by other IDC units, and begun to actively respond to new project opportunities in the following main sector areas:

1. Bio fuels⁵⁹
2. Non-fuel based green / renewable energy
3. Energy efficiency and demand-side management
4. Fuel based green energy (such as waste to motor fuels)

⁵⁸ (Department of Trade and Industry (2011), op cit, pp103-112.)

⁵⁹ (a set of projects recently moved from the IDC’s Agriculture Unit)

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5. Emissions and pollution mitigation
 6. Business processes and services.

At present approximately 200 projects are either in the process of being formulated, or in implementation stage. The bulk of these, some 100, are in renewable energy, and a further 50 are in the area of fuel-based energy. A good example of a project in this category is a partnership with the City of Johannesburg to explore fuels from waste collected in the city's landfill sites, fuels which may in turn be used to power vehicles adapted for gas propulsion within fleets at both provincial and local government levels.

The IDC's project selection is guided by emerging policy frameworks from the Departments of Economic Development and Trade and Industry, and the Corporation's Research and Information Group has worked together with DBSA to investigate where and how jobs may best be generated in the green economy.⁶⁰ While this strategy work gives some direction, and there is an understanding of targets in each of the sectoral areas lists above, the IDC is also clear that its funding choices are based principally on the projects that are forthcoming from the market, and its due diligence on the commercial viability of those projects.

Draft National Strategy and Action Plan on Sustainable Development 2010 – 2014

The Draft National Strategy and Action Plan on Sustainable Development (NSSD) is a successor document following on from the National Framework for Sustainable Development in South Africa (NFSD), released in July 2008. The NSSD was gazetted in May 2010 as a draft for consultation.⁶¹ It is being led by the National Department of the Environment. The purpose of the NSSD is to provide “the Strategy and Action Plan to support the implementation of the NFSD”, through the following key elements and their associated strategic goals:

1. Directing the development path towards sustainability
2. Changing behaviour, values and attitudes; and
3. Restructuring the governance system and building capacity

In terms of these elements the NSSD sets out a number of strategic goals. In terms of element '(1) Directing the development path towards sustainability', the NSSD proposes, amongst others, the goal of “reducing resource use as well as the carbon intensity of the economy”. In terms of '(2) Changing values and behaviour', the NSSD proposes goals such as “developing and promoting new social and economic goals based on sustainability”, “promoting environmentally responsible behaviour through incentives and disincentives”, and “building a culture that recognises that socio-economic systems are dependent on and embedded within ecosystems”. To promote changes in behaviour the document refers to the need to introduce fiscal measures and educational and awareness building programmes.

However, a little discordantly, the *Action Plan* component of the NSSD is not based on these three elements or their associated strategic goals. Rather it refers back to the original organising framework of the 2008 National Framework for Sustainable Development. The NFSD set out five strategic priorities. Priority 3 of the NFSD was ‘Economic development via investing in sustainable infrastructure’. It is now recast in the draft NSSD as Priority 2,

⁶⁰ (A report that the DBSA says will be released in “early 2011”.)

⁶¹ (Department of Environmental Affairs (2010), ‘Draft National Strategy and Action Plan on Sustainable Development, 2010-2014’, Notice 393 of 2010 in Republic of South Africa, Government Gazette, Volume 539, Number 33184, 14 May 2010.)

‘Towards a Green Economy’ with the express intention of broadening “beyond the original focus on sustainable infrastructure”. This Priority lists four strategic goals, which are elaborated with key interventions and targets as follows:

- Goal 1: “Increasing the contribution of the Environmental Goods & Services (EGS) sector to employment and GDP”. This includes strategic interventions to develop a clear policy framework for EGS as an economic sector, to incorporate it as a sector within the Industrial Policy Action Plan, and to design developmental incentives and subsidies. The target is to grow the EGS sector by 10-12% over a five year period from the measured 2009 baseline.
- Goal 2: “Reducing the resource intensity of the economy and promoting cleaner technologies”. This envisages strategic interventions to revise industrial policy to favour industries using lower energy or materials input per unit of production, to determine the environmental costs and benefits of beneficiation, to increase the use of recycled materials and reduce the use of hazardous inputs. Specified targets are to reduce overall demand for energy by 12% by 2015, reduce energy use in industry and mining by 15% by 2015, and to reduce energy use in transport by 9% by 2015.
- Goal 3: “Investing in sustainable infrastructure”. This entails interventions to introduce minimum standards and sustainability criteria for new buildings and within construction practices, to retrofit old buildings, and to introduce a green procurement framework / rating system for public buildings. Targets include 15% reduction in energy use in the commercial and public buildings sector, and 10% reduction in use by the residential sector, by 2015.
- Goal 4: “Promoting sustainable livelihoods and building local economies”. Strategic interventions include facilitating opportunities for self-employment and self-reliance based on sustainable use of natural resources, in areas such as eco-tourism, renewable energy generation and eco-systems rehabilitation. They also include incorporating conservation and eco-systems restoration jobs in the Community Works Programme, and implementing the environment and culture components of the Expanded Public Works Programme. This goal targets the generation of 4 million job opportunities by 2014, and the corresponding reduction of unemployment to 14% by the same date.⁶²

1.2.2. Provincial government strategies

Medium Term Strategic Framework / Programme of Action

Like national government, the Gauteng Provincial Government also developed a Medium Term Strategic Framework at the start of the current term of office. Like its national counterpart, this MTSF, also called the GPG’s Programme of Action for 2009-2014,⁶³ has a number of references to the creation of green jobs and the promotion of green industries. The MTSF is organised around seven strategic priorities. Priority I is “Creating decent work and building a growing, inclusive economy”. To this priority, GPG attaches the following outcome statement:

⁶² (Ibid, pp19-24.)

⁶³ (Gauteng Provincial Government (2009), Gauteng Provincial Government’s Programme of Action: 2009-2014, July 2009.)

