WWF

PAPER

ZA

2017

10YFP Sustainable Public Procurement PROGRAMME

IISD International Institute for Sustainable Development

Western Cape Government BETTER TOGETHER.

# Moving towards sustainable performance-based procurement in the Western Cape

## A guidebook for supply-chain managers and policy makers

## About WWF South Africa

WWF is one of the world's largest and most respected independent conservation organisations, with almost 6 million supporters and a global network active in over 100 countries. The organisation's mission is to stop the degradation of the Earth's natural environment and to build a future in which humans live in harmony with nature, by conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption.

WWF South Africa is a national office that is part of the WWF network. It is a local NGO that for more than 40 years has worked towards the aim of inspiring all South Africans to live in harmony with nature, for the benefit of our country and the well-being of all our people.

To achieve the above, WWF-SA aims to: secure the integrity of South Africa's ecological assets (habitats, ecosystems and endangered species); ensure that natural ecosystems and their services underpin social and economic well-being; and play a leading role among developing countries in addressing the risks and opportunities associated with climate change.

WWF South Africa aims to address the underlying economic, social and political issues that underpin all conservation efforts. The organisation involves local communities in decision making, lobby government to change policy and work with business to ensure sustainable use of resources.

WWF South Africa's Policy and Futures Unit undertakes enquiry into the possibility of a new economy that advances a sustainable future. The unit convenes, investigates, demonstrates and articulates for policy makers, industry and other players the importance of lateral and long-term systemic thinking. The work of the unit is oriented towards solutions for the future of food, water, power and transport, against the backdrop of climate change, urbanisation and regional dynamics. The overarching aim is to promote and support a managed transition to a resilient future for South Africa's people and environment.

wwf.org.za

**Authors**: Liesbeth Casier, Lauren Hermanus, Louise Scholtz and Laurin Wuennenberg

**Acknowledgements**: This effort could not have been undertaken without the generous support of the Trust Fund of the 10-year Framework Programme on Sustainable Consumption and Production, coordinated by UN Environment. We are grateful for the support of Karen Shippey and Gray Maguire from the Western Cape Provincial Government.

We would also like to thank the following people for their valuable insights and input into the drafting process, and their interest in and support for sustainable public procurement: Majken Elisabeth Bie, Har Coenen, Jonas Isaksen Dilba, Feng Fang, Kerstin Kopp, Miriam Mayer, Jaap Strating, Maureen Whare and Garry Whitrick, as well as all participants to the workshop on performance-based procurement in November 2016 in Cape Town.

Finally, we would like to thank our colleagues at the International Institute of Sustainable Development for sharing views and providing support to this publication.

**Text editing**: Marlene Rose

**Design**: Farm Design, www.farmdesign.co.za

**Cover photograph**: Shutterstock

**Citation**: WWF (2018) Moving towards performance-based procurement in the Western Cape Province: A guidebook for supply chain managers, WWF South Arica

If you would like to share copies of this paper, please do so in this printed or electronic PDF format.

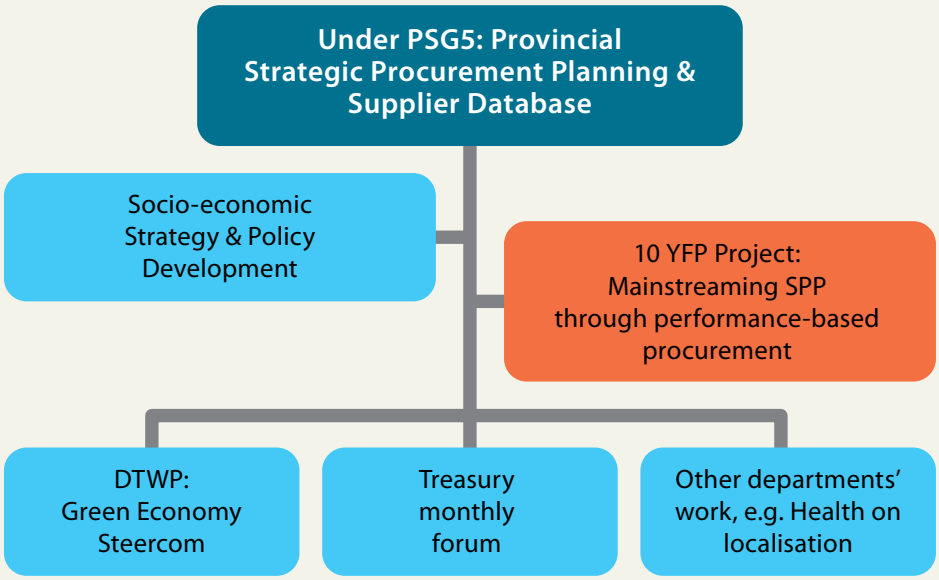
Available online at xxxxx

For more information, contact Louise Scholtz, Programme Manager: Urban Futures, Policy and Futures Unit. lscholtz@wwf.org.za

## About this project

This project is funded under the United Nations 10-year Framework Programme on Sustainable Consumption and Production (10YFP SCP). It focuses on the implementation of performance-based procurement for advancing Sustainable Public Procurement in the Western Cape Province of South Africa. Within the Western Cape the 10YFP SCP project is just one of the strategic procurement projects that are currently under way in the Western Cape Government landscape under the PSG5: Provincial Strategic Procurement Planning & Supplier Database. Figure 1 gives an overview of the institutional home of this project.

**Figure 1: Institutional home of the 10YFP SCP project**




## About IISD

The International Institute for Sustainable Development (IISD) is one of the world's leading centres of research and innovation. The Institute provides practical solutions to the growing challenges and opportunities of integrating environmental and social priorities with economic development. IISD reports on international negotiations and share knowledge gained through collaborative projects, resulting in more rigorous research, stronger global networks, and better engagement among researchers, citizens, businesses and policy makers.

IISD is registered as a charitable organisation in Canada and has 501(c)(3) status in the USA. The Institution receives core operating support from the Government of Canada, provided through the International Development Research Centre (IDRC) and from the Province of Manitoba. It receives project funding from numerous governments across the world, United Nations agencies, foundations, the private sector and individuals.

# CONTENTS


**List of figures** 6

**List of tables** 7

**List of boxes** 8

**Abbreviations and acronyms** 9

**Introduction** 12

PART I: WHY SUSTAINABLE PUBLIC PROCUREMENT AND THE SHIFT TOWARDS PERFORMANCE-BASED PROCUREMENT? 15

- The power of the public purse 15
- International momentum 15
- Performance-based procurement as a way to implement SPP 17
- The South African and Western Cape context 18

PART II: WHAT IS PERFORMANCE-BASED PROCUREMENT? 25

PART III: HOW IS PERFORMANCE-BASED PROCUREMENT IMPLEMENTED? 28

- The legal framework 28
- The business case 32
- The public procurer's skill set 35
- Starting with performance-based procurement 42

PART IV: SUMMARY 44

PART V: CASE STUDIES 46

**Case study 1: Alternative urban water management in Langrug** 48

- Context: Making a case for green infrastructure and incremental informal settlement upgrading 48
- Needs identification and definition of innovation 48
- Procurement approach and procedural activities 49
- Award and terms of the contract 52
- Lessons learned 53

**Case study 2: Waste management solution in Drakenstein** 55

- Context: Sustainable waste management infrastructure 55
- Needs identification and definition of innovation 55
- Procurement approach and procedural activities 56
- Award and terms of the contract 59
- Lessons learned 60

**Case study 3: Energy performance contracting for municipal buildings in the City of Cape Town** 64

- Context 64
- Needs identification 64

Procurement approach 65
Contract execution and performance clauses 67
Lessons learned 69

**Case study 4: Tender specifications and evaluation criteria for energy efficiency (services) in the City of Cape Town 70**

**Case study 5: Innovative business model for energy-efficient lighting in Sala Municipality, Sweden 74**
Context: Municipality-wide street-lighting refurbishment 74
Needs identification 75
Procurement approach and procedural steps 75
Award decision 76
Contract design and execution 76
Lessons learned 76

**Case study 6: Innovation procurement for building refurbishment in Enzkreis County, Germany 79**
Context: Innovative materials and works for a vocational school building 79
Needs identification 79
Procurement approach and procedural steps 80
Award decision 82
Lessons learned 84

**Case study 7: Innovation procurement for new building materials in Oslo Municipality, Norway 87**
Context: Material procurement for new nursing home 87
Needs identification 87
Procurement approach and procedural steps 88
Evaluation of offers 90
Lessons learned 90

**Case study 8: Best Value procurement for building refurbishment in Eindhoven Municipality, Netherlands 91**
Context: Material and service innovation for municipal buildings 91
Needs identification and definition of innovation 91
Procurement approach and procedural steps 92
Award of contract 98
Lessons learned 98

**Case study 9: Procurement of innovative technologies and operational services for wastewater treatment in Limburg Province, Netherlands 101**
Context: Procurement of new sludge hydrolysis digestion plant and operational services 101
Needs identification 101
Procurement approach and procedural steps 102
Award of contract 105
Performance issues and contract modification 106
Lessons learned 106

**References and further reading 109**

# LIST OF FIGURES


| | | |
|---|---|---|
| Figure 1: | Institutional home of the 10YFP SCP project | 3 |
| Figure 2: | Multiplier benefits of sustainable public procurement | 20 |
| Figure 3: | Top ten global risks in 2017 | 21 |
| Figure 4: | Introducing sustainability into the procurement cycle | 24 |
| Figure 5: | Example of product-service combinations to fulfil mobility needs | 27 |
| Figure 6: | Various procurement procedures derived from the EU Public Procurement directive (2014) | 31 |
| Figure 7: | Graphical representation of LCC and TCO | 34 |
| Figure 8: | Market engagement | 36 |
| Figure 9: | Potential pre-procurement activities | 37 |
| Figure 10: | Areas in Langrug without and with Genius of SPACE | 49 |
| Figure 11: | New LED lights (foreground) and old high-pressure sodium vapour lamps (background) in the centre of Sala | 74 |
| Figure 12: | Vocational school building before the refurbishment work (left) and after (right) | 83 |
| Figure 13: | Projected Lindeberg nursing home | 88 |
| Figure 14: | Project scope Eindhoven | 92 |
| Figure 15: | Wastewater treatment plant in Venlo | 102 |

# LIST OF TABLES


| | | |
|---|---|---|
| Table 1: | SPP commitments and targets | 22 |
| Table 2: | Graphic depiction of the SPP focus areas | 23 |
| Table 3: | Relevant procurement laws and policies in South Africa and the Western Cape | 29 |
| Table 4: | Overview of different forms of market engagement | 39 |
| Table 5: | Key milestones in the PPP process | 57 |
| Table 6: | Approvals to be obtained | 58 |
| Table 7: | City of Cape Town evaluation criteria for tender submissions | 73 |
| Table 8: | Award criteria and subcriteria for Lot 1 and Lot 2 | 81 |
| Table 9: | Operationalisation of energy efficiency for Lot 1 and Lot 2 | 82 |
| Table 10: | KPIs of sludge treatment process and cost implications | 104 |

# LIST OF BOXES


| | | |
|---|---|---|
| Box 1: | What is sustainable public procurement? | 12 |
| Box 2: | Performance-based or functional procurement: when procurement focuses on the desired outcome rather than the prescription of how to achieve it | 13 |
| Box 3: | What are the Sustainable Development Goals (SDGs)? | 16 |
| Box 4: | South Africa and the Western Cape as an innovation hub | 23 |
| Box 5: | Example City of Cape Town (CoCT) on professional service for workforce development programme | 25 |
| Box 6: | Performance criteria for contract award of a concrete bicycle lane in the Netherlands | 26 |
| Box 7: | Product-service systems as a result of performance-based procurement | 27 |
| Box 8: | Public procurement procedures in the EU Public Procurement directive to drive the shift towards performance-based and sustainable public procurement | 31 |
| Box 9: | Total cost of ownership and lifecycle costs | 33 |
| Box 10: | The potential of innovation funds | 35 |
| Box 11: | Online market engagement in Copenhagen municipality | 38 |
| Box 12: | Open market consultations in Oslo for innovative building materials | 38 |
| Box 13: | Market Engagement in Sala Municipality for energy-efficient lighting solutions | 39 |
| Box 14: | Refurbishment of municipal buildings in Eindhoven | 41 |
| Box 15: | City of Cape Town's tender for detailed audits and lighting energy-efficiency interventions at council facilities | 42 |
| Box 16: | Energy-efficiency procurement by the City of Cape Town | 43 |

# ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| BBBEE | Broad-Based Black Economic Empowerment |
| BRIP | Berg River Improvement Plan |
| CoCT | City of Cape Town |
| DEA&DP | Department of Environmental Affairs and Development Planning (Western Cape) |
| DEDAT | Department of Economic Development and Tourism (Western Cape) |
| DEW | Drakenstein Environmental Watch |
| DHS | Department of Human Settlements |
| DS | Dry solids |
| DTWP | Department of Human Settlements |
| EEDSMP | Energy Efficiency Demand Side Management Programme |
| EPC | Energy Performance Contracting |
| EPWP | Expanded Public Works Programme |
| ESCO | Energy Service Company |
| EU | European Union |
| FDI | Foreign Direct Investment |
| GDP | Gross Domestic Product |
| GETS | Government Electronic Tender Service |
| GHG | Greenhouse gas |
| GPP | Green Public Procurement |
| ICT | Information and Communication Technology |
| IDRC | International Development Research Centre |
| IISD | International Institute for Sustainable Development |
| IPP | Independent power producer |
| KPI | Key performance indicator |
| LCC | Lifecycle cost |
| LED | Local economic development |
| LED (lighting) | Light-emitting diode |
| MFMA | Local Government: Municipal Finance Management Act |
| MOA | Memorandum of Agreement |
| MOU | Memorandum of Understanding |
| MW | Megawatt |

| | |
|---|---|
| NAMA | National Adaptation and Mitigation Actions |
| NERSA | National Energy Regulator |
| NPV | Net present value |
| OECD | Organization for Economic Cooperation and Development |
| O&M | Operations and maintenance |
| PBS | Performance-based specification |
| PERO | Provincial Economic Outlook Report |
| PFMA | Public Finance Management Act |
| PIN | Prior information notice |
| PPI | Public procurement of innovation |
| PPP | Public-private partnership |
| PPPFA | Preferential Procurement Policy Framework Act |
| PSS | Product-service systems |
| R&D | Research and development |
| RFP | Requests for proposal |
| SCM | Supply chain management |
| SDGs | Sustainable Development Goals |
| SEIA | Social and Environmental Impact Assessment |
| SMART | Specific, measurable, ambitious, realistic, time bound |
| SME | Small and medium-sized enterprises |
| SPACE | Systems for People's Access to a Clean Environment |
| SPEA | Smart Procurement European Alliance |
| SPP | Sustainable public procurement |
| SPV | Special Purpose Vehicle |
| 10YFP SCP | 10-year Framework Programme on Sustainable Consumption and Production |
| TCO | Total cost of ownership |
| TL | Translucent light |
| ToR | Terms of reference |
| UCW | Unit-cell waveguide |
| VFM | Value-for-money |
| UN | United Nations |
| UNEP | United Nations Environment Programme (now UN Environment) |
| USA | United States of America |
| WCG | Western Cape Government |
| WCPTI | Western Cape Provincial Treasury Instructions |
| WTE | Waste to Energy |

# INTRODUCTION

Public procurement is 'not a back-office function anymore, but a crucial pillar for delivering government services, and a strategic one for tackling climate change.'[1]

Worldwide governments are strategically rethinking the way they are spending taxpayers' money. The international and high-level support for reforming public procurement laws, policies and processes to deliver value for money across the lifecycle of the goods, services and assets governments are buying, has never been more present. In 2015 the United Nations also adopted the Sustainable Development Goals (SDGs) that include public procurement as an important tool for shifting markets towards more sustainable consumption and production patterns.

**Box 1: What is sustainable public procurement?**

UN Environment defines sustainable public procurement (SPP) as 'a process whereby organisations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organisation, but also to society and the economy, whilst minimising damage to the environment' (UNEP, 2015). A sustainable procurement choice is one that accounts for the full value of a service or product over its whole lifecycle, including costing of social and environmental risk and opportunities.

Sustainable, green, smart or strategic public procurement is ultimately about ensuring that the products and services purchased by governments are as sustainable as possible. This means reducing environmental impact, generating positive social and economic impact in a cost-efficient manner, and driving and creating new markets for innovative climate-friendly technologies, goods, services and infrastructure that generate co-benefits for society.

Reforming public procurement from an administrative to a strategic function of government will not happen overnight. It requires a fundamental shift in mindset on the part of public agencies. What is important is to understand the need to reform processes, the extent to which this can happen within the current legal frameworks, and to build capacity within government and provide resources to undertake this shift.

One way to implement strategic public procurement is to move towards performance-based procurement. That is the focus of this guidebook: explaining why, what and how to ensure that public procurement focuses on the best available technologies to meet public needs, rather than purchasing yesterday's solutions. Performance-based procurement is related to policies on innovation, and can also help to implement them as well as any other development priorities a country wants to pursue. This guidebook draws from international experience and case studies on the processes of performance-based procurement, as well as on South African examples of this kind of procurement. It also highlights the challenges and barriers that may arise when municipalities and provincial governments want to implement performance-based procurement, and provides tools and approaches to tackle the challenges.

1 Quote from EU Commissioner for Internal Market, Industry, Entrepreneurship and SMEs Elżbieta Bieńkowska and Organisation for Economic Co-operation and Development (OECD) Secretary-General Angel Gurría at a joint high-level event on strategic public procurement in Paris on 2 June 2017.

**Box 2: Performance-based or functional procurement: when procurement focuses on the desired outcome rather than the prescription of how to achieve it**

Performance-based procurement – defined in more detail in Part II of this guide book – is a way to put the performance of a specific public good, service or infrastructure project at the heart of the procurement process. It means using taxpayers' money in a way that creates the largest value for money for citizens, society, the economy and the environment by allowing bidders to provide innovative solutions to public needs that the public procurers may not yet be aware of. It allows public procurers to buy the best available technologies and shifts the procurement profession away from an administrative to a strategic function. This guidebook describes how the mindset of public procurers and the processes have to change to make procurement more performance based.

Performance-based procurement will describe a performance or the functionality of what procurers and end users seek to buy, rather than the product or service itself. In other words, the specification will outline *what* the end users seek to realise but not *how* it should be realised.

For example, a technical specification for a heating system might require that the supplier provides an oil furnace made of heavy-gauge steel with fibreglass insulation, return airflow located at the top of the unit, a belt-driven fan, and so on. To address the same need, a performance-based specification (PBS) might simply require a solution that would keep a building of a particular size at an ambient temperature of 24– 26 °C.

The case for using these types of specifications is that it provides suppliers with the opportunity to bring forward and supply the best available technologies that will increase efficiency in the delivery of public goods and services and thereby optimise value for money across the asset lifecycle. The private sector is continuously innovating and improving the efficiency and, indeed, the environmental and social footprints of their products and services. Hence, they have the necessary intelligence to suggest how a particular requirement can be fulfilled in the most cost effective and efficient manner.

Procurers and end users, on the other hand, are not likely to be informed of the most recent technological innovations. Therefore, in developing non-performance-based specifications, procurers may well be tendering for yesterday's technologies rather than the latest and most efficient ones. This risk – the performance risk – can be mitigated through better engagement with the market in the pre-procurement phase, during negotiations and during the monitoring of performance after a contract is awarded (Turley et al, 2014).

This guidebook will provide guidance on how to do that in a legally compliant manner, and in a cost-efficient way.

The guidebook is structured as follows:

**Part I** explains why sustainable public procurement matters, and why a shift to performance-based procurement helps to achieve it. It touches upon the international momentum regarding sustainable procurement practices and relates it to the context of South Africa and the Western Cape's development strategies.

**Part II** examines in more detail the meaning of performance-based procurement and uses examples to illustrate what performance-based procurement would entail. It also shows how to bring the thinking around 'performance' into the various steps of the procurement cycle.

**Part III** deals with the Western Cape context and answers the questions of policymakers and public procurers in the Western Cape: how is this compatible with the current legal framework, accounting rules, the skill set of public procurers and resources for changing processes? It also provides recommendations on what can be done to scale up the effort and resources for making more strategic use of the public procurement function to drive the transition to an inclusive, green economy. Examples are given of tenders where the specifications, the awarding of contracts and the monitoring place's 'performance' of a good or service are emphasised to provide better value for money for public resources. We also discuss the different ways public procurers can interact with suppliers in a legally compliant manner so as to better understand the innovations and new products that are available in the market. Questions around the business case for performance-based procurement are also addressed.

**Part IV** of the guidebook summarises the steps for moving forward with performance-based procurement.

**Part V** presents international and national case studies on performance-based procurement and gives ideas and best practices for implementing this in the Western Cape. Case studies include, among others, a waste management infrastructure project in Drakenstein, energy performance contracting in Cape Town, alternative urban water management in Langrug, energy-efficient lighting in Sweden, building refurbishment in Germany, energy-efficient solutions for municipal buildings in The Netherlands, innovative building materials in Norway, and innovative technologies and operational services for wastewater treatment in the Netherlands. Each case study also includes feedback on the replicability potential in the South African and Western Cape context.

# PART I:

# Why sustainable public procurement and the shift towards performance-based procurement?

## The power of the public purse

Public procurement represents, on average, 12% of the GDP in Organization for Economic Cooperation and Development (OECD) countries, corresponding to 29% of government expenditures (OECD, 2017). This illustrates that public procurement is a powerful tool for driving markets towards more sustainable production and consumption patterns, and for creating markets for sustainable goods, services and infrastructure. In South Africa, public procurement represents on average 29% of the GDP (IISD, 2014). That means there is significant potential for public procurement to be leveraged to address South Africa's environmental, economic, social and financial challenges.

## International momentum

Internationally, public procurement has gained a lot of attention in recent years as a way to deliver upon governments' development strategies, but to date this has been underutilised. The international community – from the UN and OECD to the World Bank – is helping to increase awareness about the importance of better spending of taxpayers' money.

The UN Sustainable Development Goals – the overarching framework for development strategies in UN member states until 2030 – also encourage sustainable public procurement to help drive a shift towards more sustainable consumption and production patterns.

