

## STRATEGIC PATHWAY 1

# Moving from a resource based economy to a green economy

Prepared as input into the Gauteng Provincial Government G2055 process

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## 1. Moving to a green economic growth path – the key issues

Gauteng houses 23,7% of the total population in the country, making it the smallest Province in South Africa but with the largest number of people. This population is rapidly expanding due to both natural births and in-migration to Gauteng and its surrounding areas. The region saw its population grow at 2,7% per annum between 2001 and 2011, from 9 388 855 to 12 272 263 as of the last census. As a fast-growing city-region, Gauteng's requirements for basic services such as food, water, sanitation and energy are rapidly increasing, and provincial and local government are having to roll out infrastructure and housing to meet growing demand. The 2011 census results suggest that this delivery has largely kept pace with increased demand, in most areas. But the nature of delivery has largely omitted more sustainable options and approaches: delivery has tended to be in the form of linear systems based on increasing rates of material and resource consumption, with institutional lock-in for traditional ways of providing for basic needs based on the fact that municipal revenues depend on the consumption of more water, energy, land and fuel, and the generation of more solid and liquid waste.

Contributing some 34,5% of national GDP as of 2011, Gauteng plays an important role in South Africa's economic success and future prospects. As the economic engine of the country the province may be economically wealthy, but it is poor in terms of water, air, land and sources of energy. Gauteng is also beginning to feel the rebound effects of an historical tendency to externalise the costs of development to future generations or other parts of the country or world. This includes for example pollution from mining activities, seen as unavoidable in the past, but which is now increasingly impacting on the region's economic competitiveness and job creation potential.

Gauteng is also starting to experience the effects of climate change, leading to increased disaster vulnerability and exacerbating resource scarcity, further undermining the sustainability of the current development path. The region is both affected by this dynamic, and a major cause of it. South Africa is one of the worst per capita carbon emitters in the world and certainly the biggest emitter on the African continent due to an historic addiction to "cheap" energy derived primarily from coal-fired power stations. With the rapidly increasing demand for energy (approximately 5% per annum) and the fact that a significant percentage of the population still needs to access the electricity grid, there is a strong likelihood that emissions will continue to grow rapidly.<sup>1</sup> Gauteng plays a significant role in this challenge, being heavily reliant on fossil fuels for energy, and responsible for about one third of South Africa's energy consumption, predominantly from Eskom's coal fired power stations in Mpumalanga. Further, where industries generate their own energy using coal as a primary source, this tends to be of lower grades, meaning that Gauteng's carbon emissions load is extremely high.

Understanding how Gauteng is located within the context of these cross-cutting policy concerns is fundamental in transitioning the region towards a more sustainable growth path. If we imagine Gauteng's future to be one in which economic growth is competitive, attractive, inclusive and labour-absorbing, the region will have to transition out of an economy that is based on excessive, inefficient and wasteful resource use, and that currently externalises the costs of resource-intensive development. For Gauteng to put itself on a path fundamentally different from its current one, a new type of development trajectory needs to emerge where financial resources are invested in infrastructure systems, industries and business processes that are reconfigured to deliver better returns on investment in natural, human and economic capital, while at the same time reducing greenhouse gas emissions, extracting and using fewer natural resources, creating less waste and reducing social disparities.”<sup>1</sup>

## 2. Context, challenges and opportunities

### ***The policy context***

The challenge of transitioning the economy onto a more sustainable growth path is a formidable one. And until fairly recently, positive development have been almost exclusively driven by the market or civil society, rather than by policy. For example until a few years ago there were no official policies that addressed green jobs and green skills, although key programmes such as Working for Water were in practice, if not in name, green economy projects.

However encouraging signs are beginning to emerge. At the international climate change negotiations held in Copenhagen in December 2009, South Africa announced a commitment to a reduction in emissions of 34% below “business as usual” levels by 2020 , and 42 per cent by 2025. This has been and will continue to be a major impetus for change.

