

# **AN ASSESSMENT OF GREEN PROCUREMENT PRACTICES IN SOUTH AFRICAN METROPOLITAN MUNICIPALITIES**

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## **ABSTRACT**

The study sought to determine the extent to which green procurement is practised in South African metropolitan municipalities. The study found that there are mainly two categories of metropolitan municipalities namely, the older and younger ones. The older metropolitans use different policies to convey the green procurement discourse. Such policies include the Supply Chain Management Policies of the City of Cape Town and eThekweni; the Environmental Policy of the City of Cape Town, City of Tshwane and Ekurhuleni; Waste Management Policy of the City of Cape Town; and the Energy and Climate Change Policy of Ekurhuleni. Two metropolitans that had made significant strides in the area of green procurement are the City of Cape Town and Nelson Mandela Bay Metropolitan. The City of Cape has developed an Information Guide on the Implementation of Green Public Procurement and the Nelson Mandela Bay has also developed the Green Procurement Strategy to be implemented by the city. Whereas the older metropolitans have made efforts to include green procurement in selected policies, the younger metropolitans are yet to do so. Regardless of the policy status accorded to green procurement by the older metropolitans, the study found that the implementation of green procurement through tender decision, call for tender and the actual procurement is not imminent as evidenced by over 70% of the respondents. This indicates a gap that exists between policies and implementation.

## **INTRODUCTION**

Green procurement can be defined as the “purchase of products and services which have less impact on the environment and human health compared with competing products or services that serve the same purpose” (United Nations Development Programme – UNDP, 2008:11). Green procurement is a term that

is used interchangeably with other terms such as green purchasing, environmental preferable purchasing, environmentally friendly procurement, environment-oriented procurement and sustainable procurement (Bolton, 2008:1). Despite the diversity of terms, they all generally signify taking into consideration the impact a product or service has on the environment and human health and deciding to purchase a product or service with a lower impact on the environment as well as on human health. This study will subsequently use the term “green procurement”.

There are three tiers of local government in South Africa namely: metropolitan municipalities [Category A], local municipalities [Category B] and district municipalities [Category C] (Republic of South Africa, RSA, 1998:10). This study focuses on metropolitan municipalities – eight municipalities with more than 500 000 voters with mandate to co-ordinate service delivery in their entire jurisdiction. The eight metropolitan municipalities include Buffalo City, City of Cape Town, City of Johannesburg, City of Tshwane, Ekurhuleni, Thekwini, Mangaung and Nelson Mandela Bay.

## **METHODOLOGICAL FRAMEWORK**

The study sought to determine the extent to which green procurement is practised in South African metropolitan municipalities. An understanding of the nature and determinants of green procurement practices has the potential to inform the development, implementation and improvement of green procurement in South African metropolitan municipalities. Green procurement at the local government level can further assist South Africa in fulfilling its national and global responsibilities embracing sustainable development, addressing climate change, reducing poverty, creating green jobs and improving the quality of life. To address this objective, a questionnaire was administered to assess the levels of green procurement practices within metropolitan municipalities. The questionnaire comprised a total of 74 questions divided into three sections. Some of the questions used were adapted from a similar research conducted in Europe in 2005 by Bouwer *et al.* (2005:71-84). The first section of the questionnaire focused on the demographics of the respondents. Demographic information was needed to enable participants to be contacted should the need for clarification arise. The second part of the questionnaire was on green procurement. This part focused on testing the knowledge of municipal officials on green procurement policies and what they entails. The third part was concerned with the environmental criteria in specific services and products procured in each metro. A total of 27 questionnaires was completed and returned out of the total 29 dispensed. This gave a response rate of 93%. Apart from the questionnaire, available green procurement policies were retrieved and analysed.

The questionnaire for the research sought to engage officials from seven metropolitan municipalities (the eighth metropolitan municipality, the City of

Tshwane, was used in the pilot study). However, the Ekurhuleni metropolitan municipality declined to participate in interviews and questionnaire completion although all metropolitans were subjected to secondary data analysis. As such, the questionnaire informing this research was completed by officials from six metropolitans namely: Buffalo City Metropolitan Municipality; Nelson Mandela Bay Metropolitan; City of Cape Town; City of Johannesburg; eThekweni Metropolitan Municipality and Mangaung Metropolitan Municipality. In each metro, the participants were a town planner, two environmental specialists and two procurement officers. All the interviewed participants were senior officials who had significant leading roles in policy implementation within the metropolitans. Although a total of 30 questionnaires was dispensed, only 27 were completed and returned. This gave a response rate of 90%. Table 1 gives a summary of the designation and number of metropolitan officials that informed this research through questionnaires.