**Box 3: What are the Sustainable Development Goals (SDGs)?**

The SDGs were adopted in September 2015 as part of a wider UN Agenda on Sustainable Development to be implemented by all UN member states by 2030. These goals will guide the development strategies of countries over the next decade and aim to 'end all forms of poverty, fight inequalities and tackle climate change, while ensuring that no one is left behind' (UN, n.d.). There are 169 targets developed under the goals to help facilitate their implementation, and a global indicator framework with 232 indicators was adopted in March 2017 to monitor the progress on the goals. The SDGs are not legally binding but governments have pledged to implement national frameworks to achieve the targets, and engage in regular monitoring and progress review.

Source: un.org/sustainabledevelopment/development-agenda
For more information: sustainabledevelopment.un.org and sdg.iisd.org

SDG 12 is about ensuring responsible consumption and production. The eight targets under this goal illustrate what success would look like in 2030. Target 12.7 is 'Promote public procurement practices that are sustainable, in accordance with national policies and priorities'.

In addition to SDG 12, there are various other goals that can be achieved through a reform of public procurement laws, policies, practices and processes. SDG 9 on infrastructure is an example. The importance of infrastructure in the delivery of the SDGs should not be underestimated. More strategic use of public funds, and sustainable public procurement, will be crucial in delivering the infrastructure needed to achieve the SDGs (Casier, 2015).

Even before the adoption of the SDGs, the 10-year Framework Programme on Sustainable Consumption and Production (10YFP SCP) was put in place at the Rio+20 conference to enhance global cooperation to accelerate the shift towards

more sustainable consumption and production.[2] As a member of the United Nations, South Africa's Green Economy Accord of 2011 was signed to support the Rio+20 Outcomes that commit member states to promote measures for sustainable consumption and production and green economy in the context of sustainable development and poverty alleviation. The shift to more sustainable value chains and more strategic use of our procurement power has been included as an important sub-theme under the 10YFP programme.

In addition to UN processes, institutions worldwide stress the strategic function of public procurement and promote a shift in the meaning of value for money away from lowest price at the point of purchase to overall value for money across the lifecycle, encompassing total cost of ownership and quality aspects of the good, service or asset.

For example, the OECD Leading Practitioners on Public Procurement Working Party approved a recommendation[3] in 2015 that refers to public procurement as a tool to deliver secondary policy objectives such as 'sustainable green growth, the development of small and medium-sized enterprises, innovation, standards for responsible business conduct or broader industrial policy objectives'. In addition, the World Bank New Procurement Framework's[4] vision emphasises that the objective of procurement is 'to achieve value for money with integrity to deliver sustainable development'.

The EU Public Procurement Directive (2014),[5] the guiding legal framework on public procurement for EU member states, and regarded as international best practice, has now included explicit references to the use of public procurement to deliver on strategic priorities of government, with due regard to the principles of efficiency, transparency, non-discrimination, integrity and value for money. The way this legal framework supports and encourages performance-based procurement, and ultimately sustainable public procurement, will be explained under Part III of this guidebook.

## Performance-based procurement as a way to implement SPP

Moving towards performance-based procurement is a powerful way of implementing sustainable public procurement because it triggers changes throughout the entire procurement process. It does not assume that public agencies are already aware of what these solutions look like, but empowers them with the information and skills necessary to become drivers of change. This is especially useful in the South African context where functionality criteria operate on a pass/fail basis. It results in multiplier effects – described in Figure 2 – and has huge potential for driving innovation, job creation and sustainable development in the longer term without requiring supply-chain managers to become a technical expert in every good or service for which they manage procurement.

2 unep.org/10yfp
3 oecd.org/corruption/ethics/draft-recommendation-on-public-procurement.htm
4 wbnpf.procurementinet.org
5 eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02014L0024-20160101

Performance-based procurement can be implemented at various stages of the procurement cycle. Depending on the magnitude and complexity of the procurement, public agencies can rethink the way they are deploying taxpayers' money. In what follows, we explain how sustainability can be introduced in the procurement cycle by bringing in a focus on the performance of a solution, rather than the technical characteristics of solutions that are already known to the general public.

## The South African and Western Cape context

The commitment to developing the Green Economy in South Africa has been strengthened by international commitments such as the SDGs, the Paris Climate Agreement and the new Urban Agenda. In this global landscape a Green Economy is recognised as 'an economy that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities' (UNEP, 2014). The green economy requires a greening of the economy and economic activities in a holistic way so that value chains and value creation are undertaken in a way that does not compromise the well-being of people and the environment. As such, it is a challenge for the whole of society. Sustainable public procurement is used as a strategic tool to support the transition to a sustainable and inclusive economy. It is implemented in national and subnational governments, as well as the private sector equivalent in leading corporate entities.

The Western Cape Government (WCG) has committed to the implementation of policy for inclusive and sustainable economic growth. The markers of inclusive growth that have framed this economic policy approach include sustainable productive job creation, productivity levels and increased real earnings of currently employed people. It is recognised that government plays an important role in enabling innovation and entrepreneurial growth. The Western Cape Government has identified growth in 'green' job creation in renewable energy and related industries, and in the agricultural sector (both production and processing) as potential drivers of inclusive growth (WCG Provincial Treasury, 2014).

This prioritisation is supported by the Green Economy strategy framework for the province, *Green is Smart*, under which specific projects have been implemented to unlock potential in these sectors (WCG, 2013). The 2016 Provincial Economic Outlook Report (PERO) (WCG Provincial Treasury, 2016) recognised the explicit role of government in stimulating innovation and entrepreneurial growth as a path to promoting inclusive growth. As such, the Green Economy portfolio has actively supported de-risking areas of innovation and providing platforms from which to launch new green products and services.

In South Africa, sustainable public procurement aligns to the National Development Plan (2012), the New Growth Path (2011), and the Industrial Policy Action Plan (2007), all of which prioritise both localisation of industrialisation and resource efficiency. In the Western Cape, the Western Cape Government has identified sustainable public procurement as a strategic lever to support various policy goals, especially in the Green Economy. Particular supportive policy includes the Provincial Strategic Plan (2014), the *Green is Smart* Western Cape Green Economy Strategy Framework (2013), and the Western Cape Climate Change Response Strategy (2014).

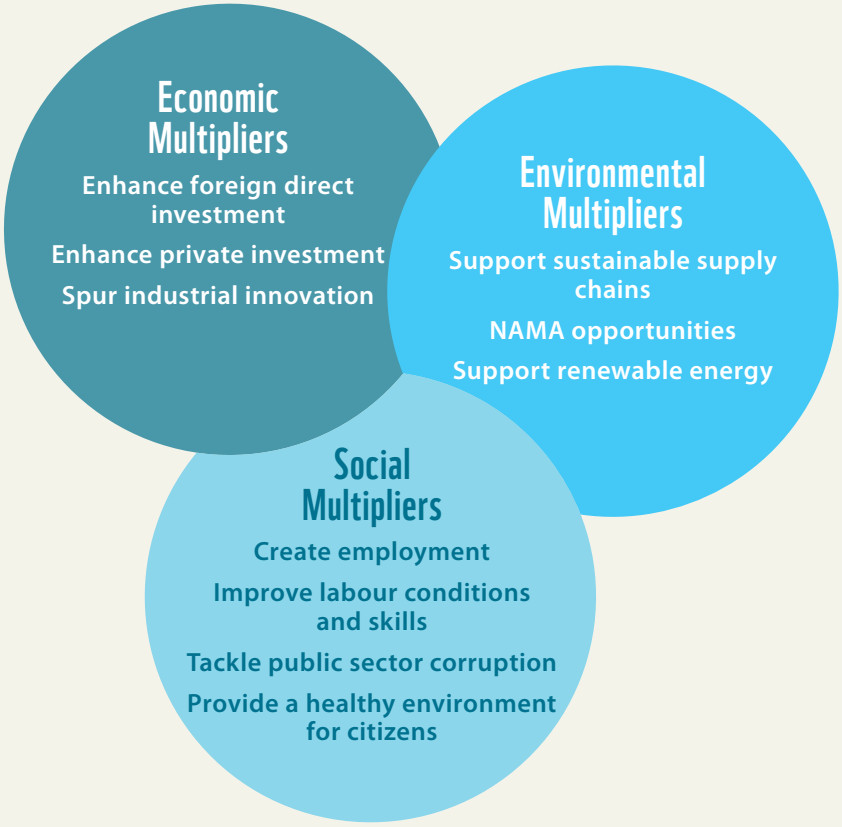
Sustainable options in public procurement should not be considered a luxury or a 'green premium' because most often in the medium and longer term these options mean lower future cost and multiplier effects across the economy. Greener or more sustainable procurement choices offer:

- short- to long-term cost and natural resource savings
- risk management
- future-proofing/increasing climate resilience
- improvements in infrastructure and service delivery through innovation.

Of course it is important to measure, quantify and make the business case for sustainable public procurement. Today we see that the co-benefits (or costs) of certain procurements are not sufficiently taken into account in procurement decisions: from planning, tendering and awarding to monitoring contracts.

Better public spending will result in multiplier effects, or co-benefits across the economy, captured in Figure 2.

**Figure 2: Multiplier benefits of sustainable public procurement**



Sustainable public procurement augments the accepted function of government procurement, which is to acquire goods, services and infrastructure in a fair, transparent and competitive manner, on the most favourable terms possible. It allows for procurement to support other critical policy objectives that address societal and environmental challenges. South Africa faces substantial service delivery challenges, has infrastructure that is aging and in many cases inadequate, and has to deal with complex socio-economic challenges associated with high unemployment. Additionally, the latest Western Cape Government State of the Environment Outlook Report showed alarming trends in the integrity of the province's natural resources and ecosystems.

The World Economic Forum identified vulnerability of the economy to resource scarcity and natural and man-made disasters in its top 10 global risks (see Figure 3). This shows that it is important to direct public funding – among other things through more strategic public procurement decisions – to long-term positive benefits for society and the economy as a whole. Performance-based procurement can help achieve that.

**Figure 3: Top 10 global risks in 2017**

**Global risks in terms of likelihood**

1 Extreme weather events
2 Large-scale involuntary migration
3 Major natural disasters
4 Large scle terrorist attacks
5 Massive incident of data fraud/theft

**Global risks in terms of impact**

1 Weapons of mass destruction
2 Extreme weather events
3 Water crises
4 Major natural disasters
5 Failure of climate change mitigation and adaptation

Source: Adapted from World Economic Forum Global Risks Report 2017, http://reports.weforum.org/global-risks-2017

The implementation of sustainable public procurement will drive the shift towards sustainable consumption and production (SCP) patterns. It will enable the development and stimulation of a domestic market for more sustainable goods and services. It will also support resource-efficiency across economic sectors and reduce greenhouse gas (GHG) emissions. Both public and private consumers and producers in South Africa thereby stand to benefit from this shift.

As services are extended to those who were historically excluded, and as the population grows, the above context demands that the goods and services procured by government are fit to meet these changing demands. Sustainable public procurement presents the opportunity to support local industry and achieve responsible labour practices, positive impacts on local communities, as well as environmental responsibility, resource efficiency and green innovation in industry. Because sustainable public procurement supports green innovation, it allows government to procure more resilient 'future-proofed' goods and services. These deliver both better value to citizens and services that are more fiscally prudent over the longer term, throughout the total lifespan of the investment.

The procurement legal landscape in South Africa is shifting. This change started with the new preferential procurement regulations gazetted in January 2017, but more comprehensive reform is expected when an overarching Public Procurement Act is published for comment later in 2017. According to some commentators, the revised regulations give organs of state a powerful tool to drive their transformation agendas through their procurement spend (Kota, 2017). The finance minister at the time, Pravin Gordhan, is quoted in the media as saying: 'The regulations aim to use public procurement as a lever to promote socio-economic transformation, empowerment of small enterprises, rural and township enterprises, designated groups and promotion of local industrial development',[6] in line with the current dialogue on inclusive economic growth in South Africa.

The Western Cape Government has elevated strategic procurement to a provincial priority, managed under Provincial Strategic Goal 5: Embed good governance and integrated service delivery through partnerships and spatial alignment. This includes the piloting of a new national e-procurement system that will allow for SPP management and performance to be tracked.

**Table 1: SPP commitments and targets**

| Relevant entity | Commitment/target |
|---|---|
| Provincial Treasury implementing National Department of Trade and Industry | Implement 75% local content in procurement by 2019 (Local Procurement Accord 2011) |
| Western Cape Government | Position the Western Cape as the green economic hub of Africa and be the lowest carbon province. WCG and City of Cape Town, as major property owners and users of electricity and water, to take the lead in promoting resource efficiency. (*Green is Smart*: Western Cape Green Economy Strategy Framework 2013) |
| Western Cape Department of Human Settlements | Allocate 30% of budget to the procurement of sustainable technologies for housing |
| Western Cape Department of Transport and Public Works | Ensure all new WCG accommodation is certified to a minimum of a 4-star Green Star rating (Transport and Public Works Annual Performance Plan 2015/16) |

6 treasury.gov.za/comm_media/press/2017/2017012301%20-%20Media%20Statement%20revised%20PPR.pdf

The Department of Environmental Affairs and Development Planning (DEA&DP) has worked in partnership with the Provincial Treasury and the Department of Economic Development and Tourism (DEDAT) to pull together under the single coherent frame of sustainable public procurement all the strategic initiatives and policy imperatives that deal with the socio-economic and environmental impact of procurement. In line with global good practice, the Western Cape Government uses the UNEP definition of 'procurement'. Taking the local context, as well as provincial and national priorities into account, SPP focus areas are supported by a strong foundation of good governance and intelligence. This includes a redesign of the Central Supplier Database as well as Supplier Development. The conceptual framework is represented in Table 2. The Provincial Cabinet has mandated DEDAT to draft a policy that provides a strategic, coherent and implementable framework to address the economic, social and environmental impacts of procurement, incorporating national and provincial policy objectives.

**Table 2: Graphic depiction of the SPP focus areas**

| Sustainable public procurement (SPP) focus areas | | | | |
|---|---|---|---|---|
| Localisation/local content | Support for small, medium and micro-enterprises | Preferential procurement and BBBEE | Ethical procurement (covering labour practices and human rights) | Green procurement |
| Cross-cutting governance interventions support SPP. These include: National and Western Cape Government Strategic Procurement Strategy; E-Procurement; Professionalisation of Procurement Staff; and Transversal SPP Working Group. | | | | |

The Western Cape Government's core values – caring, competence, accountability, integrity, innovation and responsiveness, all underwrite the province's engagement with sustainable development. All these core values are in line with and support a drive towards performance-based procurement. In particular, performance-based procurement requires accountability and transparency, and can help scale up innovative solutions because of the massive purchasing power the province and the municipalities have. The value of accountability also means that public servants are tasked and have the responsibility to deliver the best public services to the taxpayer. This includes strategic, sustainable and green procurement.

The emphasis on the value of innovation is very important and justifies the approach towards performance-based procurement, as stated in the Western Cape Government's Provincial Strategic Plan 2014–2019:

> 'To be open to new ideas and develop creative solutions to challenges in a resourceful way:
>
> - We seek to implement new ideas, create dynamic service options and improve services;
> - We are citizen-centric and strive to be creative thinkers who view challenges and opportunities from all possible perspectives;
> - We have the ability to consider all options and find a resourceful solution;
> - We value employees who question existing practices with the aim of renewing, rejuvenating and improving them;
> - We foster an environment where innovative ideas are encouraged and rewarded;
> - We understand mistakes made in good faith and allow employees to learn from them;
> - We problem-solve collaboratively to realise our strategic organisational goals.'

### Box 4: South Africa and the Western Cape as an innovation hub

South Africa and the Western Cape province are often associated with innovation. Much of it is already happening; it is merely a matter of scaling and putting public resources – among other things – behind the innovation potential of the Western Cape and South African economy. Performance-based procurement can help to achieve that. Some examples of innovation-related initiatives in the Western Cape are:

- Cape Innovation and Technology Initiative: citi.org.za/about-us
- Accelerate Cape Town Innovation Programme: acceleratecapetown.co.za/programmes/innovation
- The Western Cape Department of Health has won the 2015 prize for the Health Care Climate Champion for its solutions to move towards low-carbon healthcare (Global Green and Healthy Hospitals, 2015).
- In 2010 the Western Cape Government established GreenCape as special purpose vehicle to drive the widespread adoption of economically viable green economy solutions for the Western Cape. It brings together businesses, investors, government and academia to help unlock investment and innovation for driving an inclusive green economy in the Western Cape province: greencape.co.za

**Figure 4: Introducing sustainability into the procurement cycle**

# PART II:
# What is performance-based procurement?



We will explain what we mean by performance-based procurement through different examples. This will give public agencies and procurers a better understanding of what performance-based procurement means, and illustrate the shift in mindset from viewing public procurement as an administrative function to a more strategic one.

**Box 5: City of Cape Town professional service for workforce development programme**

The City of Cape Town put out a tender for an outcomes-based workforce development programme. It defined the scope of the required service by clearly listing the needs to which the programme had to respond:

1. Reduce the number of discouraged work seekers by identifying, preparing and placing residents in education, training and ultimately work opportunities. This will help them to overcome the exclusionary nature of the work network by increasing their skills in line with current and future hiring needs.
2. Engage business (industry) to identify ways in which the workforce's needs (sector workforce requirements) can be supported by developing initiatives such as integrated employment plans, etc. in conjuction with employers, government and other actors in the economy.
3. Determine the cost of achieving outcomes with a view to developing benchmarks for possible future outcomes-based workforce development contracts.
4. Identify strong delivery models which overcome the spatial and support service accessibility faced by residents in Cape Town.
5. Enable small, medium and micro-enterprises (SMMEs) recruitment and selection processes (reduced time/costs/risks) for those employment opportunities through access to a database of workforce-ready residents.
6. Support economic inclusion by ensuring that all residents benefit from the City's workforce development approach through access to jobs.
7. Coordinate actions in order to increase efficiencies and effectiveness of services for both employers and jobseekers.

The City of Cape Town determined that there was a need for an assessment tool that service providers could use to assess unemployed residents. The work readiness programme had to be assessed on education and training received, and successful placements. This leaves room for bidders to come up with innovative solutions in designing the tool and programme.

Performance-based procurement can be used for all types of procurement: from goods, services and design competitions to infrastructure. It places the performance of the asset at the core of the process. That allows for much more innovation to be brought into the delivery of public services as procurers will go out to the market to buy the best available technologies, the most cost-efficient ones, and the ones that will have the most positive impact on society, the environment and the economy.

It is important to understand that performance-based procurement is only a means to an end: if it is to serve inclusive, sustainable development it has to be designed in a way that delivers sustainability outcomes throughout the scope of the procurement, the engagement with the market, the specifications, the award stage, contract conditions and monitoring. We will illustrate throughout this guidancebook how that can be done.

**Box 6: Performance criteria for contract award of a concrete bicycle lane in the Netherlands**

Using performance-based specifications is another way to illustrate what we mean by performance-based procurement. Specifications that do not prescribe the technical specifications of the product, but rather specify the **performance** of the product will allow bidders to provide more innovative solutions and ones that the public agencies are not yet familiar with. This example is from a tender for a concrete bicycle lane in the Netherlands:

1. Reuse of secondary products (concrete granulate and secondary sand)
2. $CO_2$ footprint of concrete production (per $m^3$) – from stage of extraction and production of all materials, storage and transport to production site until the concrete mix is ready for transportation.

A table included in the tender explained how much monetary value could be deducted from the bidding price depending on the percentage of secondary materials used in the concrete mix. Another deduction can be made based on the achieved level of $CO_2$ emissions. The Netherlands uses a tool that monetises reductions in $CO_2$ emission.

For example, when public procurers buy information and communication technology (ICT) products, they may want to require a specific energy performance or product, or require a full ICT service that reaches a specific level of energy efficiency. Performance standards have been developed to help public procurers (and buyers in general) to assess the energy performance of products (e.g. Energystar) (Turley et al, 2014).

**Box 7: Product-service systems as a result of performance-based procurement**

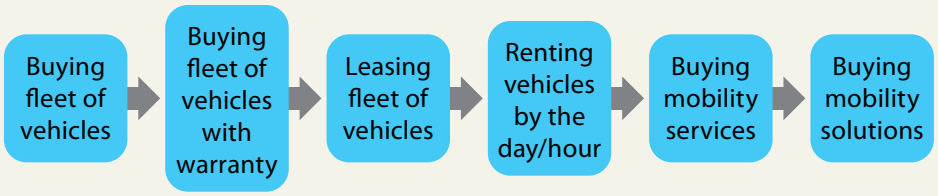
Performance-based procurement will often manifest itself in a 'product-service system' (PSS).

> 'Product-Service Systems are service-oriented business models that replace selling products with selling services – or with selling a mix of products and services. These systems focus on fulfilling customers' needs (e.g. "I need a clean home") rather than on product purchases (e.g. "I need cleaning products to clean my home"). They essentially shift the perspective from product ownership towards product utility and, consequently, towards a product's impacts throughout its life-cycle, or from outputs to outcomes. This shift enables cost reductions and efficiency gains, and can be used to further environmental objectives (e.g. energy and resource efficiency)' (UNEP, 2015).

Performance-based procurement will allow a better alignment of incentives between the public procurers and the suppliers because the suppliers are made responsible for the performance of a product or service. Allocating the risks properly will ensure that the best-performing product, service or integrated solution available is being provided. This discussion of PSS business models is important as it will allow both the public and the private sector to better negotiate a risk-sharing model that is appropriate for the specific service delivery.

A product-service system as a result of performance-based procurement can vary, but moves along a spectrum towards less ownership of a product, and with more focus on utility and buying an integrated service, as illustrated in Figure 5.

**Figure 5: Example of product-service combinations to fulfil mobility needs**




Source: UNEP, 2015

Product-service systems essentially transform the purchase of goods into services as an attempt to reduce the total cost of ownership and hence seek to buy a function/ outcome rather than own goods.

# PART III:

# How is performance-based procurement implemented?

Implementing performance-based procurement for sustainable development is ultimately about giving policy-makers and public procurers the confidence to change and act in a manner that helps governments deliver on its development priorities.

This means that there is a need for a legal framework that provides public procurers with procedural certainty for their procurement, and that allows them to do procurement differently in a legal manner. It also means there is need for information on the business case for performance-based procurement and data on the long-term costs and benefits of performance-based procurement. Thirdly, it means there is a need for cooperation with financial officers in municipalities and at provincial level on how performance-based procurement affects accounting systems or how current accounting systems potentially hinder a shift to performance-based procurement. Finally, it means there is a need for capacity building of those involved in supply-chain management on how to design performance-based tenders that demand the best-available technologies in the market, how to evaluate them, and how to monitor the performance after implementation. We will address each of these points in the sections below and will provide examples from case studies that we investigated in detail.

