

# Tackling Climate Change through Green Public Procurement

Public procurement is an essential tool to support climate commitments, including the goal to have climate-neutral government operations and infrastructure. From electric buses to zero energy kindergartens, and recycled construction materials to local organic catering services, city administrations worldwide are increasingly procuring innovative, low-carbon solutions to help them deliver public services in the most sustainable way possible.

Globally, public procurement accounts for between 10 percent and 15 percent of global GDP. This represents a huge degree of purchasing power.

Procurement decisions can have a significant impact on the market and help encourage the provision of more sustainable goods and services.

Almost everything we buy has an effect on climate change, whether this relates to the energy products we consume or the carbon embedded in global supply chains. The most significant procurement sectors for cities include building and infrastructure construction and renovation, transport (covering public fleets, public transport services, as well as the delivery of goods and services), food, energy, and energy-consuming products. In all these sectors, cities are driving new technologies and solutions by providing an invaluable launch market and helping suppliers achieve economies of scale.

Many cities—from Auckland to Tshwane, Oslo to Seoul, and Buenos Aires to Montréal—are putting sustainable procurement strategies and policies in place. The Global Lead City Network on Sustainable

Procurement provides an international platform for cities to highlight their achievements and share their experiences.

## **CITIES IN ACTION**

With an annual spend of nearly €3 billion on goods, works, and services, Oslo in Norway has been working with sustainable procurement for many years. In 2017, its commitment to sustainability was embedded directly within its new procurement strategy, which includes specific objectives on using procurement to promote environmentally sound and socially responsible outcomes. The strategy is accompanied by detailed instructions on how procurement should be carried out by those responsible within the city administration.



This includes instructions on the use of zero-emission vehicles for the delivery of goods and services to the city, promoting the use of recycled materials, and increasing the share of organic food in municipal catering contracts. A major area of work for the city is ensuring that all public construction works are carried out emission-free, meaning the use of zero emission construction equipment and construction material transport.

In South Africa, the public sector has considerable experience in using procurement to meet societal goals, notably through the Preferential Procurement Policy Framework Act, which gives preference to black-owned businesses in public contracts. The City of Tshwane (whose Executive Mayor, Solly Msimanga, is Chair of the Global Lead City Network

on Sustainable Procurement) has moved beyond this, recognizing the potential of procurement in tackling the city's wide-ranging social and environmental objectives. The city has introduced electric vehicles into the municipal fleet and is building new headquarters (Tshwane House) to the five-star Green Star South African standard. The city is developing a Sustainable Procurement Strategy, to be published in 2018, and has committed to ensuring 10 percent of all purchases are sustainable by 2021. It has also signed the Clean Bus Declaration, committing the city to greening 40 percent of the bus fleet by 2020.

In 2007, Seoul Metropolitan Government introduced a governmental ordinance requiring procurers to buy green products where possible. This program uses

a national database of green products certified by the Korea Environmental Industry and Technology Institute under the Ministry of Environment, which procurers can use directly in their procurement processes. When purchasing products, procurers are obliged to check whether a green alternative is included in the database. By 2017, 41.7 percent of all procurement expenditure was spent on green products. Seoul Metropolitan Government also has specific procurement targets, including using electric vehicles in the city-owned fleet, introducing eco-friendly food in schools, installing photovoltaic power in public facilities, and ensuring all new municipal buildings are zero energy.