**Table 1: Designation and number of participants informing the research**

<i>Metro</i>	<i>Town planner</i>	<i>Procurement officers</i>	<i>Environmental specialist</i>	<i>Economic development</i>	<i>Total number of questionnaires per metro</i>
Buffalo City Metropolitan Municipality	1	1	2	-	3
City of Cape Town	1	2	2	-	5
City of Johannesburg	1	1	3	-	3
eThekweni	1	2	2	1	6
Mangaung	1	3	2	-	6
Nelson Mandela Bay Metro	1	2	2	-	4
Total number per category	6	10	13	1	27
Proportional sample in relation to questionnaire	20%	33,3%	43,3%	3,3%	100%

Source: Fieldwork (2013)

In addition to the questionnaire, several publicly available documents were retrieved for document analysis. The retrieved and analysed documents included

policies, procedures and/or strategic documents related to green procurement in all the metropolitans involved in the study. The documents were analysed to establish the link between the need for green procurement and any action being taken to address climate change in the metropolitan municipalities.

Given that green procurement is relatively new in South Africa and that there is no national policy explicitly talking of green procurement, this work tries to assess how metropolitan municipalities have set about addressing this desire, which opens up a research gap. Apart from the desire to be good environmental stewards, metropolitan municipalities globally are now pressed to do the right thing as global consumers now demand greener products that lead to low organisational and product carbon footprints (Preuss, 2007:357; Nhamo, 2009:118). Although the public procurement laws in South Africa are rather silent on green procurement, global trends aimed at addressing the challenges arising from general environmental decay and climate change in particular present a number of risks for metropolitans that are not embracing the green agenda fast. As discussed, metropolitans and other municipalities are huge consumers of dirty, carbon-intensive goods and services that result in degraded environments and climate change. To this end, physical, reputational, regulatory and financial risks associated with especially climate change resulted in proactive metropolitan municipalities doing something about procuring green. The problem to be investigated, therefore, is the seemingly slow progress in embracing the green procurement agenda by South African metropolitan municipalities, and this is done from a dip stick point of view. Supported by the emerging findings from this work and as will be discussed in depth in the findings section, the current tender and bid evaluation criteria are silent on green procurement with the main emphasis being on pricing and addressing the business needs of previously disadvantaged groups.

## **LITERATURE AND THEORETICAL SURVEY**

Green procurement describes the practice of integrating environmental considerations into purchasing policies, programmes and actions (Stigson & Russell, 1989:1; Alhoha, 2008:472). The concept rests on two pillars, namely, the general procurement pillar and the environment pillar. These two pillars have been previously viewed as independent and have consequently been theorised and conceptualised independently. However, the sustainable development discourse has brought the two together as outlined in this section. The procurement process involves identifying the goods and services to be procured, deciding on the procurement practices to be followed, soliciting and evaluating tender offers, awarding the contract and finally administering the contract and confirming that all the stated requirements are met (Moeti *et al.*, 2007:124; Watermeyer, 2011:1). Procurement is a subset of the supply chain management (SCM) (Naslund & Williamson, 2010:13), which is the management of activities involved in purchasing

materials, transforming them into intermediate goods and final products and delivering the products or services.

The procurement process applies to both public and private organisations. Procurement by public (state) organisations is commonly referred to as public procurement and this distinguishes it from procurement by the private sector. Public procurement generally refers to the procurement of goods and services and the commissioning of infrastructure developments by governments (Audet, 2003:151). Public procurement can be divided into three main groups. These are (i) the procurement of goods and supplies, (ii) the procurement of goods and services, and (iii) the contracting of works, and infrastructure development (Turley & Perera, 2014:15). Public procurement is important to private sector development because it accounts for approximately 15% of world output (Lewis & Bajari, 2011:1173). In procuring to achieve value for money and transparency, government's procurement usually follows the tender process. A tender is an invitation for the supply of goods and services at a fixed price (Woods, 2008:235). An accepted tender is binding to both the organ of state and the person or company who won the tender. During the execution of the tender, goods or services have to be provided in an agreed manner, at the price offered; and the state has to pay the tenderer the agreed price at the agreed time (ibid). The production of goods and services has economic, social and environmental impacts. By addressing how these goods and services are supplied, concerns around the economic, social and, of key concern to this research, environmental degradation (including among other aspects, climate change) are inevitably addressed.