## The legal framework

### *Does the legal framework support a shift towards performance-based procurement and sustainable public procurement?*

A study undertaken by the International Institute for Sustainable Development (IISD), *Implementing Sustainable Public Procurement in South Africa: Where to start*, indicated that South Africa's legislative and regulatory environment supports the implementation of sustainable public procurement (Perera & Turley, 2014). Furthermore, the Preferential Procurement Policy Framework Act (2000) and Broad-Based Black Economic Empowerment (BBBEE) Codes of Good Practice (2014) have already set a precedent for using government's procurement decisions to strategically impact society. Sustainable procurement is an umbrella term that includes initiatives

like BBBEE, along with other policy priorities such as localisation, greening and ethical labour practices.

**Table 3: Relevant procurement laws and policies in South Africa and the Western Cape**

| Legislation | Stipulations | |
|---|---|---|
| Constitution of the Republic of South Africa, 1996 | Section 217(1) states that procurement systems must be: fair; equitable; transparent; competitive; and cost effective. | Section 217(2) states that procurement may provide for: categories of preference; and protection or advancement of persons or categories of persons disadvantaged by unfair discrimination. |
| Public Finance Management Act (1999) | Efficiency of economic allocations of paramount importance.<br>Guards against corruption. | |
| Local Government: Municipal Finance Management Act (2003) | Each municipality to have and implement its own Supply Chain Management policy. | Bids may be assessed on 'value for money' – open to interpretation. |
| Preferential Procurement Policy Framework Act (2000) & BBBEE Code (2003, 2014) | | Procurement decisions are influenced by BBBEE certificate (no discretion to emphasise a particular aspect of transformation). |
| Local Procurement Accord (2011) | | Up to 75% localisation of public/private procurement |



The legal framework in South Africa does not include specific references to sustainable procurement or performance-based procurement, but there are various provisions across the different instruments that encourage its use and allow for its implementation.

First, it is enshrined in all legal instruments that procurement systems must be **'fair, equitable, transparent, competitive and cost-effective'** (IISD, 2014). These principles are not only in line with sustainable public procurement, but are a prerequisite for sustainable and performance-based public procurement.

Secondly, the **Public Finance Management Act (PFMA) (1999) and the Local Government: Municipal Finance Management Act (MFMA) (2003)** delegate the procurement authority to the provincial and municipal levels and require that public procurement follows a procedure – set up by the respective level of government – that covers open and transparent processes for issuing, evaluating and monitoring tenders (MFMA, section 112). Both Acts empower the municipalities to design their own supply-chain management policies and procedures. It is in the design of these policies that municipalities can choose to place value for money – and no exclusive focus on price – at the heart of their public procurement and supply-chain management. The Western Cape did so in its **2012 Western Cape Provincial Treasury Instructions**.

The **Treasury Instructions (2012)** reiterate and elaborate upon the principles of fairness, equity, transparency, competitiveness and cost effectiveness under Part 3.2: Core Principles for an Appropriate Supply Chain Management System (Western Cape Provincial Treasury Instructions, Chapter 16A, Supply Chain Management: Goods and Services, 2012).

Under the 'equity' principle, for example, local procurement from disadvantaged groups and SMEs is emphasised. This indicates that public procurement can be used to steer and create markets for more innovative, sustainable solutions that tackle the real challenges of the Western Cape and South Africa. This is one example of the legal framework enabling, and actively supporting, sustainable public procurement and the use of public procurement in a more strategic way.

Another example of how the Treasury Instructions support performance-based procurement and sustainable public procurement is through the inclusion of the principle of open and effective competition (see Part 3.2.1 (d) Competitiveness). The principle mentions, among others:

> '(iii) encouragement of effective competition through procurement methods suited to market circumstances
>
> ...
>
> (vii) adequate and timely information is provided to suppliers to enable them to bid'.

Both clauses indicate that it is important for public agencies to interact with the market in an appropriate way. Sometimes a response to a specific public need will warrant a procurement method in which there are consultations with the market in the pre-procurement phase, or a competitive dialogue during the procurement. In other instances it will be important to research what the current market trends are in a particular sector in order for the public procurers to be better informed on what the market can deliver. An open and effective procurement system means that a minimum interaction with the market, in a transparent manner, is required. We will discuss this further in the section 'The public procurer's skill set' below. For now, it is sufficient to understand that the Treasury Instructions allow and encourage a degree of market engagement.

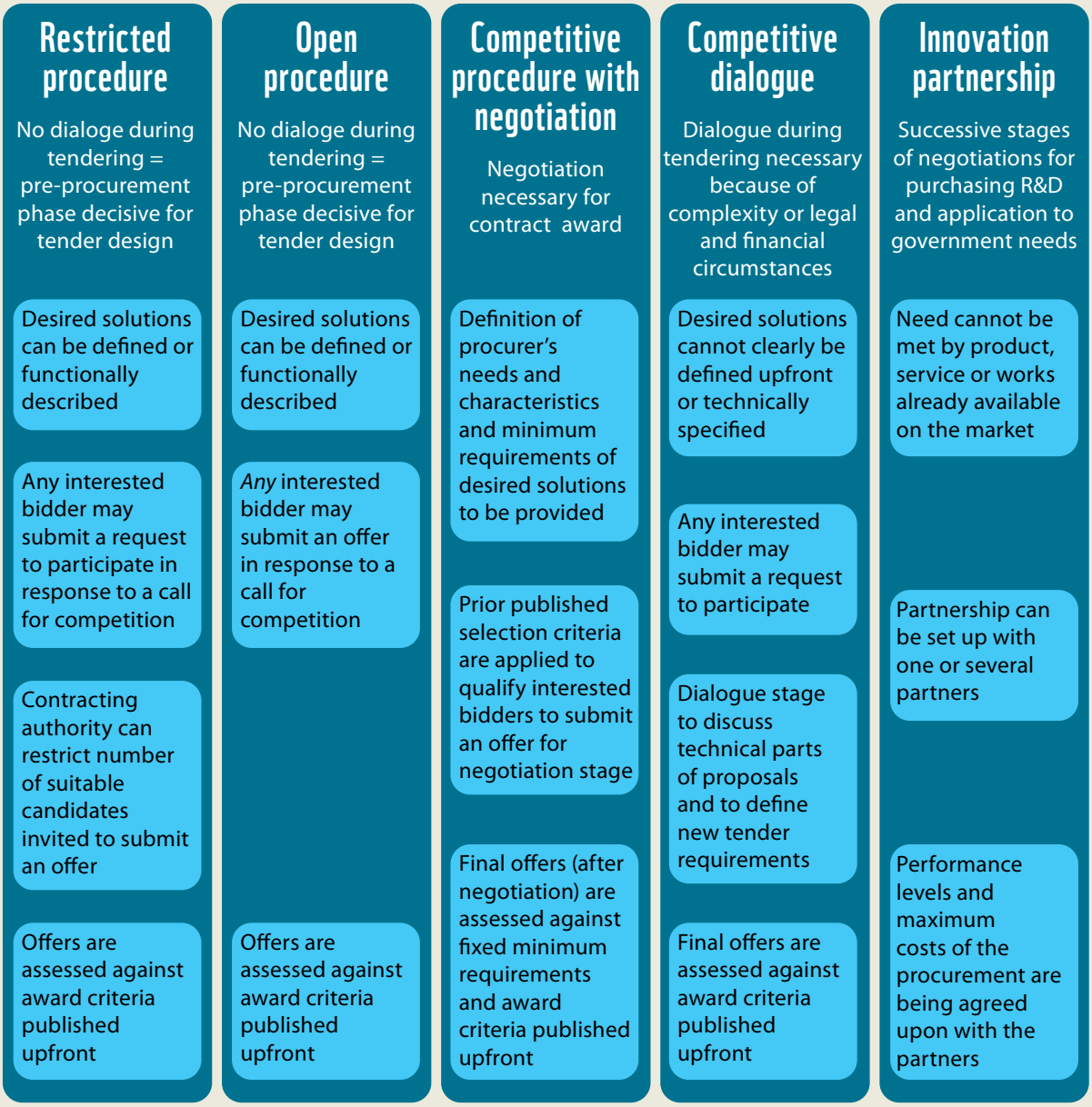
Part 5 of the Treasury Instructions (2012) outlines the thresholds for using a specific procurement method. It also defines the different procurement methods and procedures that public procurers can use in more detail under Part 5.2: from petty cash purchases (up to R2 000), informal quotations (up to R10 000) and formal invitations for quotations from the registered supplier database (up to R500 000) to competitive or limited bidding processes (for over R500 000). The variety of available processes guarantees public procurers the flexibility to choose a suitable procedure for their procurement, and does not limit in any respect the use of performance-based procurement. Other examples of similar processes from other jurisdictions are discussed in Box 8 to provide an understanding that competitive bidding processes are most suitable for demanding innovation for sustainable solutions, and ultimately sustainable public procurement.

Finally, there is a variety of case law in the public procurement arena. The risk of litigation often makes public procurers and policy makers cautious to try different procurement methods. As we will demonstrate below under 'The publiv procurer's

**Box 8: Public procurement procedures in the EU Public Procurement Directive to drive the shift towards performance-based and sustainable public procurement**

In the EU, the legal framework outlines the various public procurement procedures and clarifies under which circumstances they can be used. The EU Directive also encourages the use of public procurement to drive innovation and sustainable development. The procedures outlined below illustrate that a dialogue with the market in the pre-procurement phase or during the procurement process is allowed and encouraged in order to obtain the best value for money.

**Figure 6: Various procurement procedures derived from the EU Public Procurement Directive (2014)**




Source: IISD, 2017

... continued on next page

... continued from previous page

For example, the City of Eindhoven has used different procurement processes to allow better engagement with the market (more details in Part V, Case study 8). During a pre-procurement, exploratory phase the contracting authority of the city engaged in external communication activities to communicate about its ambitions to become an energy-neutral city by 2045 and the important role of municipal buildings to contribute to this objective. The exploration and open-market consultation phase were used to inform the market about the procurer´s intention to move beyond single building projects and instead to procure holistic products and long-term services to enhance sustainability and energy-efficiency for a cluster of municipal buildings. Subsequently, interested suppliers were asked to develop ideas and present these online.

skill set', for public procurers to move towards performance-based procurement and for performance-based procurement to be implemented and used to its full potential, public procurers need to have more information about the lifecycle cost of the solution they are purchasing, need to demand this information from suppliers through the tender specifications, and must be able to engage with the market. The important case law in public procurement litigation was discussed during a November 2016 workshop and informed us that in those cases where problems arose, this was about non-compliance with procedures, not about the final decision of a public procurement agency (Van Aarde, 2016).[7]

### Recommendation for policy makers

Provide clarification for supply-chain managers and public procurers on the legal framework. Which actions are they allowed to take and which ones are likely to be subject to dispute? This will help to make public procurers less averse to trying new and different approaches to public procurement, which will result in better value for money for taxpayers and better service delivery for citizens.

## The business case

### *Is there a business case for performance-based procurement? Is this going to cost more?*

Another frequently asked question about performance-based procurement, or sustainable public procurement more broadly, is the cost of the procurement. It is in answering this question that the concepts of lifecycle thinking, lifecycle costing, whole-life value and total cost of ownership become important.

Public procurement decisions that are taken based on the price of acquisition of a good do not fully reflect the cost of that purchase and may therefore not be the best criterion for a public procurement decision. For example, the operational costs that are needed to make a product function (e.g. electricity for a lightbulb) will determine how much a product really costs the procuring entity. Additionally, there may be costs or benefits that are not reflected in an acquisition price but have an impact on the service delivery to citizens. Bringing in longer-term thinking, and

7 The cases discussed included, among others: *Allpay Consolidated Investment Holdings v CEO, South African Social Security Agency; Aurecon v City of Cape Town; Minister of Transport v Prodiba (Pty) Ltd*

moving towards strategic procurement inevitably means that governments have to rethink the way they define the real 'cost' of a good or service. At a minimum, now is the time to start embedding the lifecycle cost – from acquisition, operations and maintenance to disposal – into public procurement decisions. Governments can also go further and make comparisons by adding a monetisation of positive and negative externalities to the equation.

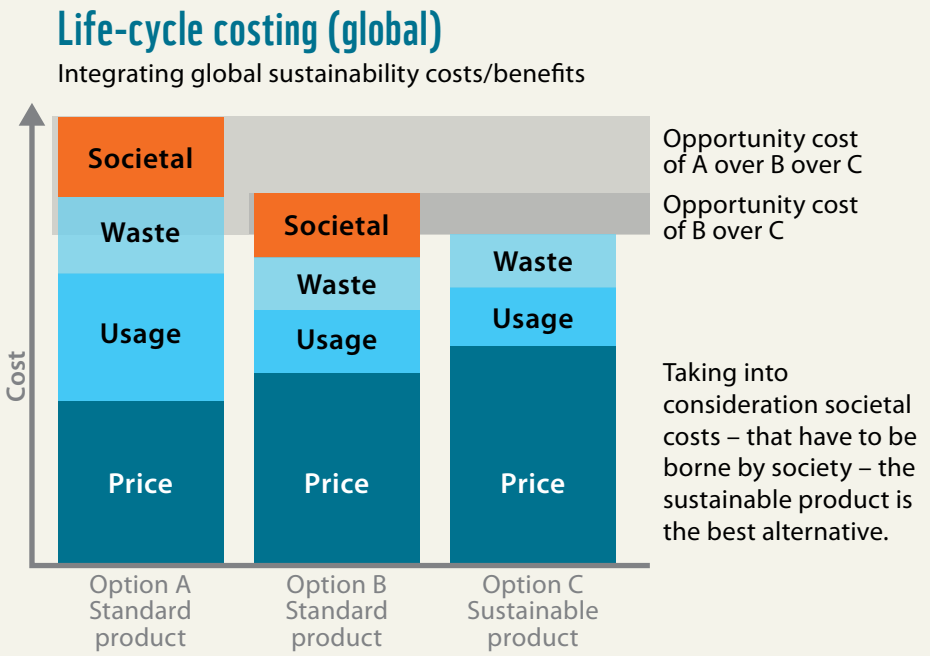
### Box 9: Total cost of ownership and lifecycle costs

The **total cost of ownership (TCO)** is sometimes used interchangeably with 'lifecycle cost'. However, it draws specific attention to the price of acquisition of assets, as well as the financial costs associated with ownership, including installing, using, operating, maintaining, upgrading and disposing of the assets, as long as they are carried by the same procuring agency. It looks at the total costs for the procuring institution, from the perspective of ownership of a good or service. This is not the same as the **lifecycle cost (LCC)** which can include a broader range of costs: purchasing costs, and all associated costs such as delivery, installation, commissioning, insurance; operating costs, including utility costs (energy, water, maintenance); end-of-life costs such as removal, recycling, refurbishing and decommissioning; and warranty time frames. The difference is explained in Figure 7.

Using lifecycle costing and TCO in public procurement decisions is a way to bring in lifecycle thinking, and a longer-term perspective to use taxpayers' money in a strategic way. TCO and LCC can be brought in when evaluating bids to ensure the best value for money.

Total cost of ownership and lifecycle cost challenge many public finance frameworks, including the South African Public Finances Management Act and the Local Government: Municipal Finance Management Act, which place emphasis on the price of acquisition rather than on operational expenditure. The TCO has implications for asset management decisions, and whether products should be bought or leased. This is because TCO accounts for asset depreciation, the economic value generated by an asset, and the number of years in which an asset will actually be used.

**Figure 7: Graphic representation of LCC and TCO**




Source: CSCP, 2016

One way to bring lifecycle thinking into public procurement decisions is indeed through awarding contracts based on LCC or TCO. Public procurers will not necessarily have all this information themselves, so it is important that, in the design of the tender documents, they ask for this information from the suppliers and explain that these costs will play a role in the decision to award the contract. This can be done in a legally compliant manner: public procurement is a matter of buying the best value for money, therefore costs beyond the purchase price are part of the equation.

### Recommendation for policy makers

- Steer innovation funds towards capacity building for supply-chain management on lifecycle costing, performance-based specifications, and monitoring of the performance of suppliers.
- Educate and build capacity of suppliers to respond to performance-based tenders.
- Build upon the supplier database information that is already available.
- Make full use of the e-procurement system and embed performance-based procurement within the roll-out of the e-procurement system.

### *The accounting framework*

The public accounting framework was studied as part of the project. The results of how the current framework in South Africa, and the Western Cape in particular, facilitates or hinders performance-based procurement is discussed in a separate publication.

**Box 10: The potential of innovation funds**

In many jurisdictions innovation funds are being deployed to leverage the potential of public procurement to deliver on strategic government objectives and steer public funding towards sustainable development. In the EU a part of its innovation fund, Horizon 2020,* is being deployed for public procurement of innovation and pre-commercial procurement. The fund covers a share of the potentially higher acquisition price of innovative goods, services and solutions, but the largest part covers the development of skills in public agencies to help change the mindset to more strategic and performance-based public procurement.

In South Africa, there are possibilities to deploy innovation funds for the same purpose. For example, under the Department of Science and Technology, several new initiatives will be rolled out in the coming years. Some of those could increase their impact by supporting strategic public procurement, performance-based procurement, or the procurement of innovation. The sovereign innovation fund would be a good candidate to support the needed capacity building at national, provincial and municipal level so that public procurement can be used in a different way. The Global CleanTech Innovation Programme (that foresees R3.8 million for SMEs) would be another candidate that could reserve a share to support the purchasing of innovative solutions from SMEs, and for the public procurement agencies to engage more often and more meaningfully with the South African market.

* ec.europa.eu/programmes/horizon2020/en



# The public procurer's skill set

## *The public procurer's skill set: how do we do this?*

The four most powerful interventions to encourage innovation and a focus on performance through public procurement are to include innovation requirements in public tenders, ensure early interactions with the market, set performance-based specifications and communicate the needs that bidders must respond to in advance (Uyarra et al, 2014).

### Market engagement

To optimise value for money across the lifecycle, public sector procurers need to be enabled to purchase the best available technologies. It is therefore essential that they are equipped and provided with open and transparent processes to engage with the market. Depending on the type of purchase, this can be done in various ways (see Figure 8).

The market engagement process is important to improve an agency's understanding of the latest developments and innovations, and to get feedback on the way agencies are describing their needs and the performance they are seeking. It is also important to improve relationships with the community of suppliers and to provide them, through transparent dialogue, with the information and therefore certainty that the public agencies are serious about their commitment to innovation, local development, job creation and sustainability.

Engagement provides an important opportunity for suppliers to raise questions about the tenders, and will ensure that public agencies do not design tender requirements that the market cannot respond to. Finally, market engagement also allows suppliers to plan and prepare themselves for the upcoming opportunities in contracting with government.

The engagement with the market can take place at a 'pre-procurement' stage, as well as in a regulated dialogue within the procurement process.

**Figure 8: Market engagement**

Source: Adapted from www.innovatiekoffer.nl

**Figure 9: Potential pre-procurement activities**

## Needs identification and innovation viability

**Identify needs/issues to be addressed**

**Involve technical experts and users/stakeholders when appropriate**

**Market research about available solutions**

**Insights for procurer:**

- Subject of tender: desired outcome
- Innovation needed
- Market availability

## Information and outreach activity

**Prior information notice:**

- Early announcement about innovation procurement intention to prepare the market

**Public relations:**

- Engage in public relations activities to raise market attention

**Achievements:**

- Market awareness and supplier interest triggered

## Open market consultation = Early supplier involvement

**Market education about:**

- Objectives
- Project scope
- Functional requirements
- Legal/formal requirements

**Gain market feedback about:**

- Available solutions and market readiness
- Familiarity with public procurement procedures

**Follow-up:**

- Objectives
- Project scope
- Functional requirements
- Legal/formal requirements

**Insights for procurer:**

- Market structure
- Informed choice of contract type (supply, service or works), contract length, lots
- Informed choice of procurement procedure
- Appropriate degree of detail for tender documents: technical specifications, functional requirements, KPIs, etc.

Source: IISD, 2017

It is crucial that any type of market engagement, be it during the pre-procurement phase or the procurement processes, is executed in a transparent and documented manner. This will demonstrate that public procurement processes are following the principles laid down in the legal framework.

**Box 11: Online market engagement in Copenhagen Municipality**

The municipality of Copenhagen undertook online market engagement for plumbing services. They published a range of questions online, which could be answered anonymously. The municipality encouraged industry bodies to send the questions to their members and also published the questions on their website. The online consultation proved to be a quick and effective communication channel for the municipality to obtain information about the market trends during the pre-procurement phase.

Source: SPP regions, 2017a

The engagement with suppliers during a tender procedure is more limited but can be very useful for certain public procurement projects. The EU has set different procurement procedures that can be used in circumstances where the public procurers do not have the information on the best available technologies, goods and services and need to be able to interact with the market during the procurement process in a fair, open and transparent manner. As long as there is equal access for all suppliers to participate in the engagement process, this is perfectly legal and indeed, will bring better value for money.

**Box 12: Open market consultations in Oslo for innovative building materials**

One of the important components of a public procurement process for construction with new building materials was a face-to-face market event with interested suppliers in Oslo, Norway. The event was well attended, mostly by material suppliers (including SMEs and start-ups) that had prototypes of building materials not yet available on the market. They saw the public procurement opportunity as a potential to scale their solutions.

See Part V, Case study 7 for full details.

### Box 13: Market engagement in Sala Municipality for energy-efficient lighting solutions

The Swedish municipality of Sala procured energy-efficient lighting solutions and identified communication and intensive dialogue with the market as major success factors in the public procurement process. The pre-procurement phase allowed the municipality to get information not only about the latest solutions that suppliers could provide (LED lighting) but also about a financing scheme (via Energy Performance Contracting). The municipality thus obtained the information about the market-readiness for public procurement of these innovative solutions. It helped them to design the tender requirements and focus on the performance of the energy-efficient products. Also, during the procurement phase, a transparent and open dialogue was held with multiple suppliers to identify components of the solution that would contribute to the desired performance. This improved information sharing and exchange between the public and private sectors, leading to better value for money.

See Part V, Case study 5 for full details.