## Sub-Saharan Africa

Sub-Saharan Africa's cities are home to more than 470 million people, a number that is expected to double over the next 25 years.<sup>287</sup> The region's global share of urban residents is expected to grow from about 11 percent in 2010 to over 20 percent by 2050.<sup>288</sup>

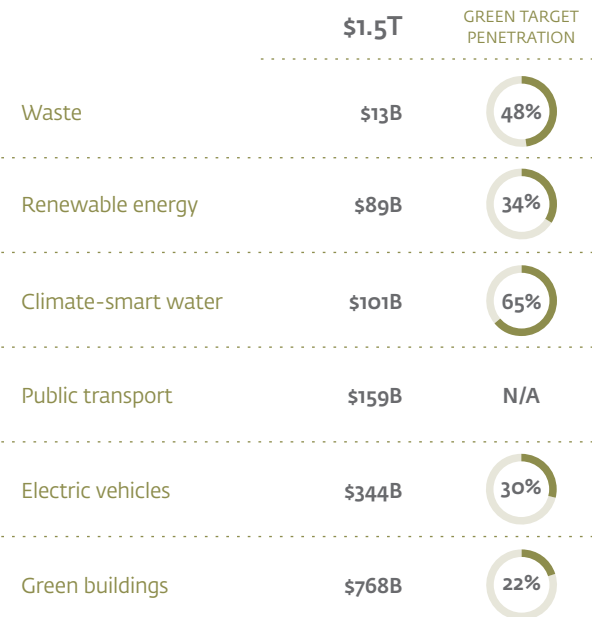
Climate change is one of the leading factors contributing to urbanization in Sub-Saharan Africa. Extreme temperatures and unpredictable rainfall have already affected income from agriculture in the region, which has caused people to migrate from rural to urban areas. Agricultural yields are expected to face losses of up to 15 percent by 2050, signaling further rural-to-urban migration in the coming decades, and the associated pressures on urban infrastructure and services.<sup>289</sup>

Recognizing the role of climate change in shaping their development, and the need to help mitigate it, cities in Sub-Saharan Africa are setting urban planning goals that emphasize climate-related targets. For example, eight cities in the region, including Accra, Addis Ababa, Dar es Salaam, and Lagos, have pledged to achieve zero-carbon economies by 2050 by eliminating emissions from transport, buildings, energy production, and waste management.<sup>290</sup> In South Africa, Cape Town's Climate Action Plan seeks to source 10 percent of its electricity needs from renewable sources by 2020, up from 2 percent in 2016,

excluding nuclear energy. Johannesburg and Cape Town have both issued municipal bonds over several years to meet their development needs. Johannesburg was also the first city in the region to issue a green bond in 2014, which raised more than \$125 million for investments in renewable energy, solid waste management, and hybrid-fuel buses.<sup>291</sup> Greater Accra is developing a Climate Resilient and Integrated Development Project that seeks to implement climate-sensitive urban planning and improve enforcement, particularly on flood and solid waste management.<sup>292</sup>

**A substantial portion of the urban population in the region lives in small and intermediate cities rather than large metropolises.** These cities typically have less access to financing for the provision of low-carbon, resilient infrastructure and services.<sup>293</sup> There is a significant opportunity to fill this gap, and IFC estimates a climate-smart investment potential of \$1.5 trillion in small, medium, and large cities in Sub-Saharan Africa to 2030.

### Estimated Climate Investment Opportunity in Sub-Saharan (2018–2030)





### ADVISORY SERVICES ON WATER IN DURBAN (IFC)

In Durban, South Africa, eThekweni Water Services is the public municipal utility that provides water, sanitation, and wastewater treatment and disposal. Most of the sewage only receives primary treatment before being discharged into the ocean. IFC has an active advisory services engagement with eThekweni Water Services. It intends to develop two greenfield wastewater treatment works and refurbish another (estimated capital cost of \$148 million) using a PPP model. The projects aim to reduce environmental and ocean pollution by providing adequate treatment of wastewater, and are likely to include an indirect water reuse component. It will also increase the water resources available to the city in this water-scarce and drought-affected region.



### BUS RAPID TRANSIT IN DAR ES SALAAM (AFRICAN DEVELOPMENT BANK)

Dar es Salaam is the most populous city in eastern Africa. In 2015, the African Development Bank committed a \$97 million loan and brought in \$44 million from the Africa Growing Together Fund to construct 20km of exclusive bus lanes. Over 1 million people will benefit from the project when it is completed in 2018. The project will also improve air quality for travelers and residents living close to the roadway. Property values are expected to rise as a result of the reduced congestion. Women will be allocated a 25 percent share of construction jobs and 30 percent of the jobs created during operations.