Green procurement as a mitigation strategy is when governments put into place policies and strategies to encourage the purchase and use of low-carbon technologies and renewable energy that will have minimal adverse effect on the environment. The local government level offers a potentially effective space for implementing such policies and strategies (Clement *et al.*, 2003:70). This is so since the local government deals directly with communities. Green procurement at the local government level thus offers an opportunity of addressing climate change risks and at the same time exploits the availed opportunities. The next sections focus on case studies of international municipalities in addressing negative impact on the environment through green procurement.

Drawing from national governments' focus on combating climate change, several cities and municipalities within OECD member states are taking the impacts of activities on the environmental degradation seriously. To this end, several cities and municipalities have made significant strides towards addressing the impacts of activities on the environment through a number of "quick win" green projects (World Bank, 2010:12). These green procurement projects include energy saving projects, waste water treatment, constructing green buildings, establishing bus rapid transit (BRT), the use of low emission vehicles and developing renewable energy.

### **Integrated mobility plan in Venice**

The integrated mobility plan in Venice is a framework with different projects for sustainable mobility that were initiated in 2008 by the municipality of Venice (City of Venice, 2014:1). The aim of the mobility plan is to reduce carbon emissions in the transport sector by up to as much as 35% (ibid). To realise this dream, a dedicated and multi-skilled team had to identify a project, source funding and then implement and monitor that project. To realise the aim of the mobility plan, projects such as tram lines were installed, bike lanes were demarcated, electric vehicle charging stations were built as well as bike and car sharing schemes developed. Furthermore, park and ride facilities were constructed to enable people to park their cars to catch buses or trams, or cycle to their various destinations. With the advent of electric and hybrid vehicles in South Africa, once more, there are lessons to be learnt here and this study investigated such in the metropolitans. From the city’s perspective, the integrated mobility plan was a success. More details regarding the modal split in Venice are shown in Table 2.

**Table 2: Modal split in Venice**

<i>Modal split in Venice</i>	
<i>Group of people</i>	<i>Percentage (%)</i>
The use of private transport	40
The use of bikes	20
Use of public transport	12
Goes by foot	23
Other	5
Total	100

Source: Author (2014)

### **Energy saving partnership in Berlin**

The Berlin energy saving partnership (ESP) is a participation model to reduce carbon emissions and energy costs for property owners (City of Berlin, 2011:1). The ESP is a joint project between the City of Berlin and the Berlin energy agency (BEA). An energy service company (ESCO) was contracted to determine the most applicable energy saving investment to implement. The ESCO upgrades and refurbishes hardware components and retrofits public and commercial buildings. Hardware components that can be refurbished include automatic control engineering systems, heating, lighting, ventilation and air conditioning control systems. The BEA acts as the intermediary between ESCO and building owners and helps both parties to arrange payments after the installations. The ESCO

further offers support on consumer behaviour to its clients after the installation of the hardware components. Berlin's ESP projects are also implemented in other countries through the BEA's division called "International Know-How-Transfer" project (City of Berlin, 2011:1).

### **Reclaimed wastewater and green building programmes in Tokyo**

Tokyo is the capital city in Japan. Japan was among the first countries to introduce Eco-Labeling in 1989. However, it was not until 2000 that the Green Purchasing Law of Japan was legislated and enforced in 2001 (Ho *et al.*, 2009:30). The Green Purchasing Law requires that all state institutions develop and implement green procurement implementation plans and practices and report on these annually. They are also obliged to purchase selected products and services categorised as "eco-friendly goods". The goods and services are classified as such if they have a low impact on the environment (*ibid*). Two main green procurement projects in Tokyo will be assessed here. These are the reclaimed wastewater project and the green building programme. The reclaimed wastewater project is the first of its kind in Tokyo. It is a wastewater treatment process using ceramic filtering. Collected wastewater is treated and purified through coagulation and sedimentation and finally filtered through ceramic filters. The filtered water is then supplied through underground pipes for use in ablution facilities in office buildings as well as to sprinkle street plants (City of Tokyo, 2011:1).