At the national level references to greening and green jobs have begun to emerge as an aspect of general economic policy development. They can be found in the national MTSF for 2009-2014, Outcome 10 (Environmental assets and natural resources that are well protected and continually enhanced), and a Draft National Strategy and Action Plan on Sustainable Development, as well the New Growth Path and the Industrial Policy Action Plan (IPAP2), both of which make clear commitments to building a green economy.<sup>2</sup>

Since April 2009, the start of the current provincial term of office, the Gauteng Provincial Government (GPG) has made a series of policy and strategy commitments towards a greener Gauteng.

In the 2009-2014 Medium Term Strategic Framework / Programme of Action, a clear commitment was made 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”*

The MTSF also committed GPG to “stimulate redistributive economic development to create decent work, sustainable livelihoods and reduce income inequality”, amongst other things by working to “create green jobs” and promote “green industries”.

The commitments in the Programme of Action were subsequently taken up in the Gauteng Employment Growth and Development Strategy (GEGDS). The GEGDS states that the Gauteng economy must shift to an “endogenous economic growth trajectory that is based primarily on “innovation”, “green growth” and “inclusivity”. Amongst other things 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”*

Various other GPG strategies have sharpened this understanding of a green future for Gauteng. For example Gauteng’s economic recovery plan in response to the global financial and economic crisis recognises that “Increasing awareness of environmental degradation amongst consumers and governments has placed the ‘green’ agenda squarely on the global economic agenda”, and promises that Gauteng will leverage this green agenda “in collaboration with business and civil society to stimulate new industries and new forms of economic activity. This is to ensure that environmentally-sustainable options can be linked to job creation, poverty alleviation, and the development of a diverse and resilient economy”. Important complementary work has been done in the Department of Local Government and Housing to develop a Gauteng Integrated Energy Strategy, and in the Department of Agriculture and Rural Development, inter alia in the development of a Gauteng Climate Change Response Strategy. Many other important strategies and interventions could be mentioned.

At local level too, municipal 5 year IDPs for the 2011-16 term of office called for enhanced commitments towards sustainability in areas such as transport planning, green space protection and enhancement, promotion of alternative energy sources, water and power demand management, and development of the green economy.

### **Challenges and opportunities**

Many of the policies and strategies produced to date on how to achieve a more sustainable South Africa and province recognise, even if only implicitly, that sustainability is both a major challenge, and a key opportunity. This Green Strategic Programme for Gauteng starts from the same premise.

On the one hand, sustainability means becoming much more conscious of the fact that the future growth of our economy and well being of our society will depend on us being able to manage pressing environmental costs and risks, and immediate and growing resource constraints, that we can simply no longer ignore. By way of illustration:

- There is overwhelming scientific evidence that climate change is accelerating, and will lead increasingly to unpredictable weather patterns, disrupted ecosystems and natural disasters of all kinds. This will disproportionately affect developing countries, and in particular poor

communities within these, impacting seriously on the stability of economies and the resilience of vulnerable communities and households;

- The world is beginning to reach the limits of development paths reliant on the expectation of cheap and always available resource inputs, including food, electrical power, water and fossil fuels. A resource constrained future, in which the prices of inputs into economic production and household reproduction processes will rise steeply, must be assumed. In South Africa recent increases in the price of electricity and motor fuels provide evidence of what will be an inexorable trend.
- For too long economic growth relied on business activities and household level processes that externalised to other places and future generations true environmental costs and risks. The current concern with Acid Mine Drainage is only one example of this challenge. It has been said that if the full costs of mining had historically been incorporated onto the balance sheet of mining companies, including the long term marginal costs of properly mitigating the effects of land and water pollution, no mine would have been profitable. Instead commodity prices were kept low, and profits high, by externalising those costs to the future. The unsustainability of this practice, particularly in a resource based economy such as South Africa, has now become glaringly obvious.

The challenge before us is to more systematically appraise and manage the costs, risks and constraints. Doing so will not be easy when for so long they have been safely ignored and there is limited insight, capacity and skills to do what must be done.