“To stimulate redistributive economic development to create decent work, sustainable livelihoods and reduce income inequality”, and commits to a range of interventions to realise this outcome. These include the “creation of decent work”; to “create green jobs”; “invest in public infrastructure”; “develop and implement sector strategies”; “implement an appropriate provincial response to the economic crisis”, and so on. More specifically the Programme of Action promises:

“A new Gauteng trade and industrial policy will be developed and implemented and related sector strategies pursued to support productive sectors of the provincial economy, particularly labour absorbing sectors. The aim is to create more decent work and other opportunities for sustainable livelihoods, particularly among poor communities and those who have historically been excluded from reaping the benefits of economic growth. Key sectors in which government interventions will be undertaken to support the creation of employment and other economic opportunities will include the promotion of tourism, small medium and micro enterprises (SMMEs), cooperatives, the creative industries (including the craft sector), manufacturing (including mining and agricultural beneficiation), food and beverages, the auto sector and green industries.”⁶⁴

The Programme of Action also undertakes to promote:

“... sustainable energy for the economy and development, by encouraging the sustainable use of energy in the economy and socio economic development; this will include the utilization of clean and renewable resources; and support sectors that create green jobs as a means to mitigate the impact of climate change.”⁶⁵

Developmental Green Economy Strategy for Gauteng

The Developmental Green Economy Strategy for Gauteng was prepared for the Gauteng Department of Economic Development in December 2009 and January 2010. It was requested by the then MEC for Economic Development, Firoz Cachalia, on the basis that research into how other parts of the world were responding to the global economic crisis had revealed that other city regions and states were making heavy investments in green jobs and industries as drivers of their recovery. The Strategy was not formally adopted by the Gauteng Provincial Government, but it laid a foundation for both the Gauteng Employment Growth and Development Strategy (GEGDS) and the current process to develop a Green Strategic Programme for Gauteng.

The Developmental Green Economy Strategy for Gauteng is arguably important for three reasons. First, it eschews a narrow interpretation of the green economy as just an additional set of industry clusters deserving dedicated support. Instead it builds a case for an economy that will become more sustainable only if investments are made in areas not traditionally considered ‘economic’ in the strict sense, including water, waste and transport.

Second, it sets out a compelling argument for an economy that grows in and through reducing its environmental impacts, and does not shirk from absorbing environmental costs routinely externalised to future generations or other parts of the world. The strategy states:

“Global economic thinking is currently experiencing a paradigm shift from the current capital-focussed resource-intensive development towards what is being called the “Green Economy”. A

⁶⁴ (Ibid, p7.)

⁶⁵ (Ibid, p8.)

Green Economy is one in which business processes are infrastructure reconfigured “to deliver better returns on natural, human and economic capital investments, while at the same time reducing greenhouse gas emissions, extracting and using fewer natural resources, creating less waste and reducing social disparities.” Thus a Green Economy “grows by reducing rather than increasing resource consumption”. These economies have also been termed low-carbon economies.”⁶⁶

And further that:

“It should be noted that the costs due to over-use of environmental services WILL be absorbed in the economy at some point, whether or now in the future. What is important to note that it is significantly cheaper to absorb the costs now than to wait until there are major failures in the economy”⁶⁷

Third, in a range of areas, the Strategy models concrete targets for jobs creation on the back of resource savings and economic sustainability investments. To name but one example, it indicates a target of 10 400 jobs in Gauteng from investments to secure a 20% reduction in energy use by 2025.⁶⁸

Gauteng Employment Growth and Development Strategy

The underlying ideas in the Developmental Green Economy Strategy for Gauteng were taken up in Gauteng’s premier five year economic development plan, the Gauteng Employment Growth and Development Strategy (GEGDS). The GEGDS was approved in May 2010. It envisages an economy shifting to an “endogenous economic growth trajectory that is based primarily on “innovation”, “green growth” and “inclusivity”. On green growth, the GEGDS says:

“Gauteng will not have an economy that provides decent work and economic opportunities for all, unless it can become ... a green, environmentally friendly economy, which capitalises on the enormous economic value to be gained by investing in green processes and products, and which uses existing resources in a more efficient and sustainable manner, thus reducing the carbon footprint of Gauteng. Gauteng needs an economy based on green technologies, green jobs, green energy and green production processes that reduce the ever higher input costs stemming from unsustainable resource use”⁶⁹

The GEGDS conceives of its proposed interventions as a series of drivers, either within or cutting across ‘5 pillars’ of focus. Pillar 1, “Transforming the Provincial Economy through improved efficiency”, anchors a cross-cutting driver to ensure, “Green Economy and Sustainable Resource Usage (Energy Efficiency, Water and Waste Management)”. Pillar 2, “Sustainable Employment Creation”, in turn anchors a cross-cutting driver on “Green jobs”.

While no concrete targets are set in the GEGDS, the first driver is clear that Gauteng “intends to use the green agenda as an opportunity to stimulate new industries and create new forms of economic activity, by collaborating with business, labour and civil society.” It proposes an

⁶⁶ (Spencer, F. (et al) (2010), ‘A strategy for a developmental green economy for Gauteng’, report prepared under the auspices of the Gauteng City-Region Observatory (GCRO) for the Gauteng Department of Economic Development, 18 January 2010, pp25-26.)

⁶⁷ (Ibid, p30.)

⁶⁸ (Ibid, p18.)