The Tokyo green building programme, which requires that the design of all new large buildings be environmentally friendly, has been in existence since 2002 (City of Tokyo, 2011:2). It is a mandatory programme for environmental performance for all new large buildings in Tokyo. The environmental performance of the buildings should be rated according to the four main categories indicated by Tokyo metropolitan government (TMG) guidelines. The four categories are: efficient energy use; appropriate use of resources; preservation of the natural environment and mitigation of the heat-island effect. The rating should then be disclosed and posted on the TMG website. The aim of the green building programme is to reduce carbon emissions (*ibid*). Tokyo's green buildings programme makes some interesting findings as South Africa is also fast moving in this direction with all these key green buildings having to sit in one metropolitan or the other or one municipality or the other.

### **Bus rapid transit systems and low emission transport**

The bus rapid transit (BRT) is defined by UNEP (2007:11) as "a high-quality bus based transit system that delivers fast, comfortable, and cost-effective urban mobility through the provision of segregated right-of-way infrastructure, rapid and frequent operations, and excellence in marketing and customer service". Apart from moving goods and services, the BRT also focuses on reducing carbon emissions in

big cities. The first ever BRT system was initiated by Bogota in Columbia. Several attempts to initiate the BRT system since 1978 failed until it was finally initiated in 1999 (USA Department of Transportation, 2006:1-86). Dubbed TransMilenio, the Bogota BRT is a long-term mobility strategy that aims to discourage the use of privately-owned vehicles and to promote walking and cycling. Separate bus lanes were constructed for the TransMilenio's trunk services with stations situated 500 metres apart. Characteristics of the TransMilenio include segregated bus lanes, express services, high capacity stations, an elevated platform, high capacity buses and quick passenger access (ibid). The TransMilenio uses a cashless system. Pre-paid smart cards are charged or recharged at booths at the stations and are automatically debited at turnstiles at the stations.

Given that the BRT route for South African metropolitans is gaining speed, lessons from the TransMilenio and other BRTs are crucial in terms of both environmental sustainability and green procurement. Documented advantages of the TransMilenio include the following:

- a. A savings of average travel time of 16 minutes per trip
- b. A higher safety environment
- c. Reduction of about 79% in the number of collisions on trunk corridors

More passengers are transported daily. For example, an average of 1 million passengers was recorded to have been transported per day in January 2006 (ibid).

The high success rate of the TransMilenio has made it a catalyst for the implementation of BRT system in other cities worldwide and possibly the inroads in South Africa around the BRT could also have been inspired by this system.

In addition to the BRT systems, several cities are reducing their carbon emissions by switching their city fleets to electric vehicles (EV) or low emission and/or hybrid vehicles. A leading example is the city of San Francisco. The San Francisco Municipal Transportation Agency (SFMTA) aims to reduce the municipal fleet emission through the implementation of three strategies. These are: (1) to maximise the use of zero to low-emission buses, (2) to replace conventional diesel buses with hybrids (with lower maintenance and generating half the pollution of a regular diesel bus) and (3) the retrofitting of the remaining fleet with available technologies and low carbon fuels (SFMTA, 2011:23). Several accomplishments were achieved by implementing the three strategies highlighted earlier. These include having over 700 low emission vehicles either using compressed natural gas or being a hybrid, over 50 heavy duty vehicles using bio-fuel, and 25 fire trucks and ambulances using bio-diesel. Finally, the implemented strategies made SFMTA have a total savings of 25% carbon emission over a period of 20 years (between 1990 and 2010) (ibid).