However, on the other hand, a more sustainable South Africa and Gauteng presents a major opportunity. This is what was being recognised in the Province's economic crisis recovery strategy when it spoke about 'leveraging the green agenda', by 'linking environmentally-sustainable options' to 'job creation, poverty alleviation, and the development of a diverse and resilient economy'. All across the world, the explosion of concern over environmental challenges is giving birth to new kinds of industry and new, healthier and happier ways of living.

In the economy, green growth refers to a huge upsurge in research and innovation in new energy sources, or new products to bring down the household and business costs of energy. It refers to the actual manufacture, with accompanying manufacturing jobs, of concentrated solar power plants, solar water heaters, new kinds of insulation materials, and new water and energy meters, to name but a few. On the services side it means the development of new processes that will change everything from the way manufacturing lines are run to the way offices and homes get configured. This green revolution is the equivalent of the ICT revolution that we have just gone through, with massive opportunities for growth and the creation of decent jobs.

At the level of communities and households, a green future means valuing different things. A society less concerned with conspicuous consumption of more and more household goods, and more concerned with health, well-being, community and resilience is something to be valued. Already there are moves internationally to support this shift with indexes and data that illustrate that human progress can be measured in different ways than crude gross geographic product indexes.

### **3. Defining the end state**

The United Nations Environment Programme's (UNEP) defines "... a green economy (as) one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities."<sup>3</sup> In our view a more sustainable regional economy is one that anticipates and adapts to underlying resource constraints, proactively invests in natural capital, and takes advantage of new opportunities in the emerging green economy, in order to become more efficient in the use of resources, to increase its resilience in face of price and trade challenges, and to address deep structural employment problems.

Within this broad framework we consciously envision a green economic future for the region in a multi-dimensional way. On the one hand, within the ambit of the economy in the narrow sense, we can envisage a region that is much more economically dynamic because it has a robust, fast expanding, and jobs generating set of sectors and industries broadly classifiable as 'green'. As noted these might include firms in areas such as renewable energy, new water or waste technology, energy efficient manufacturing processes and equipment, biotechnology, environmental restoration and land care, and so on.

But on the other hand it is not sufficient to simply select a limited number of economic firms or clusters for targeted support as add-ons to an economy that is inherently unsustainable, and remains untransformed. Rather, the sustainability of our economy depends on a fundamental transformation in number of sectoral areas. These cross-cutting sectors include air quality, climate change, energy, food security, land use, transport, water and sanitation, and waste, which together form the foundation for a true green economy. The view is that investing in these areas will promote economic growth that is sustainable in the broad sense, but will also open up a multiplicity of economic opportunities over the long term. This broader shift in its development path will see Gauteng at the forefront of sustainable economic development. Within each of the areas we see the following long-term visions and envisaged outcomes.

***Green economy (in the narrow sense)***

Gauteng needs to grasp the opportunities provided by the idea of an emerging green economy, both to maximise employment prospects and to achieve global competitive advantage in a fast evolving global industry. The first step is to achieve strategic clarity on what is meant by a green economy, and how South Africa and the province needs to transition to it over time: it is simply not sustainable to be seeking to grow a new green economy while still trying to support resource intensive industries wrapped up in the minerals-energy complex – the former precludes the latter. Building a green economy will take a multi-dimensional approach, involving inter alia building the requisite skills, providing targeted support to fledgling industries, and providing a frame of research and development (R&D) assistance within which home-grown green technology innovations can flourish.

**Vision:** A more sustainable regional economy that anticipates and adapts to underlying resource constraints, proactively invests in natural capital, and takes advantage of new opportunities in the emerging green economy, in order to become more efficient in the use of resources, to increase its resilience in face of price and trade challenges, and to address deep structural employment problems.

**Envisaged economic outcomes:** The new industries that will be forged and the wide pool of jobs that exist in the green economy are opportunities to be seized by Gauteng so to avoid being left behind in

this economy of the future. If Gauteng reinvents itself as a green economy to stay competitive, it can lead as a regional hub of green entrepreneurial activity, innovation, manufacturing and R&D.