⁶⁹ (Gauteng Provincial Department of Economic Development (2010), ‘Gauteng Employment Growth and Development Strategy’, May 2010, p5.)

emphasis on creating a renewable energy sector, that facilitates investments in local renewable energy technology development and manufacturing; and on investment in programmes and projects that will create green jobs.⁷⁰

The second driver, on green jobs, targets a series of programmes and projects to create formal and informal employment, including in solar water heaters, concentrated solar power, waste management & recycling, and food security.⁷¹

The Automotive Industry Development Centre

The Automotive Industry Development Centre (AIDC) is a support, training and development facility for the automotive industry. In Gauteng it was launched under the auspices of Blue IQ, although it also has a separate presence in Port Elizabeth.⁷² It has identified the following key projects as making a contribution to a greener economy in Gauteng:

- *Cleaner Production*. This involves the conceptualisation and implementation of a comprehensive programme targeting manufacturing firms, to identify opportunities to reduce energy and resource usage. The programme involves initial energy assessments, followed by implementation of defined solutions.
- *LPG Taxi Conversion Programme*. This has entailed a pilot project to convert 70 taxis to operate dually on LPG and petrol. The 70 taxis are currently on the road and being evaluated, and the project implementation targets a scaling up to 150 taxis in 2011.
- *Domestic Waste Management Programme* - A pilot project was conducted in 2010 to identify possible support for informal domestic waste pickers / sorters to provide a more hygienic and efficient method for what is essentially a recycling function. A new trolley was designed for selected individual, and support was given around how to improve logistics in buy-back centres and how to acquire safety apparel. The project has now been scaled up with more than 60 individuals targeted for further support.
- *Landfill Gas Project*. This is a pilot project with the City of Tshwane and a Rosslyn automotive assembler⁷³ on the extraction of landfill gas from the Onderstepoort landfill, for either electricity generation or supply as a natural gas substitute for local industry. An initial landfill assessment has been done to determine the content and quality of gas available, and the project is now undertaking pumping trials, and financial evaluations to demonstrate the commercial viability of harvest the gas in this and other Tshwane landfills.
- *Solar Panel Manufacturing*. The AIDC, together with automotive and other related partners, are investigating the opportunity to localise the manufacture of photo-voltaic technology for industrial and domestic use in the country, and possibly for export. This project is still in its concept phase.
- *Foundry Sand Recycling*. The aim of this project, still in preliminary stages, is to evaluate

⁷⁰ (Ibid, p42)

⁷¹ (ibid, p46)

⁷² (See <http://www.aidc.co.za/index.php?cid=12&pid=3&ct=1&dc=1>)

⁷³ (With possible financial support from the IDC)

opportunities to recycle foundry sand, currently declared as toxic waste and costly to dispose of. An opportunity has been identified to declassify the waste, using various processes to render it non-toxic and acceptable for re-use in either foundries or the construction sector.

- *Green Forum.* A Green Forum has been established – comprised of local Original Equipment Manufacturers (OEMs) in the automotive sector, the City of Tshwane, the Centre for Scientific and Industrial Research, the Innovation Hub and the AIDC, to explore collaborative green projects in the Tshwane area. These will be projects either in the manufacturing sector or within municipal services. The group has been meeting quarterly and various projects have been initiated from it, including the landfill gas project noted above, and possible solar water heating installations for showers within workers’ change rooms.⁷⁴

1.2.3. Local government strategies

In general terms local government in Gauteng has not yet formulated any clear agendas on building a green economy. But positively there is now significant movement towards defining such strategies, with a number of municipalities having identified the need for a green economy strategy to be devised over the next year, listing this as a commitment in their draft 2011-2016 5-year Integrated Development Plans. Others have already convened internal working groups to start the process, or have moved to procure specialist support to design a green economy framework before the end of the 2010/11 financial year.⁷⁵ Still other municipalities have convened summits in which a future growth path for the municipal area and/or, more specifically, a green economic future has opened for public debate.⁷⁶ The following is a brief summary of some of this movement across particular municipalities.

City of Tshwane Draft 5-Year Integrated Development Plan 2011-2016

The City of Tshwane’s draft 5-year IDP contains a few key references to building a green economy. Under Strategic Objective 2: Economic growth and development and job creation, the municipality states:

“The provision of alternate energy should be investigated, and tested, in order to support a green economy.

The CoT will be conducting business differently, and the green economy approach will be central to our initiatives. By-laws will be implemented, and the CDM desk will be operationalized to ensure a reduced carbon footprint in CoT.”⁷⁷

Further reference is made to the implementation of “green economy by-laws” and a “CDM desk” as a planned service for beneficiaries, in order to achieve “Environmentally friendly investments and developments”⁷⁸

In the draft IDP, these objectives are mandated to the Tshwane’s Agriculture and

⁷⁴ The text for this section was kindly provided by Fayaz Sacoor, Business Development Manager for the AIDC. It has been marginally adapted and edited.

⁷⁵ (The municipal financial year ends on 30 June).

⁷⁶ (Notable examples are the City of Tshwane’s New Growth Path workshop in April 2011, and the West Rand District Municipality’s Green IQ Summit in May 2011.)

⁷⁷ City of Tshwane Metropolitan Municipality (2011), ‘Draft Tshwane Integrated Development Plan (2011-2016) for 2011/12, March 2011, p98.

⁷⁸ Ibid, p99, also p144.

Environmental Management Department. However, it is worth noting that the Tshwane Department of Economic Development's Local Economic Development Division has been tasked to develop a green economy framework before the end of June 2011.⁷⁹

City of Johannesburg Draft 5-year Integrated Development Plan 2011-2016

Over the last term of office there has been, within the City of Johannesburg, a growing understanding of and commitment towards the need to drive a local green agenda. The City's Growth and Development Strategy in 2006 contained a number of references to a more sustainable city, including commitment to the principle of 'Sustainability and environmental justice' in the Development Paradigm section of that document. This stated, inter alia:

"As a matter of principle Johannesburg must become a more 'sustainable city' by anticipating and trying to manage the effects of environmental change ... If nothing else this means recognising and trying to limit the impact of urban processes of production and consumption on the environment. Concretely this implies pro-actively preserving and expanding the city's 'green assets', and adopting more environmentally sustainable practices. These are not nice-to-haves, pulling money away from more important expenditure on economic or social development. At the end of the day investments in environmental assets and sound environmental practices shield the poor from the costs and risks of urban-environmental disasters, pollution, and environmentally related public health dangers. They may also save the city and its residents a lot of money."