### **Solar energy**

Solar energy in the city of Philadelphia will be the focus in this sub-section. Solar energy is energy converted from the rays of the sun. Solar energy is renewable and



clean energy in that it produces no pollutants (Department of Minerals and Energy, 2002:1). The Philadelphia solar energy project was installed at a water pollution plant with the aim of reducing carbon emissions (City of Philadelphia, 2012:1). At the waste water plant, 250KW solar panels were mounted on the ground, covering an area of more than one acre. In total, the solar energy project generates up to 300 000KWh of energy annually, equivalent to energy that can power 28 homes. The project also prevents an annual carbon emission of 220 metric tons (ibid). Having interrogated the international perspectives on green procurement, the next section focuses on the analysis of data and discussion of findings.

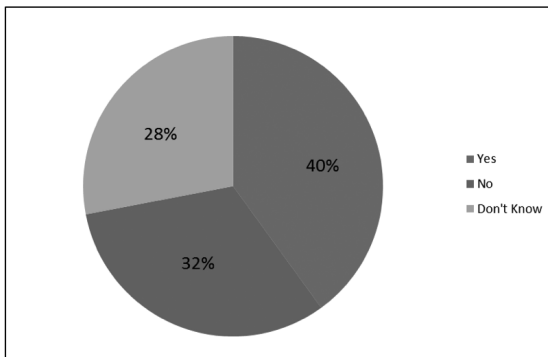
### **ANALYSIS OF DATA AND DISCUSSION OF FINDINGS**

It emerged that generally there are two sets of metropolitan municipalities in the country, namely: older and younger. The older metropolitans include those that received metropolitan status ten plus years from the date of study, 2013. These include the City of Cape Town, City of Johannesburg, City of Tshwane, Ekurhuleni, eThekweni and Nelson Mandela Bay. The younger metropolitans are those that received their metropolitan status within three plus years from the date of study, 2013. These are namely Buffalo City and Mangaung.

#### **Environmental criteria in calls for tender**

An in-depth analysis of selected tender documents from the metropolitans identified the absence of environmental criteria in the documents. In addition to the analysis of the tender documents, metropolitan procurement officials were asked if environmental criteria were included in the call for tender when purchasing goods and services. About 40% of the respondents (N = 30) indicated that the call for tender included environmental criteria, 32% said the call for tender did not include environmental criteria and 28% did not know if environmental criteria were included in calls for tender or not (Figure 1).

**Figure 1: Environmental criteria included in calls for tenders (N = 30)**



Source: Fieldwork (2013)

What was interesting from the responses on this aspect is that the 40% acknowledgement of tender documents carrying environmental consideration contradicts evidence from the analysed documents. Analysed tender documents from all the metropolitans revealed no inclusion of environmental consideration. Against this background, respondents were asked to rank the importance of identified factors in determining purchasing decisions. Seven factors were identified: (i) *Preferential Procurement Policy Framework Act* (PPPFA); (ii) Broad-Based Black Economic Empowerment (BBBEE); (iii) price; (iv) value for money; (v) environmental friendliness of services and products; (vi) functionality; (vii) service delivery. The response shows that 70% of the respondents (N = 30) ranked the PPPFA as a key criterion determining purchasing decision and 63% highlighted the price of the product or service as the top most criterion. The third criterion was BBBEE as indicated by 56% of the respondents and 41% of them listed value for money as the fourth criterion. The fifth criterion was services and products that are environmentally friendly with 19%, functionality was listed as the next criterion to consider in procurement with 11% and the last one to be mentioned was service delivery with 4%.

In addition to asking respondents to identify key criteria used in procurement, respondents were also asked to indicate how often performance-based specifications are used in their procurement process. About 36% indicated that performance-based specifications were always used with 20% saying it was often used, 24% indicated that it was sometimes used and 20% did not know if performance-based specifications were used or not.

### **Environmental criteria in procurement of specific services and products**

To assess the consideration of environmental criteria in specific services and products, 49 categories of products and services were listed and respondents were asked to indicate if the listed products and services were procured in the 2011/2012 financial year. All the respondents (100%) (N = 30) indicated that their metropolitan procured the listed products and services. Asked if environmental criteria were applied in procuring the products and services, only 2% strongly agreed. Further results are shown in Table 3.