### **Air quality**

Decent air quality in Gauteng, that consistently meets and exceeds accepted international standards, is not a nice to have – poor air quality has profound negative health effects, which in turn rebounds on economic productivity and perceived quality of life. Addressing air quality in Gauteng will need to start with putting in place the requisite monitoring systems, which have historically been inadequate, followed by targeted measures to tackle problems at the point of source, whether it be industry emissions, household cooking facilities or vehicles.

*Vision:* A cleaner, less polluted Gauteng that continuously strives to meet and exceed global air quality standards, and exceed global air quality standards and address the health, economic and environmental challenges arising from air pollution, by investing in previously lacking monitoring systems and proactively targeting air pollution sources.

*Envisaged economic outcomes:* The public health benefits of improved air quality have direct feedbacks into Gauteng's economy, alleviating economic burdens through improving labour productivity, reducing employee turnover and public health care costs. Addressing air pollution will also create offshoot industries and technological innovations from the demand for pollution control equipment, manufacturing and monitoring. Improved atmospheric, emissions and air quality statuses will enhance Gauteng's economic attractiveness and appeal as an attractive commercial, tourism and investment location.

### **Climate change**

Climate change is an international concern, of growing relevance to the province. It is hard to ignore the impeccable scientific analysis on the trajectory of climate change and its likely global impacts, and harder still to dismiss the tangible local evidence in shifting rainfall patterns across the country, and increasingly severe flooding affecting parts of Gauteng. Addressing climate change requires thinking over the long term in a number of areas, including taking bold responsibility for localised causes such as the heavy emissions from Gauteng factories; and mitigating and adapting to its likely impacts, including regearing urban infrastructures to take the strain of heavier run-offs, and helping communities to become more resilient in the face of unpredictable weather events. A silo approach to the issue will not be enough: only a series of interventions across a range of sectors (from transport systems, to water management to industrial processes) will prepare Gauteng to face an inevitably more unpredictable and challenging future.

*Vision:* A region that has the institutional and infrastructural capacity to mitigate and adapt to micro-scale climate changes, to reduce greenhouse gas emission intensities, and to protect those communities likely to be worst affected by the climate change phenomenon, thereby enabling the transformation towards a more resilient, less-vulnerable region.

*Envisaged economic outcomes:* Climate change mitigation and adaptation measures will strengthen the resilience of key economic sectors affected by both slow-onset and extreme, unpredictable climatic events. Furthermore, investing in climate strategies now is far cheaper than continuing to avoid doing so, as climate change actions will become more costly over time for the economy. Focusing on a robust climate change vision will protect Gauteng from the poverty implications of

climate change, strengthening vulnerable groups' access to economic and livelihood opportunities. Market-based instruments around climate change will position Gauteng amongst the leading low-carbon markets, benefitting from investment in the Province's cleaner industries, and create more resilient, less wasteful municipal revenue streams.

## **Energy**

In terms of energy we need to switch our sources of energy away from fossil fuels and immediately concentrate on ways to reduce our CO<sub>2</sub> and greenhouse gas emissions. Gauteng has the potential to become the renewable energy and energy efficient hub in South Africa and in Africa. The region needs to drastically increase its use of renewable energy sources and scale-up energy efficiency interventions. Such investments, and the associate cluster industries, have the potential to create thousands of jobs.

*Vision:* A region that is a renewable energy hub, that makes ambitious investments in renewable energy sources and technologies, and that works to extend an integrated package of reliable and innovative energy services to all citizens, thereby realizing economic and employment spinoffs which dramatically improve Gauteng's position in the new green economy.

*Envisaged economic outcomes:* Stimulating energy efficiency and an integrated energy mix based on renewable resources, presents significant opportunities to stimulate growth and job creation in an economy suffering from power outages and distribution failures. Benefits will be felt through reduced dependence on volatile and unpredictable energy supplies that hurt industry and business as well as low-income energy users. By refocusing energy strategies towards a renewable and low-carbon future, Gauteng will gain cost advantages in the face of rising electricity prices, and significant industrial and manufacturing opportunities around renewable energy and energy efficiency technologies. These are compelling economic opportunities, provincially and nationally.