**Table 4: Overview of different forms of market engagement**

| Pre-procurement | During tender | Post tender |
|---|---|---|
| ▪ Publish forward procurement plan (eg Annual Procurement Plan)<br>▪ Attend trade shows<br>▪ Attend meet-the-buyer event for any interested parties<br>▪ Issue a request for information<br>▪ Call a 'show-and-tell' to allow suppliers to explain their proposed solutions<br>▪ Meet with industry bodies<br>▪ Meet with a group of key suppliers or a range of suppliers individually<br>▪ Sound out the market<br>▪ Provide pre-tender briefing to suppliers who are interested in a contract opportunity | ▪ Brief suppliers who have submitted a response<br>▪ Brief short-listed suppliers<br>▪ Hold a question-and-answer session – or send a list of all questions and their answers to all suppliers | ▪ Let suppliers know who has been successful, including a contract award notice on GETS<br>▪ Debrief suppliers, and ask questions about how the process worked for them. |

Source: New Zealand Government, 2013

**Box 14: Refurbishment of municipal buildings in Eindhoven**

The tender for the refurbishment of municipal buildings in Eindhoven in the Netherlands is performance-based and focuses on three aspects: all bids have to realise a maximum sustainable refurbishment for the municipal buildings, embed a solid business case, and ensure sustainability and cooperation. Each of those are given a weight when awarding the contract. After a first dialogue phase with the market, the scope of the buildings to be refurbished was expanded to seven buildings (the market indicated that a larger scope would be better to scale innovative solutions and help make a better business case). An operation and maintenance component was added to the scope, in addition to the (re)construction and refurbishment. More importantly, the way the municipality gave flexibility to the market to design solutions was by giving a list of tasks that had to be included in the bid, rather than being prescriptive about the goods or technologies that would have to be used. The tender also clarified that the assessment of the bids would be made by a committee looking at the financial and sustainability components. Both the dialogue with the market as well as the listing of mandatory and optional tasks in a broad sense, allowed the market players to form consortia and provide integrated solutions to meet the municipality's needs. The tasks listed were the following:

**Mandatory:**

- Renovation of city tower
- Reconstruction or refurbishment of city hall
- Reconstruction or refurbishment of city office buildings / Van Abbe Museum
- Maintenance of all seven buildings
- Operation and maintenance of all buildings (energy management)
- Innovation management (innovation business plan on how to bring in future innovations and solutions)

**Optional:**

- Reconstruction or refurbishment of other buildings
- Delivery of energy, or energy and water
- Operation and maintenance of all buildings (cleaning, security, catering, other)
- Increase in 'quality of life' in the city centre
- Renting or leasing of the buildings

See Part V, Case study 8 for full details.

## Performance-based specifications: designing, awarding and monitoring

In Part II examples were given of how the focus on performance, rather than the description of a solution to a public need, is translated throughout the public procurement process. In this section we focus on how that is done through the design of the tender specification, awarding the contract and monitoring the performance.

Performance specifications can be set at different levels of what an entity is buying. It is crucial that these specifications are closely related to the need the entity is responding to, and that they include references to sustainability. For example, when a government seeks to deploy sustainable infrastructure, it can ask for building materials to have a low-carbon performance, or that the entire infrastructure project should have a low-carbon performance. Setting the performance assessment at project level leaves more room for innovation. Another example is provided in Box 15 – a tender for energy-efficient interventions for the City of Cape Town.

Performance-based specifications will require a larger monitoring and assessment effort from the public procurement agency. That is basically what performance-based procurement does: it shifts the focus of the public agencies to monitoring performance, more than designing technical tender specifications.

**Box 15: City of Cape Town's tender for detailed audits and lighting energy-efficiency interventions at council facilities**

In 2015, the City of Cape Town used performance-based specifications when it put out a tender for full energy-efficiency interventions, but chose to specify that LED technology had to be used. The metering systems that were already present in the buildings to measure the energy savings on a monthly basis also had to be retained.

A full description of the tender specifications and evaluation criteria of this tender can be found in Part V, Case study 3.

Not all performance-based specifications will lead to better value for money for taxpayers, unless the performance focuses explicitly on sustainability. Formulating performance-based specifications close to the public need (e.g. connectivity, mobility, low-carbon construction projects) will give suppliers the option to offer a product, a service, or a combination of both in their bids. What matters is that they make an offer towards the specific performance that is being asked.

Awarding contracts based on the performance-based specifications can be done through point systems that include more aspects than (acquisition) price alone and reward those suppliers that present the business case of a sustainable solution.

Another way in which performance-based specifications can be promoted is through developing dedicated tools to measure and monetise sustainability performances. Lifecycle costing is one way in which this can be done (see Box 9). Public procurers are often reluctant to do complicated calculations of sustainability aspects. Indeed, this information is not always to hand and public procurers may

**Box 16: Energy-efficiency procurement by the City of Cape Town**

Energy efficiency is a positive example of performance-based procurement through performance specifications that focus on the energy-efficiency component. Several years ago, the City of Cape Town already identified the opportunity to utilise energy performance contracting (EPC) for retrofitting old municipal buildings and upgrading the electronic equipment. The improved energy efficiency and lower energy consumption of these buildings would contribute to the City's Energy and Climate Action Plan. The first tender for four municipal buildings was issued in 2009, and another 14 buildings followed in 2011 with the scope to upgrade lighting, occupancy sensors and smart meters. Since the City of Cape Town had positive experiences with those two tenders, they launched another EPC tender in 2013 for retrofitting 12 buildings, funded through the Energy Efficiency Demand Side Management Programme (EEDSM) of the National Treasury's Division of Revenue Act. The objectives of the tender were to assess the energy consumption patterns in the 12 buildings and implement technical interventions as well as educational measures to change the behaviour of tenants to reduce energy consumption in these buildings.

See Part V, Case Study 3 for full details.

lack the time and resources to assess these aspects. That is why it is so important to design specifications based on performance. The information public procurers need on the sustainability aspects is available, but in the hand of suppliers. Hence, they need to *ask* in the tender documentation for sustainability performance information. Performance-based procurement will ask the information from the market players, so that it can be assessed and monitored by the procurement agencies.

Lastly, the monitoring of the performance of the solution is crucial to ensure value for money. One challenge is that public procurers do not receive sufficient information from the real end-users about the performance of the goods, service or solution they procured. Various mechanisms can be put in place to ensure that feedback is collected from the end-users and flows back to the procurers who are overseeing contract compliance. Financial penalties can be used to hold suppliers accountable for failure to deliver the promised performance.

### Recommendation for policy makers

- Provide platforms for the sharing of best practice and regular engagement between public procurers, but also allow industry-specific expertise to be shared.
- Encourage partnerships with industry bodies, chambers of commerce, SME platforms, innovation hubs, etc.
- Build interdisciplinary skill sets in public procurement agencies; engage economists, engineers and sustainability experts in public procurement teams and projects.
- Support partnerships with universities on performance-based procurement and make performance-based procurement part of the degree courses of future policy makers.

## Starting with performance-based procurement

### *Should all procurement now become performance-based?*

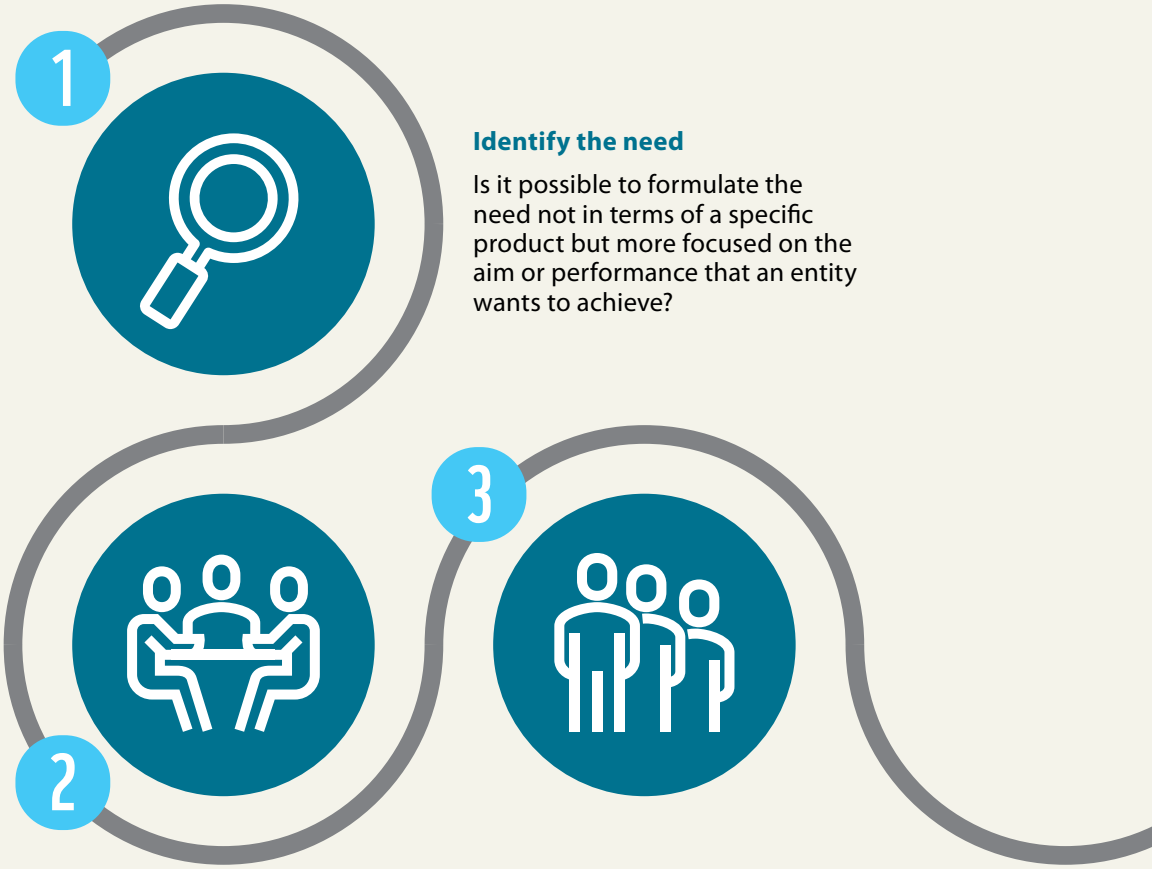
For large procurements and strategically important areas of impact, consider a different approach to the procurement process: more strategic, less technical, more focused on the performance so that the best solutions can be purchased from the market. To determine in which areas to scale efforts towards performance-based procurement, public procurers and heads of public procurement agencies will find the following considerations helpful:

- Which products and services have the largest environmental and social footprint? If early efforts on sustainable public procurement can be associated with tangible benefits in terms of better air quality, reduced waste, the creation of greener jobs and indeed lowered operational expenditure, the credibility of the SPP effort will be greatly enhanced.
- What is the share that public procurement represents in the overall demand for a given product or service? The larger this share, the more sustainable public procurement will serve as an incentive for green industrial

competiveness and the greater the influence it can have on the behaviour of suppliers in the market.

- What is the purchasing cost of sustainable goods and services? Are these goods and services easier and cheaper to use, maintain and dispose of? Do they increase productivity?
- What products and services can be sourced from and are manufactured in the domestic economy? Can sustainable public procurement trigger the adoption of cleaner production, resource efficiency and improved health and safety? Can public demand help augment green industrial and knowledge economy skills across supply chains? Can sustainable public procurement help increase domestic green industrial competitiveness?
- What are the priority sectors (or target sectors) for foreign direct investment (FDI)? Do these sectors align with the goods, services and infrastructure that the public sector seeks to procure? If they do, sustainable public procurement can serve as a complementary strategy to increase FDI and industrial development.
- What are the pressing environmental and social issues facing the domestic economy? Can sustainable public procurement help address these issues? For example, in a jurisdiction where electronic waste is a problem, public tenders can be designed to include requirements on producer responsibility.
- To what extent can the procurement of discrete products be replaced by the procurement of services? Can this decrease both the purchasing and the operating costs for the public purse? For example, in China, public entities have shifted from procuring vehicles to leasing vehicles and, more recently, leasing fuel-efficient vehicles to improve urban air quality. Similarly in Germany, the Netherlands and the United Kingdom, public entities seek to purchase integrated building management and facility management services rather than procuring light bulbs, heating systems and air conditioners as discrete products.

# PART IV: Summary




### Identify the need

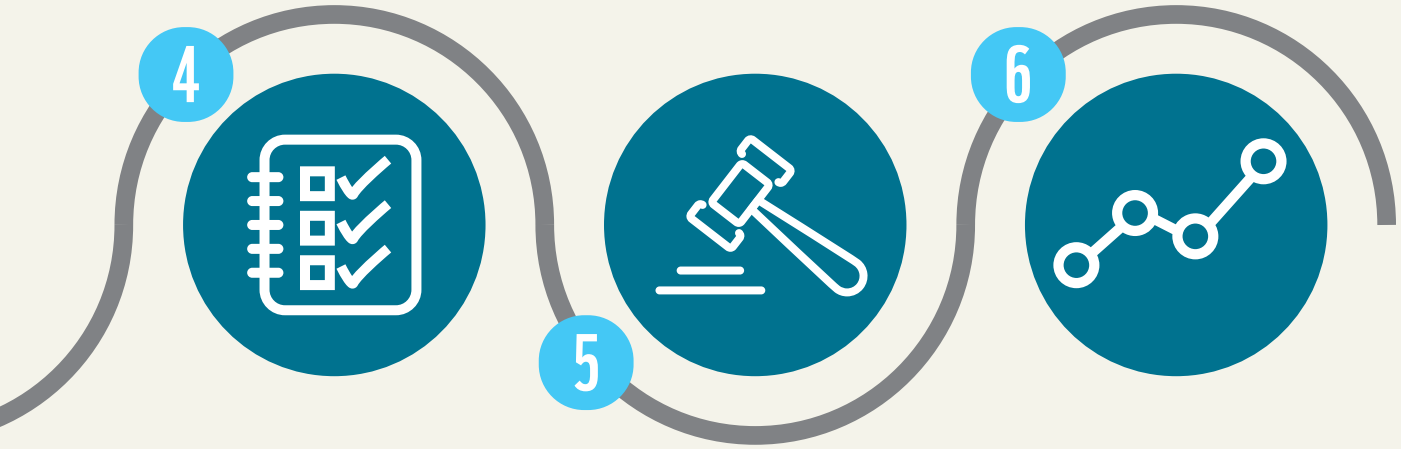
Is it possible to formulate the need not in terms of a specific product but more focused on the aim or performance that an entity wants to achieve?

### Internal communication and buy-in

- Create an interdisciplinary team (lawyers, economists, sustainability experts and accountants) – break down the silos
- Ensure an understanding of why performance-based procurement is important and why there is a business case – refer to strategic importance, the lever for innovation, job creation, and other co-benefits
- Allocate resources for the procurement and for the process – tap into innovation fund potential

### External communication and market engagement

- Identify the appropriate communication channels to inform the market about the longer-term goals, the performance, the need for which you are seeking a solution
- Ensure at all times a transparent, fair and open communication process with the market
- Givethe market sufficient leadtime to develop ideas
- Collect feedback before designing the tenders to ensure they match what the market can deliver and at the same time incentivise sufficient innovation




### Tender scope and specifications

- Use a performance-based specification or a list of objectives that you want to achieve with the procurement
- Look for best practices and for the right level of setting performance
- Establish how performance will be measured and monitored

### Evaluation of tenders and contract awarding

- Value for money should be interpreted as the best value for the taxpayer across the lifecycle of the asset
- Use lifecycle costing or total cost of ownership where appropriate
- Use two-stage award criteria or a points-based system

### Monitoring of performance

- Hold suppliers accountable to the performance level
- Introduce financial penalties into the contract clauses
- Collect feedback from the end-users

# PART V: Case studies

# Case study 1:
# Alternative urban water management in Langrug

## Context: Making a case for green infrastructure and incremental informal settlement upgrading

The Western Cape Government is committed to driving resource efficiency, the Green Economy, and sustainable human settlements through provincial policy, strategy and investment. Supporting all three of these aims, the Genius of SPACE (Systems for People's Access to a Clean Environment) is a project for the development of a trial nature-inspired system to separate grey water and solid waste from stormwater in informal settlements. Genius of SPACE (hereafter, the project) demonstrates the feasibility of 'off-grid' green infrastructure to decrease contaminated run-off from these types of neighbourhoods into the surrounding ecosystems. It also aims to provide improved, more dignified conditions for residents of Langrug, an informal settlement near Franschhoek in the Western Cape. It is part of Stellenbosch Municipality.

The intention is to use government procurement to develop a replicable model, de-risking this participatory, green infrastructure development so that companies can deliver this service in other informal settlements. The project also aims to influence existing formal infrastructure upgrading. It is being led by the Department of Environmental Affairs and Development Planning (DEA&DP), in partnership with the Department of Economic Development and Tourism (DEDAT), and the Department of Human Settlements (DHS).

## Needs identification and definition of innovation

Ineffectively managed waste-flows from informal settlements present risks to ecosystems and human health and safety. These settlements are typically cut off from existing bulk infrastructure and services to manage wastewater in particular. Before the project, the Langrug community was using inadequate communal ablution blocks connected to the sewage system, with no formal provision was made for the disposal of grey water. The problem of lack of personal safety for the toilet block has meant that residents often dispose of raw sewage right outside their dwellings, in informal channels. The project aims to create a socially, environmentally and economically sustainable solution to the issue of managing waste-flows in informal settlements. It is aligned to broader policy and strategic efforts to upgrade living conditions in informal settlements administered by the DHS.

**Figure 10: Areas in Langrug without and with Genius of SPACE**

The innovative aspects of this project pertain to the choice of nature-based infrastructure, as well as the method of working in a participatory and incremental way with the residents of Langrug. This required long-term development of the project in partnership with an appropriately capacitated, multidisciplinary service provider. Using biomimicry (design inspired by natural systems), this project models and tests systems such as tree gardens and micro-wetlands (for grey-water treatment) and 'eco-machines' (for stormwater treatment), and community waste management.

## Procurement approach and procedural activities

### Pre-procurement activities

The procurement for Genius of SPACE built on collaboration between the DEA&DP and DEDAT, as well as an existing relationship with the service provider, BiomimicrySA (trading as Greenhouse Systems Development). The project combines the DEA&DP Langrug SPACE project, and the DEDAT Genius of Place project which also involves the DHS (WCG, 2014). Activities kicked off in April 2013. The project has been carried out over four phases, the last of which commenced in

September 2015 with the construction of physical infrastructure starting in January 2016 (BiomimicrySA, 2016).

The Langrug SPACE project investigated the potential for bioremediation to contribute to the aims of the Berg River Improvement Plan (BRIP). In April 2013, BiomimicrySA facilitated a meeting where participants identified three major impacts on the Berg River's quality, based on work up to that point:

- Grey and black wastewater, and solid waste from informal settlements adjacent to the river.
- Impacts of inadequately functioning wastewater treatment plants.
- Loss of indigenous vegetation, and consequently loss of natural water filtration, along the Berg River.

The Genius of Place project applied biomimicry to identify local systems and organisms that could be incorporated into solutions to these challenges. The project was managed under the transversal Green Economy Programme's 110% Green project, in partnership with the BRIP task team. The original intention was to develop a green wastewater solution that could be entirely privately funded and operated.

Upon completion of the Genius of Place work, the need was apparent for more government support to de-risk the investment for private non-profit or for-profit companies. The novelty of the technology, as well as the project's approach to dealing with infrastructure, service delivery and environmental protection, meant that there was significant uncertainty about the feasibility of the solution and the associated risks. Genius of SPACE responded by developing a replicable model process and service that works in terms of technical efficacy, in addition to functioning as an appropriate and legitimate solution in a complex social and political context. This project makes the case for government advocacy for green and incremental infrastructure, aims to build social acceptance for alternative infrastructure, and constructs a business model that can be delivered by others.

### Interdepartmental budgeting

Because this project meets the objectives of three different WCG departments (DEA&DP, DEDAT and DHS), there have been gains in time and cost efficiency in that all three departments provided finance for this project. Heads of Department from DEA&DP and DEDAT, respectively, formalised their agreement in an exchange of official letters, which were included in the procurement documentation. DEA&DP and DHS entered into a Memorandum of Understanding to manage the funding received from DHS for project implementation. The overall project budget was motivated with reference to the various strategic aims under BRIP, aspects of the Green Economy Strategy Framework, and the DEA&DP Climate Change Response Framework. Part of the intention of the project is to investigate how this green approach, together with community co-design, can be incorporated into mainstream DHS budgeting in the future.

## Definition of functional requirements and tasks indicated in the request for proposal

The terms of reference (ToR) for the project required the following of service providers:

> 'To develop and implement a treatment-based system derived from bioremediation technologies in the prioritised area of the Langrug informal settlement to improve water quality and ecosystem functioning, with community benefits linked to job creation (through for example the Expanded Public Works Programme – EPWP – and the creation of business opportunities).'

The project manager stated that this did not require a particularly different procurement procedure, but rather, carefully designed functionality criteria. The ToR emphasised innovation, resource efficiency/greening, and detailed technical specifications and also underscored the requirements for a diversity of skills in the project team to ensure a multi-disciplinary approach.

The ToR further stated:

> 'A project team with relevant qualifications and appropriate experience should consist of the following professions: Civil Engineer (registered professional – ECSA/SAICE); Environmental Scientist (registered professional – SACNASP); Urban Design Planner; Biomimicry Specialist (accredited certification required); Business and Social Entrepreneurship Development Specialist.'

This provision was included to disqualify large engineering firms that typically respond to requests for proposals (RFPs) for infrastructure development unless they partnered with smaller, more specialised firms that could provide for the other qualifications besides the engineering skills.

These measures were seen as necessary to avoid a 'business as usual' approach. Because the project applies a community development approach to infrastructure provision, the employment and empowerment of the local community was also made explicit in the ToR. Affordability of all prototypes developed was also required. The functionality criteria also required evidence of experience that included: 'Innovative and non-conventional type environmental projects'; 'Community and public engagement workshops and training'; 'Construction projects in informal settlements involving management of stormwater/sanitation'; 'Incorporating biomimicry principles and ecological design into construction projects'.