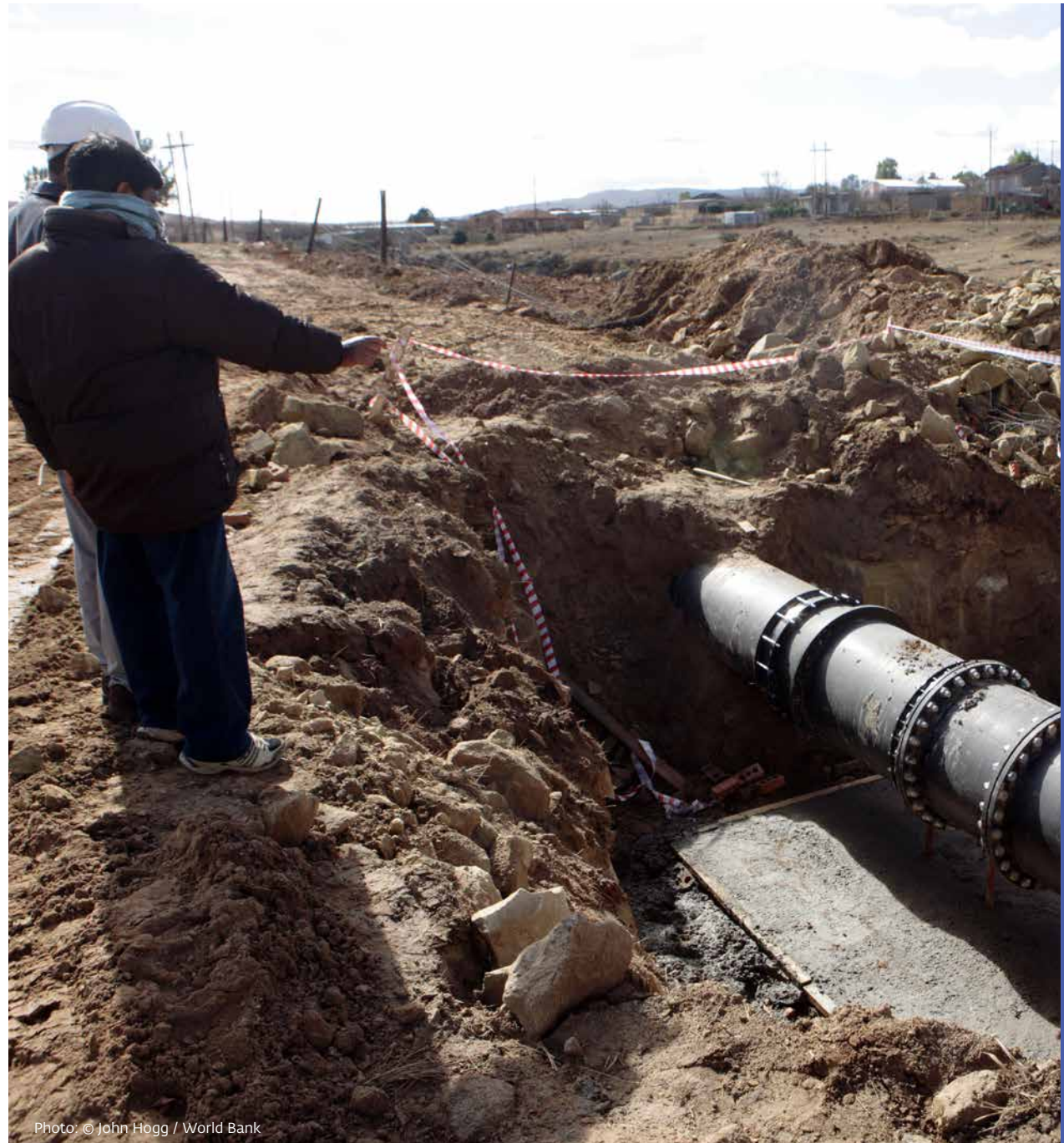
### INVESTING IN TRANSPORT IN ACCRA (AFRICAN DEVELOPMENT BANK)