## **Food security**

Gauteng urgently needs to address the imminent food security challenge by investing in small-scale urban agriculture, organic food production and local food markets. As a net importer of food, enhancing local food production is a key component of a greener economy that invests in non-traditional economic industries.

*Vision:* A Gauteng that is a regional food economy hub, where key food security challenges of food supply and households' economic access to food are addressed, where there is proactive investment in local organic food production, small-scale urban agriculture and local food chains as key components of a greener economy, and where all citizens have access to a safe, nutritious and diverse diet.

*Envisaged economic outcomes:* Investing in local organic food production and markets has the potential to transform Gauteng into a food economy, creating new food value chains that bring employment and investment advantages, and a major opportunity for Province to benefit from the burgeoning global organic industry. Gauteng as a regional food economy will also be less vulnerable to hikes in food commodity prices, and through increasing the availability of food to all citizens, will

offset one of its major development impediments, namely the economic costs of hunger and lost productivity resulting from malnutrition.

### **Sustainable land use**

Sustainable land use references a wide range of challenges facing Gauteng, from unsustainable urban sprawl, to destruction of bio-diversity, to loss of agricultural land, to land pollution from activities like mining, to enhanced vulnerability to disaster risk as a result of climate change and poor settlement design. There is no single intervention that will address all of these concerns at once. But underpinning all is the need for provincial and local government to cohere spatial visions for a sustainable region, and improve co-operative governance in land use management systems and procedures.

*Vision:* A region with a more sustainable approach to land use based on more productive landscapes and more efficient, resilient and equitable settlement forms, where previously degraded land has been regenerated, and where biodiversity and the ecosystem services provided by our green infrastructure are protected and enhanced.

*Envisaged economic outcomes:* Investing in sustainable land use will contribute to Gauteng's economic vitality, while failure to mainstream sustainable land use planning will result in significant economic costs. Addressing urban sprawl will regenerate previously defunct economic areas, whereas the long term economic effects of unchecked urban sprawl is the isolation of low-income groups. Investing in Gauteng's green spaces, which create opportunities to socialise and rest, will fundamentally boost quality of life and socio-economic integration ratings and the associated economic feedbacks. By investing in its green infrastructure, Gauteng will free up revenue that is spent on the disaster recovery and infrastructure costs. There are exciting employment benefits in maintenance, entrepreneurial and public sector industries for Gauteng's sustainable land use sector.

### **Transport**

The economic importance of Gauteng's transport sector cannot be overstated. However, this sector is largely reliant on, and structured towards, continued dependence on fossil-fuels. A committed response is required to reduce dependence on oil and switch to low-carbon alternatives. In particular, the focus must be on improved public transport to limit private vehicles. Some projects have already begun in this regard and will require further commitment to expand these efforts across the province.

*Vision:* A province that provides accessible mobility for all, thereby ensuring proximity to social and economic opportunities, by embracing the principles of transport safety, efficiency and sustainability, and by developing a well-designed, integrated and well-maintained public transport system that is less dependent on fossil fuels.

*Envisaged economic outcomes:* Sustainable infrastructure investments will substantially reduce infrastructure costs and productivity losses associated with inefficient, malfunctioning, unreliable and unsafe transport modes as well as the long distances to job opportunities. The improved access to employment and livelihood opportunities will stimulate trade and attract new business around transport nodes and significantly reduce travelling times. The industrial spin-offs arising from the demand for the manufacturing and production of sustainable transport technologies are notable economic opportunities to be seized by Gauteng.

## **Water and sanitation**

Reconfiguring water supply systems is critical to reduce water consumption and increase efficiency. Water and sanitation infrastructure need to be designed so recycling and reuse become core components of Gauteng's water supply matrix. It will also be necessary to reassess the Province's water pricing structures to incentivise the key water and sanitation initiatives.

*Vision:* A province that embraces more innovative infrastructure choices, demand-side management and the principles of recycling and reuse, to its increase water capacity during times of plenty so that water is available in times of need, thereby ensuring residents and businesses can count on secure water resources into the future, and have access to safe, reliable and sustainable water and sanitation services.