**Table 3: Environmental criteria used in procurement of products and services (N = 30)**

	<i>Percentage (%)</i>
Disagree	18
Not sure	59
Agree	21

Strongly agree	2
Total	100

Source: Fieldwork (2013)

Further to the purchasing criteria part of the inquiry, the research sought to determine obstacles to the adoption of green procurement practices. The inquiry identified five such obstacles, namely, (i) lack of knowledge about the environment and how to develop green procurement knowledge criteria; (ii) lack of green procurement policy/guideline and or regulations; (iii) inefficient management systems; (iv) perception that environmentally friendlier products would be more expensive; (v) lack of information. A ranking of the efficacy of each obstacle in preventing green procurement shows that the “lack of knowledge about the environment and how to develop green procurement knowledge criteria” were regarded as a formidable obstacle by 63% of the respondents. “Lack of information” ranked the lowest with 44%.

Against a background of obstacles to green procurement, the respondents were asked to select and rank factors in their order of importance with reference to their importance in assisting in the development of green procurement practices in metropolitans. The highest ranked factor is “training for municipal procurement officers” as chosen by 63% of the respondents. This was followed by advice from external consultants at 58%. Table 4 presents details in ranking of the other pointers.

**Table 4: Development of green procurement practices (N = 30)**

<i>Points in order of importance</i>	<i>Percentage (%)</i>
Training for municipal procurement officers	63
Awareness-raising for municipal tender committee	48
Access to written information (manual, procurement guidelines)	42
Advice from external consultants	58

Source: Fieldwork (2013)

After determining how green procurement practices could be developed, respondents were asked finally to indicate if metropolitans had fully embraced the “going green” concept and had put it into practice. An estimated 25% of the respondents (N = 30) indicated that they disagreed that their metropolitan had fully accepted the “going green” concept. A further 25% indicated that they were not sure if their metropolitan had embraced the “going green” concept. However, the majority of the respondents either agreed (42%) or strongly agreed (8%) that their metropolitans had embraced the concept and actually put the concept into practice.

It emerged that procurement and other key decision-making officials were not educated and trained in the implementation, monitoring and evaluation of green procurement. This is an aspect that was well captured by a respondent from the Nelson Mandela Bay Metropolitan municipality who stated that:

Procurement as a function and procurement as a profession should be looked into. Procurement officers should be at the fore position when it comes to green procurement. This will call for their training so that they will not be behind the scenes anymore, but to be able to champion the green procurement agenda within a municipality. (Nelson Mandela Bay respondent, 2013)

**Local government policies in support of green procurement**

The subject of policy links very well to green procurement in metropolitan municipalities. In a detailed paper on green economy readiness in South Africa, Nhamo (2015:115) comes up with a green economy readiness model that identifies policy and strategy development as one of the six pillars. Given this background, the authors went on to locate movement in terms of local government green procurement policy development. It was observed that all the older metropolitans (those that received metropolitan status ten plus years from the date of study, 2013) namely, City of Cape Town, City of Johannesburg, City of Tshwane, Ekurhuleni, eThekweni and Nelson Mandela Bay, use different policies to convey the green procurement discourse. Table 5 gives a summary of the policies used in the metropolitans to convey the green procurement discourse

**Table 5: Different policies used to convey the green procurement discourse**

<b>Metropolitan municipality</b>	<b>Policy used to convey the green procurement discourse</b>
City of Cape Town eThekweni	Supply Chain Management Policy
City of Cape Town City of Tshwane Ekurhuleni	Environmental Policy
City of Cape Town Ekurhuleni	Waste Management Policy Energy and Climate Change Policy

Source: Fieldwork (2013)

From the table above, it could be deduced that the City of Cape Town has made the most significant strides in the area of green procurement. This is portrayed by the number of policies in support of green procurement. In addition to the

policies, the City of Cape Town has also developed an Information Guide on the Implementation of Green Public Procurement. Another metropolitan with significant progress in support of green procurement is the Nelson Mandela Bay Metropolitan. The Environmental Policy of Nelson Mandela Bay Metropolitan makes mention of green procurement by referring to a Green Procurement Strategy that has been developed by the metropolitan. Whereas the older metropolitans have made efforts to include green procurement in selected policies, the younger metropolitans (those that received their metropolitan status within three plus years from the date of study, 2013), which include Buffalo City and Mangaung, are yet to do so. Of notable achievement is some of the older metropolitans' adoption of the BRT system as well as other environmental projects in line with their Environmental Policies. The BRT system of City of Johannesburg, City of Tshwane and City of Cape Town and other environmental projects will be discussed in the next sections.