## Motivating for single-source procurement

The project team elected to follow a single-source procurement procedure, in line with section 18(2)*(a)* of the Public Finance Management Act (PFMA), paragraph 5.2.1.5*(a)*(v) of the Western Cape Provincial Treasury Instructions (WCPTI), and Practice Note SCM 3 of 2003. This procurement process allowed for the continuation of work that had already been completed by a particular service provider. This motivation for single-source procurement was possible because services for the DEA&DP Langrug SPACE project, on which the new project was based, was procured in a conventional multiple-source, competitive bidding process. When the BRIP task force found that this design work was worth pursuing into an implementation phase, it was considered too risky to transfer the implementation to a new group of consultants who were not deeply familiar with the designs. Alternatives to

single-source bidding were considered, such as requiring new service providers to consult with the previous team. These alternatives were assessed and found to be

**The procurement strategy states:**

> 'The implementation of the designs for the Genius of SPACE represents a natural continuation of work by the design team, administered by Greenhouse Business Development for BiomimicrySA, as the natural progression is the transition from design to implementation. Continuity in the technical approach (understanding of the design), the experience required (working with the community of Langrug) and continued professional liability of the same project team are seen as critical to the successful outcome of this project ... The Genius of SPACE project is the first time that a project of this nature is delivered in South Africa. The ideals of innovation and investigating new approaches often require the use of a specialised skill set to deliver on such objectives.'

impractical.

In support of the ToR, the project manager had to provide evidence of buy-in from the municipality and the local school governing body on whose land the system is built, as supporting information. The school's grounds were used because the land is held by another WCG Department (the Department of Education), thus reducing the administrative burden associated with the procurement or leasing of property.

## Award and terms of the contract

### Performance and impact measurement

The measurement and monitoring of outcomes are critical to the aims of the project. The performance of the project's system will be monitored through a link with Stellenbosch University and the Water Research Commission. Postgraduate students at the university are funded by the Department of Science and Technology and the Water Research Commission to undertake specific, detailed research, and to provide ongoing general monitoring feedback on the successes and challenges arising. The plan is also to see whether this intervention is correlated with improved water quality over time.

The suppliers are required to undertake end-user development through engagement and training of the community so that they can be involved in the operation of the system. Training for municipal officials is also mandatory.

### Cost considerations

Current estimates put the cost of the project's green alternative in the same ballpark as conventional grey-water management infrastructure. The system has been proven to be a cost-competitive infrastructure option. The total budget for this project is R7, 997 million for the pilot (including all professional costs, construction materials and labour requirements) over three financial years (the longest legal contract).

Costs for the system amount to R15 000 per household, excluding design, and R19 000 including design. It is anticipated that costs will decrease during the roll-out phase, during which period infrastructure will be extended to the entire settlement. Further cost efficiencies are expected as the model is refined and replicated in other areas.

### Implications for other procurement

Preliminary cost assessments suggest that this green infrastructure can be supplied at a comparable if not cheaper cost than extending conventional infrastructure to informal settlements. The project team would also like to put a value on the additional benefits to residents, including greater agency and engagement, environmental quality, employment opportunities and the (still untested) micro-enterprise opportunities related to upcycling by-products from the waste collection and water treatment.

The project's perceived successes have resulted in two additional projects to use green infrastructure in informal settlements. It is still unclear whether and how private investment could be drawn into these projects.

## Lessons learned

### Barriers to innovation

- Treasury requires that projects span no more than three years.
- The value of community participation, buy-in and empowerment is difficult to cost and to reflect as returns on investment in the design phase of work.
- Municipal governments are failing to meet the service delivery expectations of residents of informal settlements.
- Misinformation on resource-efficient and green infrastructure leads to misperceptions about the quality (for communities) and cost (for the government), causing resistance to these alternatives.
- Community behaviour change is required for optimal functioning of the system, which cannot be achieved without sustained community participation.
- There have been intentions to integrate the community work of the project with the Expanded Public Works Programme (EPWP). However, this has been frustrated by the limited capacity of WCG staff to undertake this integration. Municipally managed EPWP is being considered as a bridging tool for aspects of community management of the project system until the micro-enterprises take off.

### Success factors

- There was successful interdepartmental cooperation across WCG departments, as well as between different spheres of government (national, provincial and municipal). While this began as a hurdle, collaboration and communication channels improved over time. A formal Memorandum of Cooperation is now in place with Stellenbosch Municipality. Implementation of projects still depends on the good informal relationships between municipal and WCG officials who have overlapping performance areas.
- The project administration and procurement was championed by senior WCG officials and executives.
- Adequate time was invested to ensure a social licence to work, and the project team worked with credible community organisations and community-based structures.

#### Benefits

- Innovation of pre-procurement activities
- Systemic thinking to solve service delivery challenges
- Community participation in all project phases has led to more successful ownership and maintenance than for other municipal infrastructure in the area.

#### Challenges

- It is still unclear whether the market is prepared to deliver this kind of project, and what the process of essentially privatising this municipally managed service will be.
- Although the solution does reduce odour and health hazards and improves settlement conditions, a large eco-machine is required to significantly improve water quality.

# Case study 2: Waste management solution in Drakenstein

## Context: Sustainable waste management infrastructure

Finding a financially viable, sustainable solution for municipal waste management is a significant challenge for local governments in South Africa, and the Drakenstein Municipality in the Western Cape is no exception. The local government serves the towns of Hermon, Gouda, Paarl, Saron and Wellington.

The landfill site at Wellington services the whole municipal area. Airspace availability at this and other landfill sites is a growing concern. As a response, the Western Cape Government, as well as several municipalities in the province, have been investing in unlocking opportunities in the 'waste economy' (WCG DEA&DP, 2014). As landfills reach their capacity, local governments have an opportunity to implement waste diversion solutions that extend the lifespan of existing landfills while generating local economic development opportunities related to the processing of waste to extract materials and energy. In 2008, Drakenstein Municipality sought to lead the way in this new approach to local waste management.

## Needs identification and definition of innovation

In initial assessments, it was anticipated that the Drakenstein landfill would reach capacity by 2012 (WCG, 2015). Although it is still in operation in 2017 thanks to upgrading investments, the rate of landfilling and its environmental impacts remain enduring points of concern for local stakeholders.

Currently, waste management (Solid Waste Services) is undertaken by municipal officials (rather than being outsourced). However, in 2008 the municipality recognised that it did not have the internal capacity, technical expertise or capital to adequately address its waste problem. It also lacked the financial resources to significantly improve the functionality of the existing landfill. For this reason, external service provision was chosen to finance, design, construct, manage, own, operate and maintain a Waste to Energy (WTE) plant, and to operate the municipality's waste treatment and disposal services.

Although WTE is widely used in Europe, the United Kingdom and the USA, this technology is fairly new to South African municipalities. Currently, 90% of waste

collected by municipalities in South Africa is landfilled, while, only 10% is recycled (GreenCape, 2016). Drakenstein Municipality has initiated the Waste Recovery, Beneficiation and Energy Project (hereafter, the project), which will include:

- Wellington Material Recovery Facility (MRF) – handling clean or dirty waste
- Municipal Solid Waste (MSW) Pressing Plant (VMpress)
- Anaerobic Digestion (AD) Plant
- Direct Combustion (DC) Plant.

This combination of infrastructure will allow recyclable waste to be separated from non-recyclable waste, for different processes of value extraction (Drakenstein Municipality, 2014). The facility will process up to 500 t of solid waste daily and will have an energy generation capacity of approximately 12.6 MW once fully operational (USTDA, 2016). Energy will be generated at the AD and DC plants.

## Procurement approach and procedural activities

### Pre-procurement analysis: motivating for a PPP

The WTE project has to be structured as a public-private partnership (PPP) in order to allow for an adequate contracting period between the municipality and the service provider. As with many sustainable infrastructure investments (e.g. renewable energy generation and ecosystems management), the period over which returns are realised exceeds three years (Technical Assistance Unit and Western Cape Government, 2014).

The municipality had to consult the Provincial and National Treasury before finalising local council approval. It falls to National Treasury's PPP Unit to determine whether the PPP in question is in fact an effecting service delivery mechanism and delivers value for money. Because waste management is defined as a municipal service,[8] the establishment of a PPP requires compliance with the Municipal Finance Management Act (MFMA), Municipal Public-Private Partnership Regulations (2005), and Chapter 8 (specifically sections 76–78) of the Municipal Systems Act (Technical Assistance Unit and Western Cape Government, 2014). This entailed the following processes:

- A review of current services as administered by the municipality (this includes a cost benefit analysis, a municipal capacity assessment, assessment of the impact on administration, a community impact assessment, and a review of trends relevant to the service area)
- A process to consider external service provision, leading to formal council approval
- A feasibility study
- A competitive bidding process.

8 A different process applies if the activity under the partnership falls within a municipality's legal competence, but does not constitute a municipal service. An example would be partnering with a service provider to have solar water heaters installed for low-income households.

## Definition of functional requirements and tasks indicated in the request for proposals

The procurement process began in 2008 with a request for proposals for 'The Development of a Waste to Energy Project at Drakenstein Municipality' for 'a medium to long term Public Private Partnership (PPP) with a preferred bidder in the planning, designing, financing, construction and operation of a Waste to Energy Project' (Jan Palm Consulting Engineers, 2008). The detail of the project conceptualisation and design was left to the service provider to specify. The preferred bidder was chosen on the basis of having the strongest technical concept.

## Process deviation

The municipality reports that legislation technically requires that the idea is put through viability testing before a preferred bidder is selected. This would require that a financial and legal viability assessment of the project is carried out before a preferred bidder is selected to carry out the building, finance, maintenance and/or operation of the project. However, a deviation from this process was allowed. Instead, an Memorandum of Agreement was established between the municipality and the service provider in 2012 in order to do all the preparation work to take the WTE concept through a process of development, to the conclusion of the Social and Environmental Impact Assessment (SEIA). A financial viability assessment has also been successfully concluded. If the project is found to be financially flawed or illegal, the partnership will be dissolved and both parties will carry their own costs. This process is specified in Table 5.

### Table 5: Key milestones in the PPP process

| Date | Key milestones in the PPP process |
|---|---|
| 2008 | RFP issued |
| 2011 | Bid Adjudication Committee established |
| 2011 | Treasury approval of PPP |
| 2012 | Memorandum of Agreement (MOA) in place |
| 2012 | Drakenstein Waste to Energy Section 78-1 Assessment Report Draft issued |
| 2013 | Treasury Views and Recommendations (TVR1) letter issued |
| 2013 | Feasibility Study Report issued |
| 2013 | Final Consolidated Report on Comments received |
| 2014 | Council decision in terms of section 78(4) (23 April 2014) |
| 2014 | Interwaste appointed (Appointment letter issued) |
| 2014 | Draft Scoping Report |
| 2015 | Final Scoping Report released |
| 2016 | SEIA and Public Participation Completed |

Source: Drakenstein Municipality, 2015

The service provider is a local waste company, Interwaste (Pty) Ltd. For the purposes of the implementation of the PPP, Interwaste has established a Special Purpose Vehicle (SPV) that has drawn together all the necessary knowledge, skills and capacity to implement required activities under a joint venture. The SPV structure makes it easier for the municipality, as it only has to manage a single contract, rather than dealing with several individual suppliers. MBHE African Power (Pty) Ltd, a renewable energy project developer, has been awarded a grant for this work by the US Trade and Development Agency (USTDA) (USTDA, 2016). USTDA has taken an interest because the project is aligned to its aim to enable 30 000 MW of energy capacity in sub-Saharan Africa.

The PPP agreement with Interwaste is an extensive document, with several detailed schedules, including agreements for the operation and maintenance of the existing municipal waste treatment and disposal services; a project site land lease; the building, ownership, operation and transfer of project components; and an energy power purchase agreement. The agreement between the municipality and the service provider depends on the successful obtainment of the following approvals:

**Table 6: Approvals to be obtained**

| Requirement | Authority |
|---|---|
| Environmental Authorisation (through a Scoping and Environmental Impact Assessment (SEIA) | Department of Environmental Affairs (DEA) |
| Waste Management Licence | WCG Department of Environmental Affairs and Development Planning (DEA&DP) |
| Atmospheric Emissions License | Cape Winelands District Municipality |
| Electricity Generation Licence (if pursued) | NERSA |
| Water Use Licence (not confirmed) | Department of Water and Sanitation (DWS) |

The SEIA has a lead time of 18 months, including extensive public consultation: 'The process allows for the registration of interested and affected parties ("I&APs") and includes a public participation component which started on 8/08/2014 with the distribution of the Background Information Document ("BID")' (Drakenstein Municipality, 2015). A draft environmental impact report was compiled by Resource Management Services with public open days and a public meeting held during November 2016 to address remaining concerns about the facility's impacts. Subsequently, a Final Environmental Impact Report will be made available for a last round of public input.

In terms of the building, maintenance and operation of the project, Interwaste will call for tenders for technology that meets the environmental and other performance requirements stipulated in the SEIA process. Once this process is decided, due diligence will be undertaken to ensure the viability and legality of the entire waste processing facility before the project is implemented.

## Award and terms of the contract

### Performance and impact measurement

This PPP covers the operation of all waste management (treatment and disposal) services. The contracting period is 20 years. The performance of the service provider will be defined in a comprehensive set of agreements that are currently being drafted. This will cover specific performance of each of the four plants within the project. Accountability will also be facilitated through municipal representation on the project SPV's board. National Treasury will undertake a mandatory evaluation of the PPP every three years. The project will be monitored on the following performance areas:

- legal environmental compliance with South African law
- adherence to agreed price ranges for gate fees (for solid waste disposed of at the facility) and energy tariffs (energy tariffs are the largest revenue-generating activity)
- compliance with legal requirements for municipal asset management, in line with the Standards of Generally Recognised Accounting Practice (GRAP)

Over the operation of the project, a reduction in municipal solid waste of 52% (in the first phase) and later 89% (when all four components are fully functional), is anticipated. As a result, it is expected that the project will extend the lifespan of the existing landfill to 2035. No contractual penalties are in place in the event of these targets not being reached.

The operation of the project is also seen as a local economic development (LED) opportunity to support job creation by unlocking value from waste. Altogether 116 permanent jobs are expected at the facility (Drakenstein Municipality, 2015). Additionally, there are further opportunities for job creation in the processing of by-products such as the inert ash from the direct combustion plant that can be used to make bricks. This is not included in the scope of the contract.

### Financial considerations

The municipality undertook 'value for money' modelling for the project, comparing a 'business as usual' approach with four different feasible WTE scenarios. The costs were converted to allow for a cost comparison in terms of net present value. The selected solution will deliver an anticipated cost saving to the municipality of R632 118 612 over the project's 20-year contracting period (Drakenstein Municipality, 2015). To achieve this saving, the total investment by the SPV is R433 million.

In the absence of this WTE intervention, the Wellington landfill is scheduled for decommissioning in 2019 (Drakenstein Municipality, 2015). In this scenario, local waste tariffs would increase significantly upon closure of the landfill site. The result would be a 41,3% increase in the first year and 30,5% in the second. Increases would cover the cost of transporting waste to other landfill facilities in the City of Cape Town (Drakenstein Municipality, 2014). If the WTE project is implemented, waste tariffs will only increase at an average rate of 9% per annum. These increases will be used to cover the municipality's costs in implementing the PPP. In addition to keeping waste tariffs at an affordable level, the project is predicted to have a positive

long-term impact on local electricity tariffs by adding to the available local energy supply.

### Working with the best available technology

One of the risks of asking the market to generate technological solutions through competitive bidding, as Drakenstein Municipality did in this case, is that bidders select technologies in line with their own incentives rather than sustainability outcomes. This can mean choosing a proven, older technology rather than an innovative solution (Koppenjan, 2014). For extended contracts such as PPPs, governments can find themselves locked into a suboptimal technology while new innovations make initial plans outdated. Performance incentives can be used to ensure investment in upgrading, while an overreliance on detailed reference designs can reduce flexibility.

In the case of the Drakenstein WTE project, it should be noted that delays in the project have meant that the municipality can exploit much better technology to meet the design and SEIA during the implementation phase.

## Lessons learned

### Barriers to innovation

- The biggest hurdle appears to have been public participation and buy-in. Several engagement tactics, including media releases and public meetings, failed to secure public participation. When the public did engage in the final stages of the SEIA, this was heated and counterproductive. The Drakenstein Environmental Watch (DEW), a non-profit organisation established to interrogate the project, specifically opposed the use of a PPP: 'this hazardous activity will in future be in the hands of an outside company intent on maximising its profits'.
- The change of governing political party during the development of the WTE project significantly delayed it. This was because political buy-in from new leadership had to be obtained from scratch owing to a lack of trust and continuity between the two successive councils.
- As things stand, the municipality plans to use all the energy generated at the WTE plants itself (e.g. for street lights). Because energy will not be sold to a third party, no generating license is required initially. However, according to the municipality, if/when the generation capacity exceeds 10 MW, an independent power producer (IPP) will need to be registered and a licence will be sought under the Electricity Regulation Act 4 of 2006. Municipal energy generation is a contested policy area.

### Success factors

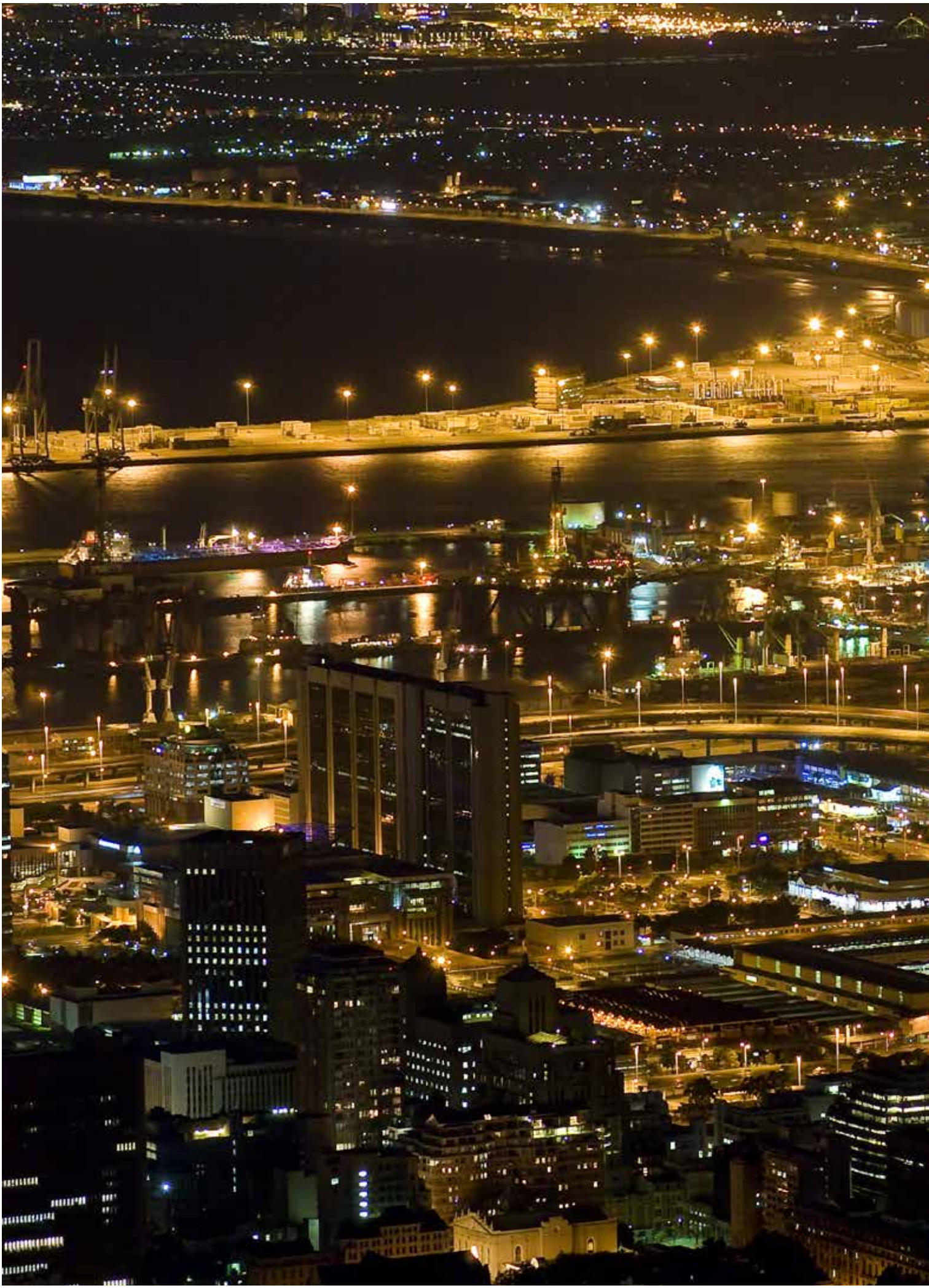
- The competitive bidding process, run by Interwaste, allowed the municipality to access technical know-how that they did not have to address the waste management challenge.
- Auditing processes were successfully navigated by municipal officials.

#### Benefits

- PPPs can give municipalities access to capital and capacity not otherwise available to invest in sustainable infrastructure.
- PPPs facilitate a long-term service agreement (beyond three years) if it meets the requirements under section 33 of the MFMA.

#### Challenges

- The length and complexity of PPPs place strain on government capacity by requiring extensive planning for contingencies and conducting ongoing monitoring and contract enforcement.
- Long-term supplier agreements can lead to suboptimal technology use unless upgrading and innovation is built into the terms of the contract.



SHUTTERSTOCK.COM

# Case study 3:

# Energy performance contracting for municipal buildings in the City of Cape Town

## Context

Several years ago the City of Cape Town already identified the opportunity to utilise energy performance contracting (EPC) for retrofitting old municipal buildings and upgrading the electronic equipment. Improved energy efficiency and lower energy consumption of these buildings are meant to contribute to the City's Energy and Climate Action Plan. The first tender for four municipal buildings was issued in 2009 and another 14 buildings followed in 2011 with the scope to upgrade lighting, occupancy sensors and smart meters. Since the City of Cape Town has had positive experiences with those two tenders, they launched another EPC tender in 2013 for retrofitting 12 buildings, funded through the Energy Efficiency Demand Side Management Programme (EEDSM) of the National Treasury's Division of Revenue Act. The objectives of the tender were to assess the energy consumption patterns in the 12 buildings and to implement technical interventions as well as educational measures for behavioural change of tenants to reduce energy consumption in these buildings. The procurement approach for this EPC contract, the contract design as well as encountered challenges and resulting benefits are presented below.

## Needs identification

Outdated and energy-inefficient municipal buildings in the City of Cape Town were identified as a significant source of high operational expenditure for the City. The retrofitting of these buildings was considered an opportunity to decrease energy expenditure while improving the workspace quality for City employees. The identification of building-specific retrofitting needs was not done prior to the tendering but included in the contract stage to make use of the bidders' technical expertise and make him liable for suggested interventions.