While such statements gestured towards an understanding of the intersection between the environment and the economy, they were not yet a clear interpretation of what it means to build a 'green economy'. However, this early policy work laid a foundation for: (a) commitments over the last five years to invest in green infrastructure, and to regard this as an economic intervention; and (b) recognition in the latest draft IDP of the need to move rapidly to develop a green economy strategy. With regard to (a), Johannesburg has successfully implemented a project to plant 200 000 trees in poorer parts of the city over the last five years, and its 2011-16 IDP commits to planting a further 300 000 in the term of office ahead. As regards (b) the City's draft IDP recognises that: "the idea of a Green Economy' has begun to feature prominently in political statements, as well as in policy and strategy commitments", and that there is a need for "a shift from conventional economic growth trajectories towards greener alternatives". Accordingly the draft IDP sees the green economy as "a strategic response to enable Johannesburg to move towards a low carbon and greener growth trajectory", and it proposes that: "Johannesburg's placement as the biggest contributor to South Africa's growth, of all the metros, means that it is perfectly placed to effectively deliver on a green economy that puts job creation and economic development in a sustainable manner at the forefront of the City's work."⁸⁰

In the IDP's draft Sector Plans – the plans that commit specific departments to concrete achievements over the next five years – Johannesburg undertakes to develop and implement a green economy strategy in two places. The draft Economic Development Sector Plan commits the City to a five year programme to "Support Implementation of Green Economy interventions", which will see R2,5 million spent on developing a "Green Economy Strategic Framework" in 2011/12, and a further R2,5 million on a more detailed "Business Plan" in

⁷⁹ Interview, 18 April 2011. Specifically the Economic Research section of this department.

⁸⁰ City of Johannesburg (2011), Draft 5-year Integrated Development Plan: 2011-2016, March 2011, pp67-68.

2012/13.⁸¹ Identified interventions will be rolled out thereafter. The draft Governance Sector Plan, which includes the targets of the Central Strategy Unit, responsible for city-wide strategy formulation, commits the CSU to spend some R300 000 in 2011/12 generating a “local response and implementation programme” / “operational plan” that responds to GPG’s emerging green strategy.⁸²

West Rand District Municipality Draft Integrated Development Plan 2011/12 to 2015/16

The draft five-year IDP of the West Rand District Municipality offers an extraordinary vision. It proposes, first, that by 2016 the four local municipalities making up the district will be merged to create a new metropolitan municipality, and second that by 2016 this new municipality will be the ‘greenest’ in South Africa. This vision is given the name ‘Green IQ’:

“Vision 2016 includes a holistic approach to environmental concerns, involving recycling, renewable energy and beautification of our streets and parks by the planting of 10 000 trees. There are opportunities for developing economies to benefit from climate change mitigation strategies and the West Rand will be making a strong case for private investors to assist in the growth of green and sustainable industries. Renewable power generation is our priority sector. We are currently investigating the replacement of street lights with more sustainable and affordable alternatives as well as the installation of alternative energy sources in our housing developments. ... The Green IQ is a commitment to make the West Rand the greenest district in South Africa and to provide an African example of how sustainable development is not just a good choice for development, but the best choice.”

The Draft IDP explains that Green IQ, a strategy to be further developed, is comprised of five pillars, under the banners People, Economy, Environment, Energy and Innovation. With regards to the Economy pillar the IDP states that the West Rand economy will be “re-structured to seize the opportunities of tomorrow (and) to foster local resilience. The Environment pillar promises to “ensure that precious natural resources are available for future generations (and to) create a low-carbon built environment dedicated to quality of life”. Under the Energy pillar the IDP says that the West Rand will “facilitate the creation of new independent power producers to generate renewable, affordable and reliable energy to power new industries and create competitive advantages.”. And with respect to Innovation, the vision is to establish the West Rand “as a centre of excellence in green technology and green living; ... attract the best minds; and ... encourage and support the industries of the future”.⁸³ Although short on detailed objectives, targets and actions,⁸⁴ this is a confident and inspiring vision anchored almost exclusively on the core ideals of a green economy.

Other local government strategies

It is notable that in spite of the clear and compelling vision of the West Rand District Municipality to be the greenest in the country by 2016, no corresponding commitments are articulated in Mogale City’s draft 5-year IDP, aside from a passing mention of an organic

⁸¹ Ibid, p104.

⁸² Ibid, p137

⁸³ West Rand District Municipality (2011), Draft Integrated Development Plan 2011/12 to 2015/16, March 2011, pp24-25.

⁸⁴ Indeed the Green IQ ideas do not seem to carry through at all into the detailed strategic objectives and actions listed in pages 45-106, except that R750 000 of the 2011/12 budget is allocated to ‘greening’ as per the pillars of this strategy. Ibid, p77

farming project in the projects section of the plan.⁸⁵

A number of other 2011-2016 municipal IDPs were not available at the time of writing. Those for Ekurhuleni, Sedibeng and, within this, Emfuleni, would have been interesting in that these are the heartlands of heavy industry in the province. But these IDPs could not be sourced. However, it is known that Emfuleni has, as of March 2011, established a task team to develop a green economy strategy.

1.3. Critical analysis

The section provides a brief appraisal of the strategies, policies, frameworks, plans and programmes of action outlined above. A number of general findings are made, notably with respect to progress in developing green economy strategies in each sphere of government, and the clarity and coherence of strategic commitments across the spheres. However the core terms of our critical analysis are the extent to which the various strategies have successfully grappled with, and found solutions to, the key conundrums set out in section 2.