### **BRTs in South African metropolitan municipalities**

The City of Johannesburg has embarked on the establishment of the bus rapid transport (BRT) system and the fully endorsed the Gautrain (rapid rail network) with the aim of reducing the city's public transport carbon footprint (City of Johannesburg, 2013:20). Due to a number of industries within its jurisdiction, Johannesburg is considered one of the highest GHG emitters in South Africa (Nhamo & Mjimba, 2014:20-31). To this end, procuring low carbon emitting buses as part of green procurement speaks to the desire to have the city reduce its carbon footprint. Johannesburg's BRT system is branded: "Rea Vaya" which means "we are going". Among the aims of the BRT is to reduce transport-related carbon emissions through the reduction of privately owned cars on the roads and some of the buses using greener fuels (City of Johannesburg, 2013:6-111). The roll out of the *Rea Vaya* BRT began in 2009 (ibid). The *Rea Vaya* BRT system features include the following:

1. Modern buses with double-sided doors for easy access.
2. Thirty-one stations fully staffed.
3. An average weekday passenger trips of 40 000 totalling over 1 million passengers per month.
4. Cashless system. Fares are collected using pre-loaded smartcards.
5. Information about bus arrivals or next station is provided to passengers at stations and on buses respectively.
6. Stations are monitored at a control centre using CCTV.
7. A GPS control centre observes and communicates with buses via GPS and to monitor adherence to schedule.

A survey conducted in 2012 among *Rea Vaya* commuters indicated that 80% of them were very satisfied with the services being provided (*Rea Vaya*, 2012:1). In recognition of the success of Johannesburg's BRT system, the city was chosen as a finalist in the transportation category of the 2014 C40s<sup>2</sup> city climate leadership awards (C40 Blog, 18/09/2014).

Under the spatial development planning of the Tshwane Integrated Environmental Policy, Objective 3 aims to establish an effective environmental friendly transport system for the city of Tshwane. This was given effect with the establishment of a Tshwane Rapid Transit (TRT) system branded *A Re Yeng* which means "let's go" (Figure 2). The City of Tshwane (2010) describes *A Re Yeng* as a bus system that is of a high-quality, rapid, affordable, safe and convenient. The *A Re Yeng* buses are also designed to emit less harmful gases into the atmosphere. The TRT is fairly new and is expected to be completed in phases. The first phase covers a 7km road with seven bus stations.

**Figure 2: A *Re Yeng* TRT bus in Tshwane**



Source: <http://www.tshwane.gov.za/AboutTshwane/NewsandEvents/news/Pages/First-A-Re-Yeng-bus-unveiled-to-the-public-in-Hatfield.aspx> (Accessed on 25/09/2014)

As of September, 2014, the inception phase was 80% complete with the construction of six out of the seven stations commenced (ibid). *A Re Yeng* exclusive features include the following:

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<sup>2</sup> *C40 BRT network is a network of 13 cities worldwide being supported to enhance their BRT systems. The selected 13 cities will in turn help drive BRT best practices in other cities (C40 blog, 2014).*

1. Exclusive dedicated bus lanes for the buses.
2. Multiple doors for easy access and passenger capacity of up to 33 seated and 35 standing.
3. Low carbon emitting engines.
4. Cashless system. Bus fares will be paid with a pre-loaded smart card.
5. All buses will be equipped with Wi-Fi and cameras that will be monitored at a central office. Bus drivers will be in constant communication with the central office.
6. Priority seats for people with disabilities with space for two wheelchairs (ibid).

To achieve the vision for its public transport system, the City of Cape Town joined other cities in South Africa to establish the BRT system and branded it MyCiTi (Figure 3). Some of the features of MyCiTi BRT include the use of segregated bus lanes, express services, high capacity stations, articulated and standard buses and quick passenger access through double side doors (Adewumi & Allopi, 2014:21). MyCiTi makes use of public announcement in the bus to inform passengers of the next station. Furthermore, MyCiTi uses a cashless system. A flat rate bus fare is paid with pre-loaded smartcards that are swiped at the entrance of the bus.