In 2016, the African Development Bank committed an \$84 million loan to Accra, Ghana, to reduce traffic congestion and accidents. The project will finance a modern three-tier highway exchange in a rapidly developing industrial zone. The infrastructure is designed with a special focus on public transport and non-motorized traffic, providing for mass rapid transit and rail expansion. Traffic accidents in the covered area are projected to decrease by 40 percent by 2020.

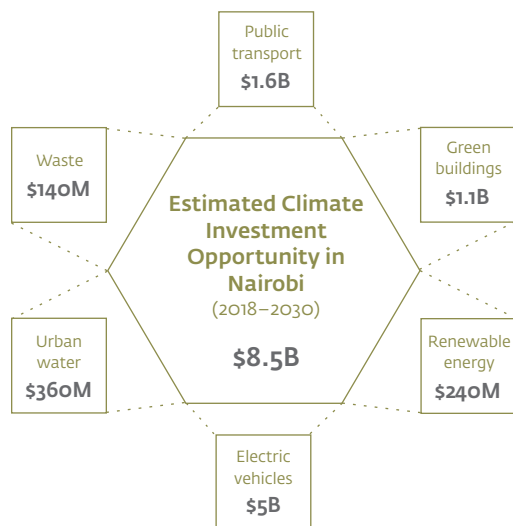


### SUPPORTING MEDIUM-SIZED CITIES IN SENEGAL (AFRICAN DEVELOPMENT BANK)

In March 2017, the African Development Bank committed \$128 million in loans to Senegal to modernize transport infrastructure in 13 medium-sized municipalities. The first phase of the program, Promovilles-1, will rehabilitate and construct 78km of roads with sanitation facilities and lighting, and improve the technical and financial capabilities of municipal authorities. The project also finances five community homes for women, 10 schools, and training in road maintenance and building for 1,500 young people.



# NAIROBI, KENYA



City	Nairobi
Population	4 million
GDP (GDP per capita)	\$6,000
Current GHG emissions	Unknown
GHG reduction target	N/A
Municipal credit rating	N/A

*“The green economy presents a tremendous opportunity for not only Kenya but also all of Africa in so far as innovation and shared value. As we seek to address the effects of climate change, a collaborative approach is necessary to shift the global and pan-African financial system to become a primary enabler of sustainable development. We are thankful that IFC has demonstrated this leadership.”*

— **Nuru Mugambi**, Kenya Bankers Association, Lead on Sustainable Finance

Nairobi is a rapidly urbanizing city with a population that has doubled since 1986.<sup>294</sup> It currently grows at a rate of 4.7 percent,<sup>295</sup> among the highest growth rates in Africa.<sup>296</sup> The city is a key driver of Kenya’s economic growth, contributing almost 13 percent of the nation’s GDP,<sup>297</sup> and home to the fourth largest stock exchange on the continent.<sup>298</sup> The city has a burgeoning technology sector, establishing itself as a regional powerhouse in mobile technology, and has been termed Africa’s Silicon Savannah.<sup>299</sup> Nairobi is working to meet the demands of rapid urbanization and economic growth in a sustainable way, including sourcing over 70 percent of its energy from renewable sources.<sup>300</sup>

## Mitigation and Adaptation Plans

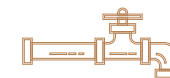
With support from the Japan International Cooperation Agency, the city has developed the Nairobi Integrated Urban Development Master Plan to provide a guiding framework for the city to 2030.<sup>301</sup> The plan focuses on the intersection of urban planning and environment, with an emphasis on sectors such as sustainable transport, water and wastewater, power, municipal solid waste, and telecommunications. The city is working with C40 to formalize a long-term climate plan to align with the goals of the Paris Agreement.<sup>302</sup>