## Procurement approach

### Legal requirements for EPC procurement

The Municipal Finance Management Act (MFMA) prescribes a two-stage process for procuring an energy performance contract. This process consists of an audit stage and a technical implementation stage (intervention).

Internal accounting procedures do not allow the City of Cape Town to utilise energy performance contracting as a financing instrument by reallocating payments for retrofits over a contract period (based on saved energy expenditures). Thus saved energy expenditures derived from energy performance contracting cannot be used to remunerate a service provider. Instead, the investment costs for interventions that are defined by an energy performance contract must be paid within the first three years of the contract period. To hold a contractor liable, reduce investment risks and make use of the original concept of performance contracting, the City of Cape Town designed a liability mechanism: a contractor has to provide a financial guarantee for his submitted energy performance levels. This financial guarantee can be used by the City to cover energy expenditures that occur beyond the levels promised by the contractor.

### Subject matter and scope of the tender

The tender issued in 2013 aimed at awarding a contract to 'a service provider for detailed audits and energy-efficiency interventions at council building complexes'. The scope of the tender covered technical equipment of 12 buildings, which was supposed to be upgraded based on a necessary energy audit. Relevant equipment included lighting, ventilation and/or climate control, water heating and power factor correction. Despite the MFMA requirements with respect to a two-stage procurement process, the City of Cape Town decided to issue a single tender for both EPC stages (the audit stage and the intervention stage) while only selecting one contractor for both. This was done to circumvent the inherent risk of selecting two different contractors for each stage with potentially diverging views regarding retrofitting needs, intervention costs and possible energy savings. To avoid the selection of a contractor with cost-ineffective solutions (owing to limited information about intervention costs at the time of the contract award), the contracting authority required all bidders to include into their bid a full quote for the audit stage, and an indication of their mark-up percentage for the costs of materials, labour and disposal for implementing the suggested retrofit interventions (see below). However, the contracting authority did not request a detailed quote for the intervention stage as this would be defined finally only after the audit stage. Thus, the contracting authority had no obligation to commit to any of the suggested interventions until detailed costs and energy savings had been determined.

### Formal qualification criteria

To ensure their competence for providing energy services and implementing retrofit measures, bidders/bidding consortia were required to provide information about the main company that was expected to enter into a contract with the City of Cape Town and would hence be responsible for overseeing the work. The required information included:

- evidence that the company was officially registered as an Energy Service Company (ESCO) with Eskom, the state-owned electric utility company in South Africa
- description of the main company's relationship with other bidding consortium members
- responsibilities of the other bidding consortium members
- documentation of a good track record regarding the implementation of EPC projects, client information, provided services, achieved savings, contract value, and actual performance against work programme and budget
- description of approach to the work and detailed work programme, including procedures and number of staff to be employed, information to be sourced from the client records and necessary time frames, schedule of activities and milestones for each building complex (timeline for audit, implementation, date of project completion).

These components were later assessed as a functionality component during the tender evaluation while a minimum overall score of 60% was necessary to be further considered for the contract award.

### Award criteria and tender evaluation

The following price components were used to assess all bidders formally accepted to the final evaluation:

- costs for detailed energy-efficiency audits for the 12 buildings, including costs for preparation of audit reports, and intervention proposals and quotations
- percentage mark-up on materials, labour and disposal costs for implementing anticipated retrofit and energy-efficiency interventions, as well as costs for technical personnel, supervision, artisan staff, semi-skilled staff and labourers (all personnel costs on hourly basis)
- additional fees and disbursement for occupational health and safety professional, capacity building and behaviour change programmes.

A bid evaluation committee with relevant expertise was assigned to review all received bids. A technical expert was part of this committee and assessed the technical viability and likely performance of all interventions suggested by each of the bidders. This is an important preparatory step to identify appropriate performance levels of the energy performance contract and ensure that the best available technology will be implemented in municipal buildings at a later stage. The award recommendation of the evaluation committee was hence communicated to the bid adjudication committee of the City of Cape Town which is responsible for making the final award decision. This decision is based on a methodology that considers bid price, preference considerations (status of the company) and functionality components of each bid. A minimum of 60% of a functionality score must be achieved by a bidder to be further considered. Functionality assessment is based on documentation submitted in response to the above mentioned 'Formal Qualification Criteria' and covers the following categories:

- overall quality of the proposal
- company experience in similar projects
- adequacy of proposed work plan
- adequacy of organisation (management)
- suitability of key personnel for the project.

Based on a calculated overall score for each bid, the bidder with the highest score will be awarded the energy-performance contract. Accordingly, the selected service provider is appointed to execute the subsequent two stages of the contract.

The City of Cape Town's tender evaluation criteria stipulated the following regarding negotiations with preferred tenderers:[9]

> 6.4 Negotiations with preferred tenderers
>
> 6.4.1 The City Manager (or his delegated authority) may authorise the negotiation of the final terms of a contract with tenderers identified through a competitive bidding process as preferred tenderers provided that such negotiation:
>
> a) does not allow any preferred tenderer a second or unfair opportunity;
>
> b) is not to the detriment of any other tenderer; and
>
> c) does not lead to a higher price than the tender as submitted.
>
> 6.4.2 Minutes of such negotiations must be kept for record purposes.
>
> 6.4.3 If negotiations fail to result in unacceptable contract terms, the City Manager (or his delegated authority) may terminate the negotiations and invite the next ranked tenderer for negotiations. The original preferred tenderer should be informed of the reasons for termination of the negotiations. Once negotiations are commenced with the next ranked tenderer earlier negotiations may not be reopened by the CCT [City of Cape Town].
>
> 6.4.4 The provisions of clauses 6.4.1 to 6.4.3 shall apply to the invitation to negotiate of the next ranked, tenderer, mutatis mutandis

## Contract execution and performance clauses

### Energy audit

The aim of the first stage was to identify a suite of retrofit and energy-efficiency interventions to be implemented in the 12 municipal buildings. Additionally, a baseline of the current energy consumption of each building needed to be determined to calculate energy expenditure savings that can be achieved through the suggested interventions and to define the necessary contract length (for amortising the investment costs).

Audit results and proposed interventions (as applicable for lighting, ventilation and/or climate control, water heating, power factor correction, installation of meters) were submitted to the contracting authority while ranking the proposed interventions according to:

- cost effectiveness (including capital and operating costs)
- level of energy savings (in KWh) resulting from the intervention
- pay-back period.

9 etenders.gov.za/sites/default/files/tenders/1G.2016.17%20Supply%20and%20Installation%20of%20Fixed%20Particulate%20Matter%20Monitoring%20Instruments_Final.pdf

Based on this information, the contracting authority chose the most cost-effective interventions for each building and determined the required contract period (based on necessary time to recover all investments costs through energy expenditure savings).

### Implementation and evaluation of interventions

During this phase, the contactor implements all selected interventions and is paid for these upfront. Moreover, the contractor is responsible for operation and maintenance and has to ensure that promised energy savings are accomplished during the defined contract period.

### Performance clauses

A penalty and bonus system is part of the performance contract to set performance incentives for the service provider. The contractor is required to deposit a financial guarantee equivalent to the total amount of promised energy savings for a period of 12 months. After the first 12 months, the next financial guarantee will be deposited for 12 months. This requirement is repeated until the accumulated energy expenditure savings from all defined interventions are achieved. Three scenarios facilitate the performance incentive system:

- **Contractor outperforms:** If the contractor reaches the promised energy expenditure savings for a 12-month cycle prior to the end of this cycle, the next financial guarantee will be deposited. As this will allow the contractor to end the overall performance contract early, it is an incentive for him to exceed previously defined performance targets.
- **Contractor meets performance targets:** This scenario triggers no changes and financial guarantees must be deposited by the contractor as planned. The performance contract period will be as long as initially stipulated.
- **Contractor underperforms:** The contractor will be required to use the financial guarantee at the end of the 12-month period to pay the contracting authority an amount equivalent to the amount of energy expenditure savings that have not been achieved as promised. Subsequently, the contractor will issue a new financial guarantee for the next period.

### Tenant behaviour and education

Since the behaviour of tenants has a significant impact on the energy consumption and hence influences whether the contractor will out- or underperform, the contractor has a strong incentive to educate them to be more energy-conscious tenants. Additionally, the Energy and Climate Change Unit of the City of Cape Town provides a small budget for the contractor to invest in educational measures for the tenants.

### Handover

The City of Cape Town avoids limited internal knowledge capacities and resulting contractor dependency after the initial performance contract by requiring the contractor to use the technical services department of the City for performing

maintenance tasks during the last two years of the contract period. However, the contractor remains liable for energy performance until the end of the performance contract. Since effective maintenance has an impact on the energy performance in a building and hence on the liability period (see performance clauses), the contractor is incentivised to train departmental staff appropriately.

## Lessons learned

### Benefits

- Consolidated tendering benefits: Using the tendering process for selecting a single contractor for both contract stages means less transaction costs for tendering, negotiations and contract management.
- Openly defined tender instead of prescribing technical solutions: Use of bidders' expertise and room for innovative solutions.
- Energy performance contracting and financial guarantee mechanism: The contractor remains liable for energy performance = performance risks and financial risks are transferred to the provider who is consequently incentivised to provide high energy expenditure savings (even beyond the agreed performance levels).
- Educational and capacity-building components: The contractor's expertise is utilised for internal capacity building and tenant education.

### Challenges

- Upfront financing needs: The City of Cape Town appears not legally allowed to utilise energy performance contracting for shifting high upfront investments over a contractual period. Usually, this is an attractive component of EPC as it allows municipalities with low financing capacity to retrofit infrastructure and reduce long-term operational expenditure. Depending on the terms and conditions of upfront financing sources, this might not be a financially attractive solution (however, usually state agencies receive attractive conditions when raising debt capital).
- Consolidated tendering limitations: Even though contractual clauses are in place, it remains challenging to select the most cost-effective provider for implementing interventions at the end of tendering when an audit stage, which serves to determine the interventions, has not yet happened but is meant to be provided by the same contractor.
- Technical preconditions: Defining a reasonable level of energy savings as part of EPC requires existing metering technologies in buildings to calculate baseline levels. This is often not yet present in municipal buildings even though increasing amounts of smart metering devices are installed.
- Accountability challenges for an EPC contractor: Even though educational programmes for tenants are part of an EPC, the established payment system for energy consumption in the City of Cape Town does not incentivise municipal departments to be accountable for the amount of energy they use. This impedes the EPC contractor's ability to achieve higher levels of energy savings.

# Case study 4:

# Tender specifications and evaluation criteria for energy efficiency (services) in the City of Cape Town

(Doc. Name: 299C-2015-16_advertised spec)

p.25

**Tender: DETAILED AUDITS AND LIGHTING ENERGY EFFICIENCY INTERVENTIONS AT COUNCIL FACILITIES. Tender No: 299C/2015/16**

---

**SPECIFICATIONS FOR DESIRED TECHNOLOGICAL SOLUTIONS**

**Technology – General description**

[this is rather functionally described but LED specifications get more technical]:

> 'It is required that the technology proposed for retrofitting in the course of the interventions will be proven technology suitable for use in the identified duty and location and having a satisfactory efficiency and operational record. Consideration must be given in each case to the impact of the proposed intervention (applying the principle of Integrated Environmental Management) and to key operational requirements. The proposed cost of the technology to be implemented is to be market based and the City will not accept any proposed implementation plans where costs are deemed to be unreasonably inflated.'

p.25

## 1. Lighting-specific description

> 'LED lighting is the most efficient lighting on the market and will be the only acceptable technology. ... The lighting replacement will be on a like for like replacement basis with the most energy efficient proven technology on the market.'

**Minimum requirements to be met:**

- Guaranteed lumens and lifespan
- SABS approved LEDs: South African Bureau of Standards (SABS) provides a range of standards for lighting technologies (quality management systems, safety requirements, test methods for specific materials or parts)

pp.26-37

A very detailed table is presented, listing all existing lighting technologies and their performance specifications, and suggesting specific LED technologies (with performance specs) as replacement for each of the existing technologies.

**Performance specs (technical description) used to describe each of the suggested LED technology types:**

- Watt amount
- Lighting technology type (= LED)
- Fitting
- Guarantee lumens/fitting (e.g.: 5 years warranty full fitting LM70 >54 000 hours)
- Lumens/Watt
- Colour rendering index

p.38

**Lighting requirements to comply with the Occupational Health and Safety Act:**

- Minimum illuminance (lux) levels are recommended for different facilities in various building types (library, clinics, offices)

p.38

## 2. Metering

Metering devices are already installed in relevant buildings and are required to be used for monthly monitoring of energy savings and to verify that the performance guarantee savings have been met.

p.39

There is explicit reference to energy savings:

> 'This tender requires full energy efficiency interventions to be proposed and implemented at the selected buildings with a performance guarantee of the savings.'

---

PART V

p.43

## ASSESSMENT CRITERIA FOR SUGGESTED (ENERGY EFFICIENCY) INTERVENTIONS

Criteria are provided concerning 'all energy efficiency and water efficiency related Interventions […], with each intervention considered individually'.

**Note:** These criteria are not applied in the tendering process. Instead, the criteria serve to assess the suggested interventions based on the conducted energy audit (the contract has already been awarded at this stage):

- Overall cost of the individual intervention
- Cost of procurement of the hardware to be employed
- Cost of labour installing the above items
- Cost of disposal and providing the City with safe disposal certificates
- Brokerage to be charged on the work and procurement associated with the intervention
- The lifecycle cost of the equipment installed in the course of the intervention, given a life expectancy of 15 years
- Level of saving, on an annual basis, to be guaranteed resulting from the intervention
- The maintenance requirements of the intervention (servicing of equipment and monitoring)
- The proposed method of safe disposal of lights removed from City facilities, in order to ensure that hazardous waste is managed in an environmentally friendly manner, and that all inefficient technologies are destroyed to avoid reuse and to comply with funding requirements
- Resulting payback period
- Proof that proposed energy efficiency technology is the latest and most proven technology to be adopted
- State the number of local manufacturers that will be used to source specific materials. Where possible, only local suppliers must be considered.

After implementation of energy-efficiency measures (interventions), monthly progress reviews serve to monitor the contractor's performance: 'These reports should describe the progress achieved and a quantification of performance to date in comparison to original program scheduling and costs'.

---

## EVALUATION OF TENDERS

All tenders received shall be evaluated in accordance with the Supply Chain Management Regulations, CoCT's SCM Policy and the Preferential Procurement Policy Framework Act 5 of 2000. A formula is explained as a basis for an award decision, covering the bid price, minority support aspects (black economic empowerment, historically disadvantaged individuals, and similar considerations) and functionality considerations. No tender will be regarded as an acceptable tender/responsive if it fails to achieve the minimum qualifying score for functionality of 60 out of a maximum of 100. The functionality scoring is based on components of the following table:

pp. 53-54

**Table 7: City of Cape Town evaluation criteria for tender submissions**

| Evaluation are | Evaluation criteria | Maximum points |
|---|---|---|
| Overall quality of proposal | Clarity;<br>Conciseness;<br>Completeness;<br>Conformity with RFP | 10 |
| Company experience in similar projects | Proven expertise and successful past involvement in:<br>▪ Energy-related performance contracting;<br>▪ Detailed audits of similarly sized buildings;<br>▪ Audits incorporating all fields of built environment energy use;<br>▪ Staff behaviour analysis and motivation;<br>▪ Successful interventions in similar building complexes;<br>▪ Power metering applications. | 35 |
| Adequacy of proposed work plan | ▪ Understanding of the services to be performed;<br>▪ Planned approach to performing the services;<br>▪ Completeness of the work plan;<br>▪ Key Performance Indicators and associated timeframes;<br>▪ Efficient utilisation of assigned personnel;<br>▪ Disposal plan of removed lights. | 25 |
| Adequacy of organisation | Ability of the proposed Project Organisation to:<br>▪ Manage the project;<br>▪ Do the detailed audits;<br>▪ Engage in financial appraisals;<br>▪ Execute the technical interventions;<br>▪ Source and supply the commodities required for the interventions;<br>▪ Undertake the staff motivation and communication required for behaviour pattern change. | 15 |
| Suitability of key personnel for the project | Qualifications;<br>Relevant experience;<br>Specific knowledge relating to the project type. | 15 |
| Total points | | 100 |

Tender 65C/2013/14, p. 44 – *Doc name: Detailed Audits Energy Efficiency Interventions Final Version 65C (10)*):

PART V

# Case study 5:

# Innovative business model for energy-efficient lighting in Sala Municipality, Sweden

## Context: Municipality-wide street-lighting refurbishment

In 2014, the public utility company Sala Heby Energi AB (SHE) decided to initiate the refurbishment of 5 166 light points in Sala Municipality, Sweden. SHE defines itself as an energy-service company for the municipality, being a frontrunner in adopting technologies that contribute to a transition to renewable energy sources and energy efficiency.

**Figure 11: New LED lights (foreground) and old high-pressure sodium vapour lamps (background) in the centre of Sala**

Photo: Laurin Wuennenberg

## Needs identification

Sala Heby Energi is responsible for the operation and maintenance of street lighting in the municipality and hence has gained knowledge about operational costs of the street-lighting system. Due to the continuous search for energy-efficient solutions, SHE recognised the market maturity of LED technology and was keen to take advantage of the superior energy-efficiency levels and fewer maintenance needs of LED lighting compared to other lighting technologies. Therefore, SHE considered a large-scale street-lighting refurbishment. For the desired solution, the following needs were identified:

- material supply of LED luminaires
- optimisation of energy consumption and maintenance needs of the street-lighting system
- a finance scheme that would enable SHE to pay no upfront investments and cause no increase in operational costs (capital costs, energy costs, maintenance costs)
- asset ownership by the municipality to have control over the street-lighting system and all data that is potentially collected through new technologies.

## Procurement approach and procedural steps

Public procurement of innovation (PPI) was applied since the objective was to widely deploy LED technology in Sala Municipality (a technology that was not yet market-proven on a large scale in Sweden) and at the same time to procure complementing services that facilitate energy-efficiency targets and financing needs. Sala Heby Energi decided to use the competitive dialogue procedure for the procurement because technical specifications of LED luminaires and potentially complementing technologies were not specified upfront, nor was it clear whether the market could provide combined solutions that integrate LED material supply, energy-efficiency services and a finance scheme. The competitive dialogue allowed SHE to interact with candidates during the tendering process to determine technical solutions, services, finance options and resulting contract terms and conditions.

The following steps were applied:

1. **Pre-procurement activities:** Market consultations to identify market readiness of lighting manufacturers' integrated lighting solutions that combine outdoor lighting products and complementing services.

2. Definition of qualification requirements and award criteria for tender notice:
   - **Qualification requirements:** LED luminaires have to be available when the contract is concluded but SHE is responsible for installation; no upfront investments need to be paid; operational costs (including running capital costs) for SHE are reduced from the beginning of the first year of operation; LED technology and its light quality should be at the forefront; SHE remains the asset owner of the installed street-lighting system.
   - **Award criteria:** Annual cost savings for SHE based on new solutions compared to the old street-lighting system; length of contract (payback period) between the supplier and SHE; offered warranties throughout the contract; lifetime of offered LED luminaires.

3. **Competitive dialogue stages:** Four of 10 identified candidates showed strong interest in providing solutions and were invited by SHE to participate in a competitive dialogue procedure. The dialogue stages were an important learning process for the procuring authority to understand and identify suitable LED technologies (lifetime, light quality aspects), complementing smart communication technologies (control management system) as well as financing opportunities and performance contract mechanisms.

## Award decision

Sala Heby Energi awarded the contract to Philips Lighting, being the lighting manufacturer that offered the best integrated solution (quality and energy-efficiency levels of LED luminaires, cost savings through an advanced remote control management system, performance warranties, financing scheme). During the dialogue stages Philips was also the most promising contract partner in terms of cooperative attitude and future innovativeness.

## Contract design and execution

After selecting the winning tenderer, further negotiations took place to establish a viable contract for both parties. To confirm functionality (attainable energy savings and light quality) of LED equipment and the control management system, the selected manufacturer installed two test sites in Sala Municipality. Test insights established the basis for determining and stipulating throughout the contract period an 80% energy saving compared to the old street-lighting system, a 70% saving in maintenance costs, details of the finance scheme (annual payments) and consequent contract lengths of 10 years. Altogether, the field testing and contract negotiations were important in facilitating transparency, building trust, mitigating performance risks of the equipment and hence ensuring contract viability.

## Lessons learned

### Success factors

- Needs were clearly defined by the procuring agency and it had the willingness and capacity to engage with the market (innovation ambassadors within municipalities help to promote innovation and overcome the risk-averse attitude of the public sector).
- Direct engagement of the procurer with manufacturing companies (instead of retail sector/wholesalers) helped to take advantage of the supplier's technological know-how.
- Communication/dialogue-intensive procurement was key in different phases of the procurement:
  - Innovation promotion: Need-specific and integrated solutions were designed during the procurement process rather than providing a narrow definition of solutions beforehand.

  - Pre-procurement market engagement: Identification of the lighting manufacturer´s ability to provide not only LED technology but a finance scheme, hence ensuring market readiness for desired solutions.
  - Dialogue during procurement: Identification of a lighting control management system as a desired technology component of the solution (this was not in the scope of the public authority prior to engaging with the market).
  - Dialogue with winning tenderer: This was necessary in order to design the contract and ensure viability of the finance model.
- The use-phase responsibility of the supplying manufacturer was achieved through requesting a finance scheme. This was a smart way to hold the supplier responsible for the performance of delivered products and trigger its inherent interest in providing high-performing solutions. In this way a win-win system was created.

## Innovation barriers

- The municipality's management responsibility for a lighting control management system determines energy consumption during operation. Hence, contractual arrangements to hold a supplier responsible for energy-saving performance are difficult to put forward. This constellation impeded the use of a financial bonus and penalty system that was based on a precise energy-saving performance of the lighting system. Instead, a performance corridor and a trust-based system needed to be established.

### Benefits

- Dialogue-intensive, transparent procurement procedure allowed identification of best available integrated lighting system and competent contract partner.
- Outcome-focus on energy efficiency instead of prescribing technical solutions resulted in an optimised solution.
- No upfront payments and contractor's performance responsibility throughout the contract period.

### Challenges

- Time-intensive procurement procedure.
- Long contract period and continuous dependency on contractor's lighting control management system after contract period.