1.3.1. General findings

Uneven progress in the development of green economy strategies across spheres

In general it can be said that an increasing number of strategies, policies, frameworks, plans and programmes of action are articulating visions and objectives that address the sustainability of current economic development paths, and/or are defining commitments that will drive clear activities and interventions to build a green economy. The uptick in concern over the sustainability of the country's economic trajectory, and the growing certainty around concrete measures and budget allocations to develop a green economy, are to be welcomed. However, it is fair to say that across the spheres of government progress in determining green economy agendas is still very uneven.

There has been impressive, even if slightly disjointed, progress in setting a green economy agenda at the national level. Across the New Growth Path, IPAP2, the Delivery Agreements for Outcomes 4 and 10, and an emerging green economy plan in the Department of Economic Development, a body of policy commitments has begun to emerge that signal clear interest and intent in building a green economy. It is laudable that clear and measurable targets have been set, such as that in the New Growth Path to "create 300 000 jobs in the green economy by 2020, rising to 400 000 by 2030", or that in the Delivery Agreement for Outcome 10 to ensure "Greater localisation of manufacturing (including) 60% of installed solar water heaters by 2014". Most importantly, these commitments have begun to be implemented through the allocation of clear funding streams, in particular the goal that the Industrial Development Corporation (IDC) spend some R25 billion supporting private sector green economy projects over the next five years.

In the Gauteng Provincial Government there has also been notably progress in taking on board a green economy agenda. Important milestones have included: the recognition in 2009 of green jobs as a component of recovery responses to the global economic crisis; the subsequent commissioning of the Developmental Green Economy Strategy for Gauteng; the positioning of

⁸⁵ Mogale City Local Municipality (2011), Integrated Development Plan, 2011-2016, p96.

the green economy as a key outcome of the Gauteng Employment Growth and Development Strategy (GEGDS); the take-up of green economy projects by the key economic development agencies of the province; and the process for which this report has been generated, a Green Strategic Programme for Gauteng. However, unlike national government, Gauteng has not yet been able to knit together this valuable policy thinking and embryonic project work into a clear set of measurable and auditable commitments and targets.

Local government in the province is the least advanced, although there are signs that dedicated green economy strategies are now either (a) being prepared or (b) being called for in draft Integrated Development Plans as something to be done at the start of the 2011/16 term of office. For example, the City of Johannesburg's draft 2011/16 IDP, in sector plans covering both the Central Strategy Unit and the Department of Economic Development, provides that a green economy strategy will be devised in 2011/12. That municipalities have picked up the call for green economy strategies is certainly encouraging. But it would have been preferable if IDPs for the term of office starting in May 2011 already contained specific targets and interventions, ideally aligned with national and provincial commitments, for achieving real traction on green economy visions.⁸⁶

Residual uncertainties because of duplicate target setting processes

The progress made at a national government level in profiling the ideal of a green economy, and more importantly setting out clear targets for achieving this ideal, must certainly be acknowledged. However, there is residual confusion resulting from the way that a succession of key strategy documents has been developed.

A good example is the lack of clarity in the status of the commitments in the Delivery Agreement for Outcome 10 (in turn a contribution to Outcome 4) vis-à-vis the commitments in the New Growth Path. Outcome 10 commits the country to: "scale up Green Jobs opportunities through EPWP II to I 156 00 EPWP work opportunities and 325 652 FTEs (Full Time Equivalents) by 2014". The New Growth Path promises 300 000 jobs in the green economy by 2020. It is not clear what the relationship between the two commitments is. For the sake of national clarity the New Growth Path ought to have specified how its goal of 300 000 jobs by 2020 is different from the temporary work opportunities committed by Outcome 10, but perhaps builds on this commitment by ensuring that the short-term EPWP II work prepares beneficiaries with skills to enter full time employment in the emerging green economy. Alternatively, or in addition, the Delivery Agreement for Outcome 10 should be revised to reflect the New Growth Path commitment, at least in respect of how many of the 300 000 permanent jobs will be created by 2014.

Uncertainty about the meaning of a 'green economy'

In spite of very positive progress in developing new strategies, and calling for new strategies to be developed (for example in municipal IDPs), the interpretation of what a green economy means, and what should constitute green economy commitments, remains somewhat elusive. In many strategy documents the green policy choices offered appear somewhat generic and non-specific, amounting to no more than broad framing statements rather than concrete and implementable commitments. The extension of these statements into programmes of action,

⁸⁶ (Final IDPs will be decided after the local government elections of 18 May 2011. It is possible that this finding may be overtaken by events, with final IDPs containing clearer targets and programmes of action)

with explicit targets, projects for implementation, resources and roles & responsibilities, is often missing.

Of course in many cases it would not be reasonable to expect that an overarching strategy statement goes into so much detail. This is the proper place of programme and project plans. But in some cases the lack of any specificity or precision in the strategy conveys the impression that a broad policy statement is being made sans any concept of what it will involve to give effect to it, and that the lack of certainty is in turn rooted in a poor understanding of what a 'green economy' is and what it means to build it.

Perhaps the clearest expression of this concern comes from the National Treasury itself. In his 2011/12 budget speech, the Minister of Finance committed "funding amounting to R800 million ... over the next three years for "green economy" initiatives." However the detail of this funding was not provided. Instead, the Minister undertook that "Specific allocations will be made in the Adjustments Budget" that National Treasury routinely issues mid-year. Various observers have interpreted this as Treasury saying that implementable proposals for how to go about building the green economy are not yet concrete enough to receive funding. For example, the editor of the Mail & Guardian wrote:

*"Why is there no new cash for industrial policy in general and green jobs in particular? The deputy director general in the national treasury, Andrew Donaldson, was clear: there are limits to what the state can and should do. "We've got to be careful who we might squeeze out," he said. Pressed on the coming COP17 climate change conference in Durban and the need for South Africa to show progress, he said: "The green economy debate now has to get real." In other words, someone has to put some substantive, credible proposals on the table before the state starts throwing cash around."*⁸⁷

A limiting pre-occupation in green economy strategies with energy issues

In a number of strategies there seems to be a restrictive pre-occupation with energy as the main, indeed at times the only, green economy sector for public investment. Certain strategies even seem to conflate green economy and renewable energy solutions. For example the ANC's Elections Manifesto for the May 2011 local elections commits to working within municipalities to: "Create work opportunities and support domestic manufacture of components in the green economy through further installation of solar-heater geysers in new low cost houses". No other aspect of the green economy is mentioned in the manifesto, leaving the impression that the jobs and investment in the green economy will only come from renewable energy component manufacture and installation.