**Figure 3: MyCiTi BRT bus in Cape Town**



Source: <http://www.capetownpartnership.co.za/2012/06/first-myciti-buses-roll-off-pping-production-line/> (Accessed on 27/09/2014)

What emerges from the BRT systems examined in this paper is a clear view that the metropolitan municipalities wish to embark on a low carbon journey. To this end, it is not surprising that the City of Tshwane specified a need to procure low carbon emitting bus engines. The metropolitan municipalities are also looking at enhancing opportunities presented by methane gas that can be captured and

used as fuel for the hybrid buses planned for the future. All these endeavours link directly into the green procurement agenda.

**Other environmentally friendly and green procurement-related projects**

In addition to the TIEP, the City of Tshwane has developed a Framework for a Green Economy Transition (City of Tshwane, 2013). The framework echoes and reinforces the Green Economy Accord targets set out by the South African National Government. The city aims to achieve a percentage (5.6%) of each target outlined by the National Government. For example, the target for green jobs in the renewable energy sector by 2020 for the national government is 50 000. To achieve its 5.6% target, the city aims to create 2 820 renewable energy green jobs by 2020.

The solar PV plant in Ekurhuleni generates 200kw of electricity from 860 solar panels (Ekurhuleni, 2012a:1). Other carbon emission reduction projects undertaken by Ekurhuleni include the following: energy efficiency in municipal buildings through retrofitting; installation of energy efficient street lighting by replacing mercury bulbs with high pressure sodium bulbs; installation of solar powered street lighting and mass rollout of solar water heaters to low income households (Ekurhuleni, 2007:23). The solar street lights (SSL) are made up of a light-emitting diode (LED) light that is energy efficient, and a solar panel that could provide up to 12 hours of lighting at night. The SSL has a solar powered battery that could store up to 48 hours of excess electricity for backup on cloudy days (Ekurhuleni, 2012b).

Of notable achievement for the City of Cape Town, in line with its energy section of Integrated Metropolitan Environmental Policy (IMEP), is the establishment of the city's and South Africa's first "green" taxi rank in August 2014 (City of Cape Town, 2014:1-2) (Figure 4). The rank is equipped with a rooftop solar PV panel system to generate electricity (ibid). The generated solar electricity caters for all the electricity need of the rank. Electricity generated in excess is stored in 24 large batteries to be used at night or on cloudy days.

**Figure 4: Cape Town's "green" taxi rank**



Source: <http://cities-today.com/wp-content/uploads/Green-taxi-rank-City-of-Cape-Town-571x380> (Accessed on 27/09/2014)



Another notable feature of the “green” taxi rank is the use of rain water harvesting and recycled water (up to 70%) to provide for the rank’s huge demand for water (City of Cape Town, 25/08/2014 – Media Release). The harvested rain water is stored in an underground tank and then pumped to the washing bays to be used for the washing of taxis. It is presumed that the metropolitan’s “green” taxi rank will become a benchmark for public transport facilities for other cities in South Africa (ibid)

## **CONCLUSION**

In assessing green procurement practices in South African metropolitan municipalities, this study interrogated current procurement practices in the metropolitans to determine aspects of greening. The study engaged procurement officers, environmental specialists and town planners focusing on their knowledge of green and sustainability issues. At the local government level, different metropolitans make reference to green procurement either implicitly or explicitly in different policies. Policies such as the environmental policy, SCM policy, waste management policy and energy and climate change policies are used to make reference to green procurement. In spite of referring to green procurement in policies, the study found that implementation of green procurement through tender decision, call for tender and the actual procurement is not imminent as evidenced by over 70% of the respondents. This indicates a gap that exists between policies and implementation. Engaging with the metropolitan municipalities in South Africa has proven that a great deal still needs to be done in terms of green procurement at the local level for a developing country like South Africa to be on par with its developed counterparts. A budget allocation is needed for the implementation of green procurement. Procurement officials indicated that green procurement is expensive and that their already overstretched budgets cannot accommodate it. To dispel the notion that green procurement is expensive, metropolitans should be able to allocate a separate budget for the implementation of green procurement. Metropolitans could also work in collaboration with private sectors to achieve green procurement. Lastly, procurement personnel should be particularly skilled in integrating environmental and social considerations into procurement. This could be achieved through formal education and in-service short course training.

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