### Replicability in South Africa

- **Competitive dialogue:** A similar procurement procedure that allows procuring authorities to conduct dialogue stages with interested bidders during tendering is also available in South Africa: Two-Stage Bidding, Supply Chain Management (SCM) regulation 25, Municipal Finance Management Act (MFMA).
- **Negotiation with winning bidder:** In South Africa, negotiations for contract design with the winning bidder is viable through the 'preferred bidder' mechanism: SCM regulation 24, MFMA.
- **Financial obligations for municipalities:** It can be a challenge for municipalities in South Africa to design a contract that incurs financial obligations beyond the three-year budget cycle. Hence, the opportunity of using energy performance contracting as a financing instrument by paying back upfront investments and operations and maintenance (O&M) costs through energy-efficiency savings during a long contract period is limited. Section 33 of the MFMA offers a solution to signing contracts with longer financial obligations. However, the process of activating exemptions through this section is onerous and time consuming (until it is possible for a municipality to enter into a contract, the lead time is approximately six months after tendering). Exemptions can be based on threshold value or commodity. For example, the City of Cape Town is allowed to decide on exemptions of this nature themselves and to proceed accordingly.
- **Financing alternative:** All costs associated with upfront investments for new street lighting and respective O&M expenditures can be covered by the procuring authority within the three-year budget cycle. At the same time, a longer-term contract can be in place that holds the supplier liable for monitoring and fulfilling agreed-upon energy-efficiency performance and energy expenditure savings, and obligates the supplier to pay a penalty fee in case of lower performance.

# Case study 6:

# Innovation procurement for building refurbishment in Enzkreis County, Germany

## Context: Innovative materials and works for a vocational school building

The administrative office for technical services in Enzkreis County, Germany, is responsible for technical and administrative building management and hence also for procuring new solutions for vocational schools that are administered by the county. The shed roof of the vocational school in Mühlacker was due for reconstruction.

To find innovative insulation and glazing solutions for this roof reconstruction project, the procuring authority participated in the international, EU-supported PAPIRUS project that started in 2014. The objectives of PAPIRUS were to promote the public sector's role as an early adopter and market creator for building materials characterised by nearly zero-energy consumption during repair and construction; to facilitate new procurement and tender evaluation methodologies (lifecycle costs); and create a European market for building solutions as well as knowledge exchange between the four participating public authorities of different EU countries.

## Needs identification

The procuring agency identified building-specific needs and communicated respective functional requirements to the market instead of prescribing technical solutions:

- new light-weight roof materials to not overload the limited capacity of the building's support structure
- improved energy-efficiency levels of the building (new insulation material and windows)
- reconstruction work that maintains the original structure of the roof, enables continuous operation of the building and avoids clearing out the heavy equipment of the building (i.e. a step-by-step roof replacement by using materials with a high degree of pre-configuration).

## Procurement approach and procedural steps

The open procurement procedure for awarding public works contracts was applied for this roof reconstruction project since this was the procedure used in the PAPIRUS project. Moreover, old procurement laws in Germany that were in place when the project started, prescribed the use of an open procedure for procuring reconstruction works because it was sufficiently possible to describe desired solutions and services in a functional manner without necessitating negotiation during the tendering process.

Based on tendering for a public works instead of a material supply contract, potential issues like warranty for the installation service, responsibility for construction coordination, and liability for material were resolved automatically. The content of the tender (e.g. detailed functional requirements, technical specifications of solutions) was informed by pre-procurement communication with the market.

The following procurement steps were applied:

### 1. Pre-procurement activities

- Information activities to raise market attention about PAPIRUS and the national building project.
- Market research and open market consultation (including a face-to-face market event with interested suppliers at the vocational school building) with the following objectives:
  - information sourcing from different supply-chain actors (especially material suppliers) on available solutions, market readiness and the supplier's capacity to engage with the public sector
  - using insights in a product-neutral manner to prepare tender documents
  - informing the market explicitly about the school reconstruction project in Mühlacker
  - knowledge sharing and inspiration between the procuring agency and interested suppliers as well as among material suppliers and construction service contractors.

### 2. Definition of contract lots and functional requirements

The contract was divided into two lots to enable the participation of small and medium-sized enterprises (SMEs). It is common practice in Germany to define separate lots for different tasks of a building project. However, suppliers were allowed to bid for both lots. The functional requirements were defined as follows:

**Lot 1 – Opaque roof:** Roof sealing and covering, carpentry and plumbing work. Implementation of opaque envelope with good insulation properties to minimise thermal energy losses and optimise energy demand for heating and cooling.

**Lot 2 – Glazing:** Metal construction and glazing work. Implementation of windows for the shed roof that make use of favourable window properties (natural light, fresh air and solar radiation, leading to increased indoor comfort), reduce energy losses and increase solar gains in winter, and reduce solar gains in summer. Additional requirements for sun-protection and safety since roof structure is the ceiling of the building.

**Both lots:** Use lightweight materials that ensure neutrality of load sums compared to old roof system to avoid installation of a new steel structure or of building reinforcements.

### 3. Supplier qualification: pre selection criteria

A range of qualification requirements were formulated for the pre selection of offers: formal requirements (timeliness, completeness, etc.), the capacity of bidders to implement works (skills, experience, performance reliability of former projects, etc.), mathematical correctness of technical calculations, and appropriateness of content with respect to minimum technical requirements. If suppliers went beyond the minimum technical requirements, they received bonus points which were considered in the final evaluation process.

### 4. Evaluation methodology

After the pre selection, the most economically advantageous offer was determined among all remaining offers, based on award criteria (and subcriteria).

The four major award criteria for Lot 1 and Lot 2 were identical and the subcriteria were almost identical, as depicted in Table 8.

**Table 8: Award criteria and subcriteria for Lot 1 and Lot 2**

| Award criteria | Weight | Subcriteria | Weight |
|---|---|---|---|
| Energy efficiency | 30% | Thermal transmittance | 20% |
| | | Thermal bridges (Lot 1)<br>Capacity of windows to reduce solar gain in summer and to increase solar gain in winter (Lot 2) | 10% |
| Sustainability | 10% | Global warming potential (= $CO_2$-equivalent value) | 10% |
| Installation, maintenance, service and others | 30% | Reduction of weight | 10% |
| | | Installation process and method (e.g. timespan/ easiness of reconstructing the roof) | 10% |
| | | Maintenance requirements and lifetime | 10% |
| Economic criteria | 30% | Purchase price | 30% |

Minimum output performance requirements (e.g. maximum thermal transmittance accepted for roof insulation: 0,145 W/m²K (watt per square metre kelvin)) and required technical documentation that were considered essential for evaluating and interpreting each award (sub-) criterion were defined for the two lots.
Table 9 provides an example of how the award criterion 'energy efficiency' was operationalised for both lots.

**Table 9: Operationalisation of energy efficiency for Lot 1 and Lot 2**

| Lot | Award criteria and subcriteria | To be submitted content / minimum technical requirements |
|---|---|---|
| Lot 1 | **Energy efficiency:** Thermal transmittance of the roof insulation | Thermal conductivity (= minimum requirement): 0,035 W/m²K or better<br>Maximum thermal transmittance accepted (= minimum requirement): 0,145 W/m²K or better<br>Minimum thermal transmittance specified: 0,125 W/m²K |
| Lot 2 | **Energy efficiency:** Thermal transmittance of the entire window (glazing plus mullions and transoms) | **Requirements UCW façade:**<br>Maximum thermal transmittance value accepted for façade element with inclination 62° (= minimum requirement): 1,40 W/m²K or better<br>Minimum thermal transmittance specified: 1,12 W/m²K<br>**Further requirements:**<br>Thermal transmittance value mullion at least: $U_f$ = 1,05 W/m²K or better<br>Thermal transmittance value transom at least: $U_f$ = 1,05 W/m²K or better<br>Thermal transmittance value glazing with 62° inclination at least: $U_{g\ 62}$ = 0,7 W/m²K or better<br>A calculation of the $U_{cw}$ value for the defined standard element (3 stationary glasses, 2 folding wings) had to be submitted, as well as technical data sheets for each product and component of the curtain wall |
| Lot 1 | **Energy efficiency:** Thermal bridges of the roof insulation | **Objective:** Construction with as few thermal bridges as possible.<br>Documentation and an explanatory description had to be submitted; the properties and effects of the offered system regarding thermal bridges needed to be clarified, e.g. product declaration, drawings, system sections/profiles. |
| Lot 2 | **Energy efficiency:** Capacity of windows to reduce solar gain in summer and increase solar gain in winter | **Requirements glazing:**<br>Translucence TL: 40–60%<br>Total energy-permeability g: 20–30%<br>A product declaration and technical data sheets for the glazing had to be submitted. |

Addressing the sophisticated range of award criteria and subcriteria involved a lot of effort and time on the supplier's side – not only to come up with technical solutions that comply with the procurer's expectations and the accompanying calculations but also to prepare the extensive documentation.

## Award decision

Ten offers were submitted for the two lots but six of these were excluded in the pre-selection phase, mainly owing to formality issues (e.g. missing prices) or the lack of technical information. The high number of exclusions in the pre selection phase was unusual and associated with the detailed documentation requirements. In an open procurement procedure it is not possible to hand in relevant technical information at a later stage.

**Figure 12: Vocational school building before the refurbishment work (left) and after (right)**

Source: PAPIRUS Final Conference Presentation 2016

The remaining four offers were in the price range that the procuring authority aspired to. These offers were evaluated by a joint cross-border evaluation team, consisting of experts from participating authorities in the PAPIRUS project.

A supplier was selected for each of the two lots. The two winning suppliers did not attend the market event in Enzkreis but had shown interest in the tender from the beginning and stayed in close contact with the procuring authority.

The awarded solutions had innovative character and facilitated the following construction benefits:

- Light-weight materials were used in both lots (6 kg less per m² than requested) that easily fulfilled the requirement to ensure neutrality of load sums.
- The requirements for ease of installation were fulfilled to allow ongoing building operation.
- Low maintenance solutions were used and overall low life cycle costs (from construction to disposal) achieved.
- The upfront price was lower than expected (Lot 1: 10% lower; Lot 2: 40% lower).
- Construction was done almost without thermal bridges, which meant energy savings.
- The achieved energetic standard was distinctly better than required by the German Energy Saving Regulations and nearly Passive-House-Standard.

## Lessons learned

### Success factors

- Pre-procurement activities are especially important if the public procurement of innovation is done by applying an open procurement procedure. As in the PAPIRUS project, market consultation events are a helpful measure for knowledge exchange, tender preparation and raising market attention.
- Sophisticated needs identification and market research processes facilitated precise tender formulations, which established the baseline for receiving value-adding offers.
- The procuring agency designed context-specific tender documents and did not follow all suggestions of the PAPIRUS project. They adjusted the tender to local market conditions, e.g. they issued a public works contract instead of a suggested supply contract since they were aware that material suppliers do not serve end-customers directly in Germany but provide materials to building contractors that engage with the public sector and do installation work.
- Suppliers in the building sector are used to find pre-defined solutions in tenders, hence are used to only do calculations and hand in respective offers based on prices. Innovation procurement without pre-defined solutions requires suppliers to be more creative and invest more time to offer designed solutions that address needs/requirements. This is a learning process for suppliers of building solutions.
- The sophisticated award criteria and evaluation process facilitated the consideration of sustainability criteria.

### Innovation barriers

- Even if the procuring authority is tendering not only nationally but across the EU for a building project, it is unlikely to receive many international bids because of decisive differences in building regulations, national procedural laws and market structure.
- The open procedure is complicated to apply for the public procurement of innovation since no further negotiation and tender adjustments can occur during the tendering process. Accordingly, intensive time investments were needed upfront to prepare functional requirements and technical specifications precisely to get valuable offers. This can lead to strict pre-selection criteria and narrow tender specification and consequently hamper innovation (a high number of bidders were eliminated in the pre selection phase). If the Enzkreis County had the option, they would have applied the competitive procedure with negotiation.
- The excessive number of award criteria was a barrier to innovation. The procuring authority will define fewer award criteria in future to reduce the time efforts not only of interested suppliers but also of the authority's evaluation procedure. It is problematic if the required documentation does not comply with certain procurement requirements because these requirements are not yet common standard among suppliers. This could create competitive distortion and exclude bidders, especially SMEs. It would be easier to use criteria that suppliers had already submitted during their legal product approval process in the respective country/region.

- Market structure in the (German) building sector prevents direct interaction between public procurers and material suppliers/manufacturers. This results in a lack of knowledge on the procurer's side and a potential lack of market transparency.

### Benefits

- Pre-procurement market engagement is valuable for knowledge exchange, tender preparation and raising market attention.
- Sustainable and technically superior solutions were procured thanks to sophisticated evaluation methodology that used outcome-based specifications and integrated environmental criteria with significant weights.
- Procured solutions have low lifecycle costs since the purchase price was only one of many criteria.

### Challenges

- Lengthy public tender preparation procedure (e.g. for designing award methodology).
- Detailed documentation requirements are burdensome for bidders and resulted in comparatively many formality flaws and the exclusion of bids.
- The open procedure did not allow negotiations during the tendering process.

### Replicability in South Africa

- **Mixed price-quality award criteria:** In South Africa, it is legally not allowed to use a similar range of functional and price criteria for the final award decision. Functional/quality criteria can only be applied as minimum requirements during a pre selection stage (according to Preferential Procurement Policy Framework Act regulations). All bidders that pass this stage are evaluated on a common formula that combines 'price' and 'preference/BEE points'. The contract will be awarded to the bidder who scores the highest adjudication points (price + preference), irrespective of his performance during the pre-selection stage (as long as minimum requirements are fulfilled).
- **Exclusion owing to formality flaws:** As observed in this case study, a high percentage of bidders are dismissed during tendering in South Africa owing to formality flaws in their bidding documents. When it is of critical importance to secure as many good offers as possible, it is feasible to do a non-compulsory or even a compulsory briefing to explain the importance of requirements to bidders and help them to conceive good quality offers.
- **Contract award decision:** Contract award decisions in South Africa are not made immediately after bids have been assessed but only after negotiations about contract clauses are finalised. For example, the City of Cape Town will refer to SCM regulation 24 to adjudicate the 'preferred bidder status' to the best performing bidder, which allows the City to undertake contract negotiation within limited parameters to specify and agree upon all contract terms.
- **Joint procurement restrictions:** SCM regulation 32, MFMA currently limits the extent to which organs of state in South Africa can procure together or from one another's contracts. However, a new Public Procurement Bill is anticipated which contemplates uniform procurement regulations for all organs of state and may facilitate stronger collaboration between them, and even joint tendering.

# Case study 7:

# Innovation procurement for new building materials in Oslo Municipality, Norway

## Context: Material procurement for new nursing home

Omsorgsbygg Oslo KF is a municipal property management organisation owned by Oslo Municipality. This organisation is responsible for the property and infrastructure management of all publicly owned nursing homes, and hence procure solutions for renovation and new construction projects.

For regular construction projects, Omsorgsbygg Oslo usually hires contractors from the private market who coordinate all the construction work. However, for the new Lindeberg nursing home construction project, the procuring authority decided to use a different procurement approach and participated in the international, EU-supported PAPIRUS project that was started in 2014. The objectives of PAPIRUS were to promote the public sector's role as an early adopter and market creator for building materials characterised by nearly zero-energy consumption during repair and construction; to facilitate new procurement and tender evaluation methodologies (life cycle costs); and create a European market for building solutions as well as knowledge exchange between the four participating public authorities of different EU countries.

## Needs identification

In line with the objectives of the international PAPIRUS project, Omsorgsbygg Oslo put forward areas for material innovation for the new nursing home: energy-efficiency gains through opaque envelope materials and windows, future building flexibility through inner panels solutions, thermal energy storage and natural lighting solutions. Since the current building standards in Norway do not exactly focus on these areas, the procuring authority anticipated that they could benefit from participating in the PAPIRUS project and gain expertise in these areas. However, there was not a context-specific needs identification.

**Figure 13: Projected Lindeberg nursing home**

Source: Tender documents, technical specifications Oslo

## Procurement approach and procedural steps

The open procurement procedure for awarding material supply contracts was applied. Omsorgsbygg Oslo was optimistic that it would be possible to receive valuable offers by applying this procedure and by sufficiently describing desired functionalities in the tender announcement. The procurement was designed as public supply contracts with the intention to purchase directly from material suppliers building materials that were meant to be installed in Lindeberg nursing home at a later stage.

The following procurement steps were applied:

### 1. Pre-procurement activities

Normally the procuring authority only works with building contractors for new construction projects but in the course of defining objectives in the PAPIRUS project, they directly approached material suppliers and followed the intention to procure and evaluate offered materials directly. To raise market attention about the nursing home project, identify available material solutions, assess market readiness and prepare tender documents appropriately, the following pre-procurement activities were conducted:

- information activities to raise market attention about PAPIRUS and the new building project

- market research and open market consultation (including a face-to-face market event with interested suppliers in Oslo). The market event was mostly attended by material suppliers, including small companies and some start-ups whose products were not yet on the market but in a prototype stage. Subsequently, there were one-on-one follow-up meetings with 14 interested suppliers to give them more detail and discuss their solutions.

Tender specifications were defined after the consultation process and based on insights from the market. However, the procuring authority noted that tender formulations were not heavily influenced by market feedback.

### 2. Definition of contract lots and functional requirements

Originally, the intention was to issue five lots but the open market consultation process revealed no interest or ability in the market to provide innovative solutions for thermal energy storage and natural lighting solutions. Hence, the procuring authority decided to define only three lots for the public tender. The tender documents were designed by two people from the legal department and three technicians from the procuring authority. The latter three had taken part in the open market event and conducted follow-up meetings. They were consequently responsible for defining the technical requirements of the tender.

The following three lots and their functional requirements were defined:

- **Lot 1:** Opaque envelope with reduced thickness and reduced energy demand
- **Lot 2:** Windows with reduced energy losses in winter and solar gains in summer
- **Lot 3:** Light-weight prefabricated internal partition with low specific $CO_2$ emission.

### 3. Supplier qualification: preselection criteria

A range of formal and minimum requirements were formulated and suppliers were preselected based on their provided documentation on the following aspects: organisational and legal position of the bidder (proof of legally established enterprise); tax and VAT certificate; economic and financial capacity of the bidder to execute the assignment (credit assessment/rating); technical and professional qualification for the assignment (proven by reference projects, sufficient manpower, quality assurance system/certification, implemented environmental management system); and proven capacity of other involved entities.

### 4. Award criteria

After the preselection, the most economically advantageous offer was meant to be determined for each contract lot among the remaining offers, based on award criteria (and subcriteria). The following broad award criteria were defined within the international PAPIRUS project and hence also used by Omsorgsbygg Oslo:

- Energy efficiency (indicators adjusted according to procured materials of each lot)
- Sustainability (global warming potential: $CO_2$ equivalent values throughout the lifecycle of used material)

- Installation and maintenance
- Economic criteria (i.e. purchase costs).

For Lot 3 (internal partition) the criterion 'energy efficiency' was substituted by more suitable criteria such as aesthetics and functionality/flexibility (thickness of walls, noise reduction).

## Evaluation of offers

The procuring authority received four offers for the three lots. Three of the offers applied for Lot 2 (windows) and one offer for Lot 3 (internal partition), but no offers were submitted for Lot 1 (opaque envelope). All offers were lacking the relevant documentation the procuring authority had asked for during the preselection stage. Mostly, bidders did not submit sufficient documentation about their companies' economic and financial capacity and/or technical and professional qualifications. These formal flaws made it impossible for the procuring authority to proceed with the final evaluation of offers. Consequently, no contract was awarded.

## Lessons learned

- **Novel supplier segment:** A recognised challenge of the procurement project was the unfamiliarity of interested suppliers with public procurement procedures. Most of the bidding material suppliers have never before submitted a tender to public authorities. Even though the procuring authority introduced interested suppliers to the tender requirements during the open market consultation process, it was not specifically stated which formal documentation was regarded as indispensable when supplying to the public sector and how to prepare an offer for a public tender. In retrospect, this appears to be an important aspect to be addressed if it is the objective to reach upstream supply-chain actors in the building sector who are not experienced in supplying to public customers directly. Altogether, it is a mutual learning process that also includes educating newly considered suppliers.
- **Narrow project scope:** The PAPIRUS project consortium set rather narrow objectives that limited the procuring authority's approach in Oslo: on the one hand, in terms of applied procurement procedures and contract type (predefined open procedure for awarding public supply contracts) and on the other hand, the objective to procure innovative materials for specific areas of application (needs were hence not project-specific but predefined to a certain degree). A broader functional approach to address the needs of a nursing home might have provided more offers from the market.
- **Time intensity of providing required documentation:** There were several potential suppliers that had shown interest during the pre-procurement phase but decided to not submit a tender because they had an extensive amount of assignments during that time. It would have been too time consuming for them to provide documentation and address defined performance indicators (award criteria). This provides a reason why the total number of participating bidders was rather low.

# Case study 8:

# Best Value procurement for building refurbishment in Eindhoven Municipality, Netherlands

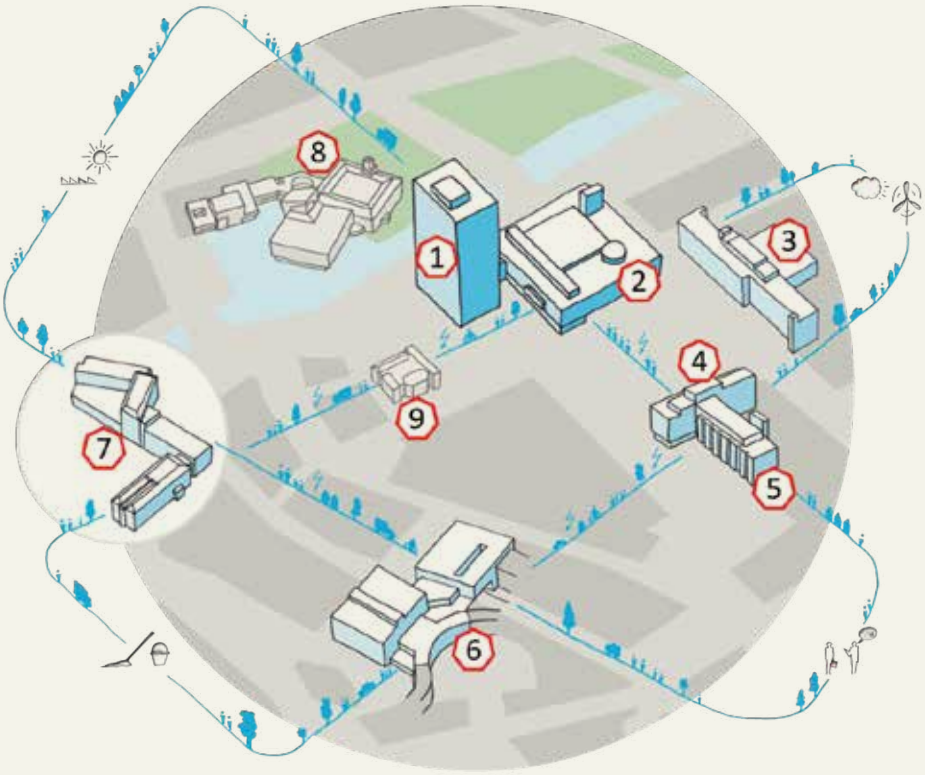
## Context: Material and service innovation for municipal buildings

Eindhoven Municipality is using public procurement to help reach the goal of making Eindhoven a sustainable, inspirational and energy-neutral city by 2045. To this end, the municipality, as a major property owner, recognised the importance of accelerating diffusion of sustainable and energy-efficient building solutions. The intention was to develop holistic building concepts that advance the management, maintenance and energy supply of several municipal buildings. To facilitate these objectives, Eindhoven Municipality joined the EU-funded project Smart Procurement European Alliance (SPEA) in 2012. The SPEA was meant to promote sustainability and innovation procurement in the building sector, with a focus on energy-saving innovations.