Although securing alternative energy supplies is certainly a critical green intervention, achieving a green economy will take much more than this. A green economy will only be realized through profound structural shifts and bold interventions across multiple dimensions, in everything from cleaner production processes through to securing jobs in ecosystem service industries.⁸⁸ The full multi-sectoral nature of the changes required needs to be recognized in policies and strategies, lest plans become a series of disconnected and piecemeal interventions.

Policies without projects and projects without policies

⁸⁷ (<http://mg.co.za/article/2011-02-25-the-plan-that-wasnt-there>)

⁸⁸ (UNEP, Towards a Green Economy, 2011)

Especially in national government, but also increasingly in provincial and local government, there are encouraging moves on two fronts. On the one hand, clear green economy policies and strategies, fortified by the requisite ambition for dramatic change, have been developed. On the other, change has already begun to be leveraged through funded projects. Early implementation, which nurtures understanding of what is at stake and what is to be achieved, and which grows capability, experience and confidence in the difficult task of actually transforming an economy, is essential if policies and strategies are to mean anything. In this respect the project work of agencies such as the Industrial Development Corporation and the Automotive Industry Development Centre is heartening.

However, despite the progress on these two fronts, it is concerning that nodes of policy formulation and nodes of dynamic action do not always seem to be lined up. It is not always specified what projects will give effect to the targets set out in some strategy documents, such as Outcome 10 or the National Strategy and Action Plan on Sustainable Development (NSSD). Nor is it made clear which bodies with implementation experience in intervening in the economy will carry project responsibilities. But the reverse is also true. The IDC and the AIDC, in spite of apparent impressive performance in project execution, seem to be multiplying projects without the guidance of a clear strategy as to what and how new markets are to be connected or constructed, or what and how specific medium- to long-term green economy outcomes are to be achieved. Policies without projects are meaningless. But a wide sweep of projects un-informed by a clear strategy is equally so.

1.3.2. Specific findings with respect to whether strategies have successfully grappled with key economic conundrums

Strategies are internally contradictory, often proposing green strategy programmes alongside deeply unsustainable economic choices

A number of strategies discussed above place green economy commitments alongside stated intentions to build other, often inherently unsustainable, economic clusters. The national Medium Term Strategic Framework, the New Growth Path, and IPAP 2, amongst others, all propose green economy targets while simultaneously giving priority to the continued expansion of mining and heavy or light industry processes locked into the minerals-energy-complex.

Other strategies, that initially appear robust in their interpretation of the green economy, recommend interventions without considering either the total life-cycle impacts of the products and processes they are promoting, or the underlying structural conditions for real long-term resource sustainability of these goods and services.

Finally, some key planning documents entirely omit concepts and commitments that reflect a concern with the sustainability of economic development, reflected in growing resource constraints and price pressures.

Of course, the conundrums facing the South African and Gauteng provincial economy have to be acknowledged. And indeed it is understood that there are great difficulties in unavoidably having to build an economy from the inherited base of resources endowments, while trying to escape the shackles of that base at the same time. This is especially true when it is evident that

the extractive activities and resource intensive industries associated with that base may yet provide mass employment to millions of workers still underprepared for jobs in a high-value services economy.

It would be unreasonable to expect government to summarily drop any and all support for activities related to mining or manufacturing. But what is urgently needed is for strategies to articulate a 'growth path' which clarifies exactly how, over what period, and through what processes, a transition from an unsustainable economic past and present to a green economic future will occur. To not clearly chart the route of this transition is to leave commitments to foster a green economy standing side by side with commitments to build an old economic base intrinsically reliant on resource intensive minerals extraction and processing, and unsustainable practices of cost-externalisation, in a way that is deeply contradictory.

It is not feasible to grow a green economy, *properly understood*, within a fundamentally unsustainable economic system of resource extraction and cost externalisation. Green economy choices inherently preclude other economic choices, if the whole package is to remain 'green'. If this is not understood, the green economy becomes simply another flavour-of-the-month business cluster – hopefully to get as much money as mining or manufacturing in industrial strategy outlays. In this approach, stated commitments to a more sustainable economy appear as mere lip-service to the green economy ideal, which in a proper reading necessarily requires much deeper structural transformation.

Misunderstanding that green economy is about high skill manufacturing and service sectors only, where low skill workers have no relevance

In a number of strategies there is an assumption that the green economy equates to a small and exclusive compartment of the economy composed of high skill individuals and high technology processes. Witness, for example, how the New Growth Path talks about the green and knowledge economies together. On the basis of an assumption that the green economy is not potentially a mass employment driver for the kind of workers South Africa currently has, mining and manufacturing industries continue to be privileged in a number of industrial strategies. This is to miss obvious opportunities to use typical green economy interventions to provide a lot of work for those with lower skill levels. Through expanded public works programmes in, for example, land rehabilitation and restoration, through payments for ecosystems services to communities, through the development of self-sustaining community gardens and parks, and through small scale urban and organic agriculture a large number of jobs can be created while developing and preserving green infrastructure.