As a member of the 100 Resilient Cities network, Nairobi is in the early stages of appointing a Chief Resilience Officer, who will work with the city to develop a strategy to build its resilience to shocks and stresses, including water shortages.<sup>303</sup> The country's Nationally Appropriate Mitigation Action on Circular Economy Solid Waste Management Approach for Urban Areas in Kenya is to be piloted in Nairobi.<sup>304</sup> The program involves the development of infrastructure to collect and recycle 600 metric tons of waste per day through 15 recycling centers, 16 composting facilities, and a viable compost market, as well as new or improved technologies to enhance the recycling process. The city seeks to partner with the private sector, which will be contracted by the city government to collect and recycle waste, and invest in the recycling and compost facilities.

## Priority Sectors for Investment

WATER

\$360M



Nairobi's water demand is expected to more than double by 2035 from 2010 levels,<sup>305</sup> making it a key sector for development. As per its urban development plan, Nairobi seeks to reduce water losses from theft and leakage from 40 percent to 20 percent by 2030, as well as harness water resources and develop a robust water supply system.

A priority for the city is to expand its distribution network and water supply system, and it has engaged extensively with the World Bank over the years to achieve this goal. Most recently, the city has worked with the World Bank to structure and help finance the Nairobi Bulk Water Supply Project as a \$24 million PPP.<sup>306</sup> The contract to construct raw and treated water gravity mains and the associated pipe network<sup>307</sup> was awarded to the China State Construction Engineering Corporation and the Nanchang Foreign Engineering Corporation in 2016.<sup>308</sup>

Nairobi is also prioritizing storm water and wastewater management. The existing sewerage network collects wastewater from 40 percent of the total area covered by the water supply service, and the city plans to extend this coverage to attain a sewage collection rate of 75 percent by 2030.<sup>309</sup> The city has also begun work to construct an 8km-long storm water drainage system to build its resilience to frequent flash floods, improve its ability to manage its water resources, and mitigate the damage to people and property as a result of storm water.<sup>310</sup>

IFC estimates an investment potential of \$360 million to help Nairobi meet its urban water and wastewater management goals to 2030.



## GREEN BUILDINGS

\$1.1B



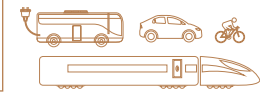
In 2018, Nairobi has seen an almost 12 percent growth in non-residential building construction, as well as the announcement of a large-scale affordable housing program.<sup>311</sup> About 60 percent of Nairobi's population lives in informal settlements<sup>312</sup> and the city needs 1.85 million additional housing units.<sup>313</sup> To meet this deficit, as part of the Kenyan President's Big Four agenda for prioritizing development, Nairobi is expected to construct 30,000 new affordable housing units in the short term, and private companies are expected to be assigned 7,000 acres of public land for development in the long term.<sup>314</sup>

**The expected sharp rise in building construction presents a significant opportunity to ensure that these buildings are green and sustainable.** Some of the largest construction projects in the city are already being designed to emphasize sustainability, energy-efficiency, and reduced energy and water use. One such example was the installation of the largest solar carport in Africa on top of a mall in the city in 2015.<sup>315</sup> The carport is composed of 3,366 solar panels that generate enough energy to power the equivalent of 550 urban homes each year, funded in part by IFC.<sup>316</sup> The mall includes water recycling and rainwater harvesting design elements, for which it has received Leadership in Energy and Environmental Design certification.