*Envisaged economic outcomes:* Not addressing water stress, pollution and scarcity in sustainable infrastructure choices is a major economic risk, affecting our long term industrial and productive potential. There are also considerable economic spinoffs in investing in sustainable water infrastructure based on closed-loop systems, including the manufacturing, maintenance and installation of new technologies and systems. Furthermore, Gauteng has learnt through its experience of acid mine drainage, that investing in sustainable water and sanitation strategies is far cheaper, politically, economically and environmentally, than externalizing the costs of unsustainable systems to future generations.

## **Waste**

The Province's waste sector needs significant reform to reduce and reuse waste outputs for use into other production processes. If Gauteng commits to using waste outputs as productive inputs, through investing in the necessary infrastructure systems and collaborating with existing waste association, the Province may see a reduction in other environmental challenges and an increase in new local economies based on recycling.

*Vision:* A province that invests in different societal choices, and in infrastructure systems and operations that encourage waste reduction and recycling, as well as the reuse of waste outputs as productive inputs into other processes, thereby promoting new local economies and industries, minimising the total waste stream, and ensuring that all settlements have adequate waste services.

*Envisaged economic outcomes:* As a major generator of waste, Gauteng finds itself in a unique position to benefit its local economy through reusing and, adding value to, waste outputs. The economic spinoffs of reducing, reusing and recycling waste include the creation of high-value manufacturing industries, collection and sorting industries and a new stream of recycling brokers and wholesalers. A formalized waste sector, based on these new recycling supply chains, will also lead to the economic integration of waste pickers, strengthening municipal ties and reducing the financial burden on currently ageing waste infrastructure.

## **4. Pathways to a green economic future**

### **Maintaining the course through sustained adherence to four priorities**

In broad terms the Gauteng Provincial Government, together with municipalities in the region, will steer a course towards a green economic future by maintaining an absolute commitment to four priorities:

*1. Embed in Gauteng's development path the underlying principle of a green economy:* To realize a new type of sustainable development for the future, Gauteng cannot adopt some green options here and leave dirty options elsewhere. It is therefore critical that a broad range of policy interventions are adopted in non-traditional economic sectors, such as food security and waste, so that the green economy does not become an add-on to unsustainable development paths.

*2. Address underlying resource constraints and grow by reducing rather than increasing resource consumption:* Green Economy priorities are embedded in the strategic vision that development and economic growth, including employment creation, needs to happen by addressing underlying resource constraints and reducing rather than increasing resource consumption. The success of this transition can be assessed through measuring the rate at which economic activity is decoupled from resource consumption (resource decoupling) and from the environmental impacts (impact decoupling).

*3. New types of infrastructure configurations:* Investments in new types of infrastructure configurations for basic service such as water, transportation, waste and energy, as well as industrial production and consumption processes, need to be prioritised. To this end, it is essential that the systems in Gauteng's infrastructural and industrial matrix no longer function as 'linear' processes, but according to holistic life cycle designs and circular metabolisms.

*4. Strategic investments in knowledge and innovation systems:* Moving beyond the historical tendency of large scale investment in capital projects, Gauteng needs to promote growth through innovation and skills in green technologies. It is critical that the Province uses the uptick in green economy concerns to develop new skills around green industries, manufacturing and production.

#### **Actions towards a green economic future: the Green Strategic Programme**

The Gauteng Provincial Government has already begun to give effect to its long term vision of a green economy for the region. In July 2011 it adopted a Green Strategic Programme for the GCR. This translates a commitment to the four priorities above into a series of concrete actions and intervention in each of the sectoral areas of focus described earlier economic development, air quality, climate change, energy, food security, land use, transport, water and sanitation, and waste. The Green Strategic Programme (GSP), with its commitments and identified actions, has also already begun to be implemented.

On the one hand a GSP Roadmap has been outlined, with concrete measures categorised into 4 phases; Mobilisation, Consolidation, Optimisation and Maximisation. This roadmap, covering a ten year timeline, is described in the figure below.

On the other a Green Economy Programme Management Office has already been established within the provincial Department of Economic Development. This holds the mandate for execution of the GSP, working in close partnership with a range of stakeholders, including municipalities, national and

provincial sector departments; state owned enterprises; the private Sector; academia and research institutions; and civil society more broadly.