At present, only a few strategies recognise that investing in economic activities that build on or enhance the earth's natural capital, or that reduce ecological scarcities and environmental risks, form the foundation of a green economy. Fewer still see the enormous potential job gains to be made in these activities, especially for lower-skilled workers. Even those that do recognise the potential make only passing reference to the envisaged benefits, providing little to no clarity on how this economy can be shaped to maximise employment opportunities.

Missed opportunities

There are a number of missed opportunities, in some of the strategies, to develop a fuller understanding of the green economy beyond simply targeting a set of businesses perceived to

fall within a 'green economy' cluster. For example the New Growth Path contains a lengthy discussion of interventions to address some key micro-economic constraints holding back the economy. Included is a discussion of policy improvements needed in areas such as broad based black economic empowerment, trade policy, or competition policy. This would have been an ideal place to discuss possible changes to government procurement policies to include tender criteria that support businesses that meet specified green standards in their products and business processes. This could have linked up with the passing reference in Outcome 10 to finalise a "National Eco-label". This particular gap highlights the wider point: there is very little strategy thinking around how to develop a green economy by deliberately constructing economy wide market demand for green goods and services.

In a similar vein there is no integrated strategy to provide support for green economy specific research and development. Mention is made, in Outcome 10, of sponsoring masters and PhD students doing work on the green economy. And of course the IDC's massive R25 billion funding stream will certainly foster business led R&D. But this falls short of a clearly targeted plan to promote systematic R&D and innovation across universities, science councils and the private sector. South Africa and Gauteng might here draw inspiration and lessons from countries like Korea, which have developed a global approach that regards green systems, skills, processes and knowledges as the fundamental underlying goal in every societal choice as part of global green positioning strategy.

Little to no discussion on the long term trajectory towards an alternative economy

Lastly, the available economic strategy documents chart a course for the next five years, and in a few cases the next decade. None look to the long term and engage the issue of what kind of radically different economic models are conceivable beyond the thresholds of current technological fixes, and under conditions of dramatically altered societal expectations of human progress and 'return on investment'. A future green economy depends on this kind of long term strategic forecasting being initiated as soon as possible.

1.4. Recommendations on key objectives and targets

1.4.1. Proposed objectives and interventions

Completion of work on the Gauteng Growth Path

There are two current opportunities for government to map a path, away from the home base of a minerals-energy economy, to the destination of a green economy. At national government level the primary opportunity is in the work of the National Planning Commission, due to issue a 'national plan' to 2025 for public consultation within the next few months. In Gauteng, the ongoing work around Vision 2055, and work started in 2010 by the Department of Economic Development under the banner of a new 'growth path for Gauteng', present an equivalent moment. It is proposed that Gauteng Provincial Government and Gauteng municipalities take advantage of the consultation process around the NPC's draft plan to initiate this discussion, and consolidate a clear long term strategic path of its own through ongoing work on Vision 2055 and a long-term economic growth path for Gauteng.

Distillation of national green economy targets into provincial and local strategies

Various targets have been set in an array of national strategies and plans. In any Gauteng-specific strategy the contribution that Gauteng will be making *within* these targets, and what contribution Gauteng could make *over and above* these targets, need to be distilled.

For example, it may be valid for Gauteng to assert, on the basis that it represents a third of the national economy, that it will work with national government to realise at least 100 000 of the 300 000 green economy jobs projected by the New Growth Path as a *Gauteng* outcome for 2020. But it is not impossible that national government envisages that many of these jobs, to result from national government efforts alone, will be realised in more rural provinces. Even if this is the case, governments in Gauteng may still commit to a 100 000 jobs target on the strength of what they believe may result from their own efforts. This would in effect mean that national government may ultimately be able to claim results over and above the original 300 000 jobs target.

Carefully forged inter-governmental agreement around the targets, and what they mean for each sphere, followed by ongoing co-ordination, will therefore be essential.

Monitoring, documenting, reporting and targeting elements needed

Responding to the issue of how to measure its progress towards a green economy, Gauteng can opt for tracking efficiency improvements in relation to GDP-inducing growth, or for a broader interpretation of an economic analysis inclusive of ecological stocks and resource-generating growth. To achieve a green economy in the latter and fuller sense, Gauteng government is urged to pursue the development of a system of environmental accounts. Globally, this is taking the form of a System of Environmental and Economic Accounting (SEEA)⁸⁹. These are “aggregate measures of economic progress” that track well being, poverty eradication and natural capital depletion.⁹⁰ Other economic and statistical analysis measures, such as an ecological footprint and the use of materials in economic activities, will also be key to measuring the externalisation of the costs of economic activities.⁹¹

This recommendation places monitoring frameworks and mechanisms as critical if Gauteng is to evaluate changes in natural capital and it’s progress of green economy transitions as a whole. In the development of these measures it will be critical to intersect with national processes identified in, for example, Outcome 10, to “formulate and adopt sustainable development performance monitoring” and to “develop tools for the economic valuing of biodiversity and ecosystems services”.

A Gauteng Green 3-year rollout plan

It is recommended that the outcomes, targets and objectives of the Green Strategic Programme for Gauteng are taken forward into a 3 year cross-sectoral roll-out plan. This will be a plan for the transformation of internal operations within the Gauteng Provincial Government. It will mean detailing the short, medium and long term programmatic roll-out of targets and key objectives by designated government agencies.

As part of a 3 year implementation programme, the policy recommendations, interventions

⁸⁹ (UNEP, Towards a Green Economy, 2011)

⁹⁰ (UNEP, Towards a Green Economy, 2011)

⁹¹ (UNEP, Towards a Green Economy, 2011)

and targets in various existing documents need to be implemented. This is because there are numerous policy processes across a number of sectors that have proposed targets yet to be implemented. In particular, the Strategy for a Developmental Green Economy for Gauteng identifies specific economic interventions and policy measures within sectors of water, energy, food, waste and mobility to for a Green Economy for Gauteng's economy. We recommend that the 3-year rolling programme is therefore inclusive of the targets identified in the Strategy for a Developmental Green Economy for Gauteng, which should be revised on an annual basis. A task team within Gauteng's Department for Economic Development should also be appointed to take responsibility for monitoring out this process.