**Given the impetus for affordable housing construction, as well as the centrality of Nairobi as a commercial hub in the region, IFC estimates an investment opportunity of over \$1.1 billion to 2030 to green the expected construction of buildings in the city.**

## TRANSPORT

\$6.6B



As walking is the preferred mode of daily transport for 47 percent of Nairobi's population, non-motorized transport is a major consideration in the city's transport plans. The city government formulated and launched its non-motorized transport policy in 2015, which commits 20 percent of the city's road construction budget to non-motorized transport investment.<sup>317</sup> In addition, the city aims to develop its motorized public transport infrastructure and services. Created in February 2017, the Nairobi Metropolitan Area Transport Authority aims to develop a sustainable integrated public transport strategy that focuses on bus rapid transit and commuter rail routes.<sup>318</sup> The city is working with the Japan International Cooperation Agency to develop a plan for an integrated transport system as per the city's urban development plan.<sup>319</sup>

**Nairobi is attempting to develop these initiatives partially through PPPs.** For example, the Mombasa-Nairobi Standard Gauge Railway, launched in 2017, is the largest infrastructure project since the country's independence in 1963.<sup>320</sup> The project's primary contractor was the China Road and Bridge Corporation, which worked with Kenyan institutions to establish training centers for railway technology and operations.<sup>321</sup> As another PPP, Nairobi seeks to emulate the example of Bogotá's bus rapid transit model, and plans to introduce five lines with a total length of about 54km, to be serviced by 950 high-capacity buses.<sup>322</sup> The Nairobi bus rapid transit project is currently seeking private investors as it moves into a pilot stage.<sup>323</sup>

**IFC estimates an investment opportunity of \$1.6 billion for Nairobi to meet its public transportation targets and goals to 2030.**

**The city is also welcoming the expected large-scale adoption of electric vehicles,** given impetus by the national government's development of environmental, health, and safety standards for importing electric cars and motorcycles.<sup>324</sup> Nairobi is home to one of two inspection centers

that are undergoing automation in anticipation of the influx of electric vehicles into the city.<sup>325</sup> First-movers from the private sector are already recognizing this opportunity. Finnish company EkoRent has launched Nopia Ride, a full electric taxi service, in Nairobi. It aims to increase its fleet size to a few hundred vehicles by the end of 2018.<sup>326</sup> Nigerian company Nigus Enfinity plans to introduce electric cars into the city in 2018 and establish a local assembly plant by 2020.<sup>327</sup>

IFC estimates an investment opportunity of almost \$5 billion to 2030 for investments in electric vehicles in Nairobi, including for building the necessary charging infrastructure.

## Financing and Policy Instruments

Nairobi has a strong private sector presence and is the eighth most attractive city in Africa for foreign direct investment.<sup>328</sup> Nairobi is also taking advantage of the national priority to attract private sector participation in infrastructure and using the World Bank's help to develop the laws and frameworks for a national PPP policy.<sup>329</sup> The city is looking to leverage private investment through PPPs for several planned climate-smart projects, including the bus rapid transit network, commuter rail network, and water supply system discussed above. The city is also planning PPPs in other sectors, including a \$2.5 million recycling and waste-to-energy facility at Dandora, one of Nairobi's largest waste dumping sites,<sup>330</sup> and the construction of a student hostel with the capacity to accommodate 35,000 students.<sup>331</sup>

Nairobi is also trying to attract financing from other sources, including international investors, insurance companies, multinational corporations, and various funds. For example, the Nairobi City Water and Sewerage Company has launched the Upper Tana-Nairobi Water Fund in partnership with East African Breweries Ltd, Coca-Cola, and electricity provider KenGen, to raise \$15 million for soil and water



conservation activities in the Upper Tana watershed, which supplies 95 percent of the capital's water.<sup>332</sup>

Recently, Nairobi opened itself to investment through financial products as well. The Kenya Bankers Association partnered with the Nairobi Securities Exchange to develop a green bond market for the private sector.<sup>333</sup> In September 2018, the Nairobi Securities Exchange launched a legal framework to support the issuing of green bonds.<sup>334</sup> Once issued, these bonds are expected to focus on priority sectors including water, waste, and transport. The city has also considered issuing a \$1.24 million municipal bond to fund infrastructure projects that align the city with the National Economic Development Strategy.<sup>335</sup>