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## HIGH LEVEL ROADMAP – KEY PHASES

2011 - 2012	2012 - 2013	2013 - 2014	2014-2019
<b>PHASE 1 Mobilization</b>	<b>PHASE 2 Consolidation</b>	<b>PHASE 3 Optimization</b>	<b>PHASE 4 Maximization</b>
<ul style="list-style-type: none"> <li><input type="checkbox"/> Design and implement Green Economy Programme Management Office</li> <li>★ <input type="checkbox"/> Appoint Transaction Advisor to:               <ul style="list-style-type: none"> <li>➢ source investment and financing options for project implementation</li> <li>➢ design, model and structure green flagship projects and programmes</li> <li>➢ advise PPP, project procurement, negotiation and contracting support</li> <li>➢ green technology/industry development</li> </ul> </li> <li>★ <input type="checkbox"/> Post Request for Information on:               <ul style="list-style-type: none"> <li>➢ Renewable energy investments and alternative energy products/services</li> <li>➢ Waste Management and Sanitation products/services</li> <li>➢ Carbon trading mechanisms</li> <li>➢ Water and Emissions Management</li> </ul> </li> <li><input type="checkbox"/> Engage key stakeholders and convene Green Economy Summit to conclude Green Economy Social Compact</li> <li><input type="checkbox"/> Drive localizing of manufacturing and Mobilize funding/investments</li> <li><input type="checkbox"/> Rollout identified quick win projects</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Finalize review, updating and development of required policies and regulations towards a greener Gauteng:               <ul style="list-style-type: none"> <li>➢ Carbon Trading Framework</li> <li>➢ Green financing, carbon taxing</li> <li>➢ Environmental and Land Use</li> <li>➢ Acid Mine Water and Water Management</li> <li>➢ Public Mobility and transport</li> </ul> </li> <li><input type="checkbox"/> Develop required institutional mechanisms and build capacity:               <ul style="list-style-type: none"> <li>➢ Green Advisory Bureau</li> <li>➢ Clean development mechanism/carbon advisory desk</li> </ul> </li> <li><input type="checkbox"/> Activate key regulations to ensure compliance and change of behaviour               <ul style="list-style-type: none"> <li>➢ Carbon/pollution taxes</li> <li>➢ green building standards</li> <li>➢ green incentives</li> </ul> </li> <li><input type="checkbox"/> Establish Collaboration arrangements with key role players               <ul style="list-style-type: none"> <li>➢ Transnet/Sasol – Gas distribution</li> <li>➢ Banks – green financing</li> <li>➢ Academia – green technologies</li> <li>➢ Industry – local manufacturing of green technology and products</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Build on successes</li> <li><input type="checkbox"/> Develop and adopt best practices</li> <li><input type="checkbox"/> Refine Green Strategic Programme design</li> <li><input type="checkbox"/> Stimulate and localize industrial capacity in manufacturing of green technologies</li> <li><input type="checkbox"/> Roll out large scale infrastructure reconfiguration projects</li> <li><input type="checkbox"/> Implement mobility improvement projects</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Upscale green economy projects</li> <li><input type="checkbox"/> Increase public investment in green infrastructure</li> <li><input type="checkbox"/> Move towards implementation of smart compact cities</li> <li><input type="checkbox"/> Reward changes in behaviour by industry and communities</li> </ul>

Source: Gauteng Green Strategic Programme (2011)

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<sup>1</sup> UNEP, *Global Green New Deal: An Update for the G20 Pittsburgh Summit*, ii.

<sup>2</sup> The New Growth Path targets 300 000 additional direct jobs by 2020 to green the economy, with 80 000 in manufacturing and the rest in construction, operations and maintenance of new environmentally friendly infrastructure. The potential for job creation rises to well over 400 000 by 2030

<sup>3</sup> United Nations Environment Programme (2011): *Towards a green economy: Pathways to sustainable development and poverty eradication – a synthesis for policy-makers*.

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