A Go Green Gauteng campaign

A 'Go Green Gauteng' communication and education campaign across the province, and particularly in local municipalities should run parallel and compliment the 3 year implementation phase of key green commitments. This marketing campaign comprises two parallel programmes.

First, a communication campaign, tailored for the province's municipalities and municipal owned entities, is needed to assist in coordinating the implementation of the Gauteng Green 3 year roll-out plan. This should involve a module-based course for municipalities to equip local government representatives with the necessary insight and skills in transitioning towards a green economy.

Second, running alongside a government-communication programme, a mass publicity campaign is needed to market the green economy to Gauteng citizens and businesses. The primary aim, apart from boosting the province's identity as a green city region internationally, will be to increase an understanding of what a green economy means locally, and build market demand for commercially viable green goods and services in every corner of the economy.

Continue to earmark and upscale green economy investments

Gauteng Provincial Government needs to continue undertaking economic analyses that identify emerging green investment opportunities for provincial programmes of action. In this regard, it is crucial that province localises its green economy work at multiple points in the supply chain to retain its the labour market share of green jobs. The growth of a regional value-chain of green 'industries', feeding into each other, and ideally not relying on imported technology and processes, should be a key focus. A key part of upscaling existing green economy investments is for provincial and local government to jointly develop a package of regulatory and fiscal measures that prop-up fledging green industries. This green stimulus package may target a number of low hanging fruit. One is to stipulate clear requirements that the tenders, procurement processes and design standards for provincial housing programmes, or health facilities construction and management, conform to sustainability criteria.

Opportunities for local green strategies

In general, local municipalities are lagging in their development of green strategies relative to where national government is. But this lack may also be an opportunity. Metropolitan and local municipalities may take advantage of emerging clarity in some national strategies to either benefit their own locally focused programmes, or compound the results anticipated at national level. For example, it would be a pity if local green strategies were to be formulated in the

absence of an understanding of where R25 billion of IDC funding for green private sector investments is flowing. There may well be opportunities for municipalities to envelop these IDC supported industries with complimentary programmes that build market demand for those industries' products and services. Similarly it would be useful for local municipalities to signal to national departments and agencies where local government needs innovative green products and services from the private sector.

This means that local strategies in a city-region context such as Gauteng cannot be developed in isolation of equivalent strategies in the municipality next door, or that being led by other spheres. Through a collective strategy development process, a strong emphasis should be placed on the mutual benefits of investing in a green economy through joint investments and procurement in areas such:

- Smart meters;
- Rainwater harvesting technology;
- Food value and supply chains for the dual benefit of (1) greening production, storage and logistics processes and (2) ensuring benefits to local communities;
- The supply of alternative fuels through, for example, harvesting of landfill gas;
- The demand for alternatives fuels through fleet retrofitting and re-engineering;
- New processes and technologies for land care and rehabilitation, and other similar ecosystem goods and services programmes.

1.4.2. Possible targets

Targets and associated interventions will be more fully developed at the Green Strategic Programme workshop on 20 May 2010. Indicatively though, possible targets may include:

- 100 000 of the targeted 300 000 national green jobs to be created in Gauteng by 2020;
- All municipalities in the province will have developed locally relevant green strategies by end 2011/12;
- Gauteng Provincial Government, working with municipalities in the province, will adapt procurement requirements and regulations to encourage business own-investment in green practices, systems, products. Whether a business runs operations on the basis of green systems will be a criterion that receive at least a 10% weighting in all tenders by 2015;
- Municipalities and province will introduce a sustainability star-rating system rating all businesses by agreed criteria by 2013;
- Gauteng provincial government will work with local government in the province to establish a joint "green products and services advisory bureau" by 2013. Governments in the province will not procure stock, equipment or fleet for public use unless rated green by the advisory bureau after 2015. The bureau will also work to advise business on greening production processes;
- Gauteng Department of Economic Development, working with local departments of economic development, will develop a targeted industry support programme supporting green infrastructure and eco-systems services industries (e.g. the programme will look at the model provided by the AIDC and establish an advice and training centre, develop practice in facilitated interactions between industry players, etc).

1.5. Conclusion

Gauteng plays a central role from a city-region perspective in the shift towards a green economy. Gauteng is positioned strategically from an economic power perspective to drive the transition towards alternative, green economic development paths. Spear-heading such a transition is more about an employment and job-generating transition than an environmental campaign if the financial resources or benefits accrued from investing in resource efficiency and productivity are re-invested in poverty-reduction measures or programmes⁹². This is based on our key finding across Gauteng's green work that the environmental imperative of change needs to be infused with economic and social outcomes. Although this is the fundamental principle underpinning sustainable development at large, it is critical that employment and poverty eradication strategies recognise this nexus.

Given that our development is inextricably linked to our resource base and consumption, and that the Gauteng economic space also faces serious unemployment challenges, economic development is as much about pro-growth and pro-jobs, as well as pro-environment⁹³. Fundamentally transforming the nature of economic development towards a green economy therefore implies realising growth and employment opportunities from less polluting and more resource efficiency activities, including energy, water, waste, buildings, agriculture and forests; and related structural changes such as switching from traditional resource-intensive economic sectors⁹⁴. The power of the green economy is that it is not a model premised on employing less people, a model which has been the centre of many jobless economic recovery programmes globally, but about generating employment in ecosystem service industries that require high labour inputs.

Central to Gauteng's rethinking of the nature of future economic development is how the province defines the 'green economy' and what conditions are seen to constitute the transition to this type of economy.

⁹² (UNEP, Green Economy Report, 2011, p. 2)

⁹³ (UNEP, Green Economy Report, 2011, p. 2)

⁹⁴ Ref here?

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