## Needs identification and definition of innovation

The need for the large-scale procurement of renovation works and energy management was identified after a small-scale procurement project for renovating the town hall tower was cancelled. By referring to Eindhoven's 2045 targets, the municipality's Buildings and Maintenance Department recognised the need to involve the market proactively to identify new material and service solutions for a larger-scale renovation of several municipal buildings.

**Figure 14: Project scope Eindhoven**




1. Town hall tower
2. Town hall
3. Stadskantoor
4. Herman Witthuis
5. Tio building
6. Mercado building
7. Municipal office building
8. Optional: Van Abbe Museum
9. Optional: Designhuis

Source: sustainablebuildings.eu/s/public/call_for_tenders/start

Furthermore, the municipality employed an elaborate definition of innovation that covered products, services and product-service combinations. The aim was to consider three types of innovations in the tender process:

- proven innovations that had already been tested in practice on a small scale and were commercially available
- promising innovations that were developed but have not yet been tested in practice and not yet launched on the market
- speculative innovations, i.e. inventions that need further development and can only be proven in the long term, necessitating a test environment during building operation.

## Procurement approach and procedural steps

The objective of wanting to implement different types of innovations in municipal buildings and to continuously develop further innovations throughout the operational phase suggested the application of the public procurement of innovation

(while also procuring future R&D services). In that regard, the competitive dialogue procedure was the most suitable procurement procedure given the complexity of the procuring authority's request, the large-scale but provisional project scope, as well as the undefined and largely intangible nature of (building) solutions which the procuring authority wanted. Therefore, predefining technical requirements and expected solutions were neither feasible nor intended. Dialogue with bidders and subsequent tender adjustments were necessary components throughout the procurement process to award a value-adding contract in the end.

The following steps were applied:

### 1. Pre-procurement activities

The municipality conducted several activities to prepare the tendering process:

- **Market research** about available innovative building solutions and their diffusion barriers. Insights to be applied for the intended procurement project comprised: applying a long-term perspective; following a collaborative approach between procuring authority and suppliers, and among suppliers; using a systems integration approach; and a greater project scope beyond a single building to facilitate the sustainability of city districts.
- **Informing the market** about procurement objectives and identifying innovative market solutions by asking suppliers to develop ideas (technologies, products, processes, conceptual ideas, methods) and sharing these on an online platform.
- **Sharing knowledge and forming supplier consortia.** Several events took place to facilitate knowledge exchange and consortia building among all interested suppliers. The consortia approach enabled SMEs to participate in the subsequent tender process despite their limited implementation capacity for huge projects.

### 2. Definition of functional requirements and tasks indicated in tender notice

The procuring authority did not prescribe any technical solutions, technical minimum requirements or technical specifications, service solutions or financial models. To the contrary, suppliers were expected to develop and provide innovative solutions in any direction that would maximise added value for the municipality in terms of the sustainability and energy efficiency of municipal buildings. Hence, only functional objectives and a range of tasks were defined for several buildings that needed to be addressed by offered solutions. By integrating these tasks, it was the procuring authority's intention to receive a complete business case in a single procurement scope, including renovation work and material solutions, energy management, maintenance, and facility management. Through this bundling and the long-term perspective, the procuring authority applied a total-cost-of-ownership approach, enabling the procurement of innovation and sustainability.

The contract term has been fixed at 10 years, with a possible extension of another five years. Moreover, the procuring authority formulated the option of additional investments during the contract period in case further innovations were developed by the contractor during the operational period.

### 3. Preselection of supplier consortia

Several criteria were defined to decide which suppliers would qualify to take part in the competitive dialogue stages. The preselection phase assessed minimum requirements (formal commercial registration, professional competencies, financial and economic capacity), technical and organisational skills, competency for system-based approaches and organisational flexibility for complex assignments. Altogether, 17 bidders submitted documentation for the preselection phase; 15 of them were consortia (representing 75 companies) and two were large enterprises.

### 4. Competitive dialogue stages

A two-step dialogue process took place with the objective of balancing supply and demand as effectively as possible in terms of legal-financial, organisational and technical solutions that address the functional requirements and listed tasks. The dialogue procedure ensured that bidding consortia knew what kind of information and documentation they needed to provide for the evaluation procedure. The best three candidates were invited to submit an offer.

The evaluation methodology and award criteria were based on the 'Best Value procurement' approach (see box below) to ensure selecting the offer that delivers the highest added value to the procuring authority. Four award criteria were defined:

- Scope of the offer (based on defined tasks) and its sustainability performance
- Opportunities for added value associated with the realisation of project objectives
- Identified risks that are beyond the contractor's power of influence and the quality of proposed control measures
- Measurable competencies (at the individual level: key personnel) of the proposed implementation consortia for project implementation and contract execution.

The authority defined further subcriteria to operationalise the evaluation procedure. Bidding consortia were expected to respond to the four award criteria by preparing an integral plan as part of their offer, comprising a solid business case (lifecycle cost perspective for all suggested solutions) that generates maximum value for money and hence provides, for a given budget, the highest possible added value for the procuring authority.

**A holistic procurement approach: Best Value procurement***

This procurement approach was developed by Dean Kashiwagi and is applied for the public procurement of innovation in the Netherlands. It consists of several systematic steps that are meant to identify the best-performing supplier available and to guide the project planning and execution for delivering best value to the procurer. Each step specifies responsibilities for the procuring authority and interested/selected supplier(s). The core components are as follows:

* For more details on Best Value procedure and an example for the assessment and scoring methodology (selection phase), see Heim (2015), Chapter 2 and Appendix I.

## 1 Preparation

**Procuring authority** – internal preparatory work prior to the procurement:

- Create a **common understanding of and support** for Best Value procurement and ensure **internal capacities** for its execution by selecting a responsible **steering actor** within the organisation and defining a **core execution team** as part of the procurement office.
- Integrate the procurement project into a **coherent strategic framework** of the procuring authority and establish Best Value procurement as the common procurement approach.
- Draft a tender notice and **tender guide**, including procurement structure, timeline, objectives, functional specifications and ceiling prices, as well as evaluation criteria and their weighting (priority on quality aspects, less focus on price; project scope not predefined).
- Publish a call for tenders / tender notice and initiate a first meeting with interested suppliers (prior to the official tendering process) that is used for presenting the Best Value approach and procedural aspects (facilitate suppliers' decision about their participation).

**Interested suppliers** – they only enter towards the end of the preparatory phase. However, Best Value procurement suggests preparatory measures for them as well:

- Awareness of core competencies and proactive formulation of their value proposition (substantiated by conducted performance measurements of delivered goods and/or services in past projects).
- Formulate a project-specific proposition in response to a call for tenders.

## 2 Selection

The selection phase is dedicated towards selecting the supplier that is best capable of achieving high performance and delivering project objectives within budgetary limits. The winning tenderer is invited to develop a detailed project plan.

**Procuring authority:** Responsible for providing suitable (anonymised) templates for project offers, designing a scoring model, preparing interviews, conducting the assessment after each selection stage, communicating the ranking decision and ensuring objectivity and transparency of the selection process.

**Participating suppliers:** Need to establish a core project team, gain understanding of the project and develop solutions for the defined procurer's needs/objectives, deliver appropriate documentation about offered solutions and performance, participate in the interview phase if invited (see 2.2. below).

The selection process consists of the following components:

### 2.1 Offers

Offers are submitted by interested suppliers in response to a call for tenders. The offers are anonymised and the following documents should be based on SMART principles (specific, measurable, ambitious, realistic, time bound):

- **Performance underpinning:** Offered solutions consist of deliverables, performance indication and proposition on how to achieve project objectives (envisioned project scope).
- **Risk dossier:** Identified risks (beyond the sphere of the supplier's influence) and supplier's mitigation strategy (gives information about the supplier's project guidance strategy, assumption of responsibilities and visionary qualities).
- **Opportunities dossier:** Opportunities promoted by the supplier that go beyond the procurer's minimum requirements to achieve project objectives and stay below the project budget. Each opportunity needs to be described by its impact on costs and the procedure.
- **Planning:** Project outline (critical activities), milestones and date of project handover.
- **Price offer:** Based on the content of the above documents, the price offer needs to fulfil several requirements such as being below the procurer's ceiling price, project objectives must be realisable within a minimal project scope, promoted risk mitigation efforts must be are included in the price (the price offer is not communicated to the procuring authority's core selection team prior to interviews – see next step).

### 2.2 Interviews

After receiving the offers, qualified suppliers are invited to the interview stage. Key actors (i.e. executing project staff) of each invited supplier demonstrate their competencies and understanding of the project and are asked to present (in a non-technical way) their vision, offered solutions and proposed performance.

### 2.3 Ranking and final selection of supplier (done in multiple stages)

- Predefined award criteria, their weighting and a numeric calculation model are applied.
- Scoring of submitted supplier documents (except price offer) with respect to the likelihood that project objectives will be achieved (only suppliers that pass this first assessment are invited to interviews).
- Scoring of performance during interviews.
- The achieved numeric scores during the two scoring stages are monetised according to a predefined scale and added to/deducted from each supplier's price offer.
- The supplier with the best offer (according to the above scoring model) is selected and qualifies for participating in the clarification and execution phases.

### 3 Clarification

**Procuring authority:** The role of the procuring authority is not to prescribe and steer how to implement the project but to highlight expectations and communicate concerns (project scope, risks and opportunities, objectives, etc.) and support the supplier where appropriate.

**Selected supplier:** The supplier is the implementation expert and takes the lead in this phase to develop a detailed project plan, provide a holistic and precise project view for the procurer, align expectations and justify technical details.

Several components are part of the clarification:

- **Kick-off:** Clarification of major components (no details yet) of the supplier's offer concerning project scope, assumptions concerning risks and opportunities, key planning steps, suggestions for KPIs (performance measurement and realisation of objectives).
- **Preparation phase:** A detailed plan for all project activities is developed, including a plan for performance measurement and verification (KPIs), a risk management plan, scoping of opportunities and initiation of a weekly report mechanism. Risk management responsibilities are established between the procurer and the supplier according to their capacity.
- **Award meeting:** Last clarification stage for contractual details and coordination of execution phase. Once everything is solved, the contract is awarded and hence the procurement phase is concluded.

### 4 Execution

Project execution and realisation of defined objectives are addressed in this final phase. Best Value principles require from the procuring authority and the executing supplier several responsibilities:

- **Procuring authority:** The authority is expected to focus on the project output and minimise the tendency to control the supplier's executing activities. Main activities comprise performance monitoring and the promotion of accountability and transparency.
- **Selected supplier:** The supplier remains the expert for executing the project plan and has to fulfil all responsibilities defined during the clarification phase while providing information on developed KPIs. Deviations from the defined planning steps and budget need to be identified and communicated.

To manage project execution and ensure transparency about performance and possible deviations from the project plan, weekly reports need to be provided by the supplier. These include:

- information on risks identified beforehand and progress on mitigation measures
- occurrence of unforeseen risks that are likely to have an impact on costs and/or date of handover
- root causes of risks and accompanying responsibilities
- desired adjustments to project plan and contract

## Award of contract

Applying the Best Value procurement approach for awarding the contract resulted in a significant distinction between the best and the second-best offer. Hence, it was not a difficult award decision for the procuring authority. The contract was awarded to the bidding consortium that was, on the one hand, the most ambitious, but on the other hand, had the most solid business plan and was assessed to be the best cooperating partner. The latter implies opportunities for the Buildings and Maintenance Department to integrate their expertise before the contractor designs and implements new solutions.

A performance-based framework contract was awarded to the winning consortium, built on an alliance structure for maximising sustainability in the long term and allowing ongoing innovation throughout a 10 (+5) year contract period. A range of innovative building solutions will be implemented by the consortium, comprising a state-of-the-art energy management system combined with a user-adjusted indoor climate-control system. Moreover, the consortium's offer includes an innovation management programme that accounts for creating future innovation. For that purpose, two floors of one municipal building are devoted to a living lab where the contractor will test new inventions.

Several key performance indicators were defined to monitor the contractor's performance. One indicator for contract monitoring assesses the ongoing innovation. Moreover, with respect to terms and conditions of the contract as well as its monitoring, three levels of agreement were defined:

- achievement of success factors (i.e. abstract aims)
- reference plan, referring to what the winning consortium offered to the municipality (renovation solutions, maintenance tasks, etc.)
- the supplying consortium needs to prove to the procuring authority that they have achieve what they offered
- if they do not achieve it, they must pay a financial fine. This fine will be invested in a sustainability fund for future municipal projects.

## Lessons learned

### Success factors

- Municipalities/procuring authorities need to have a certain competency (necessary competency framework / competency centre) within their organisation to manage a complex procurement process with several dialogue and evaluation stages. Small municipalities are less likely to manage such a process.
- Facilitating circumstance within Eindhoven Municipality for engaging in innovation procurement: there is a person on a higher decision-making level (city council) that is very progressive and keen to foster innovation, i.e. who will act as 'ambassador' for the project. Owing to the person's success, this project managed to remove scepticism towards innovation procurement.

- Pre-procurement activities and competitive dialogue procedure provided many incentives for cooperation and knowledge exchange among diverse suppliers, which advanced the process of generating innovative solutions.
- The project scope was not split up into separate lots because the intention was to facilitate the development of holistic solutions while still enabling SME participation through consortia.

### Barriers to innovation

- Tenders with high complexity require a high level of effort and time investment from both sides: procurer and interested suppliers.
- Public procurement in the building sector in general is usually project-focused or restricted to a single building. This makes it difficult to even consider more holistic solutions.
- Scepticism of innovation procurement at higher decision-making levels in municipalities.
- Separated departments with diverging objectives also hamper investments in innovation.
- Procurement law: It is difficult to integrate into a public tender a large financial buffer for potential investments that might become necessary during a contract period to spur continuous innovation by the chosen contractor, but that cannot be specified at the time of the call for tenders (i.e. integrating potential investments associated with precommercial procurement into a PPI tender, or allowing the option to start an Innovation Partnership with the contractor already chosen in the PPI tender). Rather, a new public tender needs to be issued each time a new invention is made by the contractor in order to allow new public investments for further R&D. But issuing a new public tender does not guarantee continuation of the original contractor's involvement in the project.

#### Benefits

- Pre-procurement activities and a consortia-building approach triggered the creation of novel ideas and systemic approaches.
- Competitive dialogue and sophisticated evaluation methodology (as part of Best Value procurement) enabled the selection of the most competent supplier consortium for the long-term contract.
- Innovation is emphasised and facilitated not only for directly procured solutions but also integrated into the operational phase of the contract.

#### Challenges

- Lengthy and human resources intensive tendering and evaluation process (only suitable for larger municipalities with sufficient capacities and competencies)
- Large project scope and long-term contract not separated into several lots but fulfilled by a single contractor (consortium): strong reliance on its abilities and continuous existence as well as need for strong contract management.

### Replicability in South Africa

- **Best Value procurement**: This procurement methodology has been applied in the City of Cape Town once. However, the challenge is to structure tendering and the award method in compliance with legal obligations in South Africa (see 'Award criteria and tender evaluation' under Case study 3. There is an ongoing debate as to whether the new 2017 PPPFA (revised Preferential Procurement regulations) can accommodate Best Value procurement.
- **Penalty system for contract management**: Performance incentive systems based on penalty payments for 'underperformance' are also applied in South Africa. However, the MFMA does not provide for mechanisms to ring fence the raised penalty payments for dedicated investments.
- **Provisions for innovation investments during contract period**: Determining financial provisions for future innovation investments during a long-term contract is currently not viable in South Africa since compliance with the three-year budget cycle is required. Instead, a long-term partnership is more promising while going through all the necessary statutory processes (PPP provisions in the MFMA give rise to relevant requirements).

# Case study 9:

# Procurement of innovative technologies and operational services for wastewater treatment in Limburg Province, Netherlands

## Context: Procurement of new sludge hydrolysis digestion plant and operational services

Waterschapsbedrijf Limburg (WBL) is a public utility company responsible for the transport and treatment of municipal and industrial wastewater and the treatment of sludge in the province of Limburg, Netherlands. The targets of WBL are to ensure good quality effluent levels of treated wastewater, an energy-efficient treatment process, and operation of the plant at the lowest cost possible.

## Needs identification

The installed technologies for sludge treatment at the facilities of WBL in Venlo (Limburg) were recognised to be inefficient and outdated. In 2008, WBL started to explore new technologies for sludge pretreatment and conducted laboratory testing. In cooperation with a small company, Sustec, a small-scale pilot plant for pretreating 200 litres of sludge was installed and different treatment options were applied. Thanks to positive performance results, the decision was taken to design a tender to procure an entirely new sludge hydrolysis digestion plant, including the proven technology for sludge pretreatment but also technologies for the subsequent treatment steps.

Early on, the procuring authority identified the need to procure services for operation and maintenance for the new plant owing to limited internal knowledge

**Figure 15: Wastewater treatment plant in Venlo**

Source: sustec.nl

and personnel capacities. Moreover, operational responsibility was recognised as a valuable mechanism to incentivise the solution provider to design and implement a high-quality, high-performing and economical solution. Hence, the interests of WBL and the solution provider were aligned. The general internal objective was to procure an integrated solution that would optimise effluent quality and be profitable within 10 years.

## Procurement approach and procedural steps

Except for the proven sludge pretreatment technology, the procuring authority decided to not predefine technological solutions but rather focus on the desired outcome of the sludge treatment process. The goal was to procure operation and maintenance services at the same time without knowing whether technology suppliers could provide these services. Dialogue during the procurement process was considered important to identify and design product-service-system solutions that would satisfy the needs of the procuring authority. The competitive dialogue procedure was applied to award a single contract for the design, construction, operation and maintenance of a new sludge hydrolysis digestion plant on site. The total investment volume was limited to €5,500 million and the respective service

contract for operation and maintenance was initially issued for six years plus the option of extending it twice for two years (max. 10 years).

The following procurement steps were applied:

### 1. Pre-procurement activities

Pre-procurement activities took place during the needs identification phase when the pilot plant for sludge pretreatment was tested. The procuring authority ensured transparency and equal treatment in the tender by sharing all relevant information and technological insights that were gained during the pilot phase at WBL's facilities. They also transparently communicated that a private company was involved in this pilot phase.

### 2. Definition of outcome specifications and award mechanism

An interdisciplinary team was set up to prepare the tender as well as key components of the desired service contract. The pilot testing provided grounds for technical specifications of the sludge pretreatment technology. These specifications were predefined in the tender documents. However, other necessary technical components of the envisioned sludge hydrolysis digestion plant were not predefined but interested solution providers were given room for technical innovation.

#### Outcome specifications

The desired technical solution had to fulfil all the necessary functions of a sludge treatment process, comprising thickening, hydrolysis, digestion, biogas utilisation and dewatering. Capabilities for operating and maintaining the plant were required, including requirements such as the permanent availability of the contractor. Beyond that, a range of relevant outcome performance parameters of the sludge treatment process was defined. Numeric values for these performance parameters had to be indicated by bidders, representing the outcome parameters of their suggested treatment solution. These values were not only used for the award decision but also as obligated benchmark parameters stipulated in the contract to hold the bidder responsible for his offer. This award approach set an incentive for bidders to provide correct information in their bids.

Table 10 provides an overview of the different KPIs and their relevance to the operational performance and profitability (cost/benefit factors as annual cash flow over the time-period of the contract) of the wastewater treatment process.

**Table 10: KPIs of sludge treatment process and cost implications**

| KPI (figures to be provided by the bidder) | Cost implications | Cost calculation |
|---|---|---|
| % dry solids (DS) degradation (assuming an organic matter content of 70,7%) | Higher % of DS degradation equals higher biogas production (i.e. energy profits) and reduced sludge volume at the end of the process (i.e. reduced disposal costs) | Sludge disposal (€) = tonnes dewatered sludge x sludge disposal cost (€/tonne) |
| % dry matter content of dewatered sludge (minimum 28,5%) | Higher % dry matter content after the process of sludge dewatering (using thermal hydrolysis and fermentation) equals less dewatered sludge to be disposed and less associated cost | Sludge disposal (€) = tonnes dewatered sludge x sludge disposal cost (€/tonne) |
| Energy yield (kWh/year) from biogas production, converted to heat and electricity through a combined heat and power system | The thermal hydrolysis sludge digestion plant both generates and consumes energy. The surplus of generated electricity is used directly for operating aeration compressors, pumps, mixers, etc. Each net produced kWh of electricity leads to a lower net energy purchase. | WBL's energy purchase rate is used (± €0,10/kWh) to monetise this criterion |
| Energy consumption of electricity (kWh/year) and natural gas ($Nm^3$) | This is split into electricity (used for electric motors) and gas (for steam boiler for heating of the sludge in the plant). Normally, biogas from the digestion plant is used instead of natural gas. | WBL's energy purchase rate is used (± €0,10/kWh) to monetise this criterion |
| Water consumption ($m^3$ figures for different qualities of water used on the plant must be provided, including effluent and drinking water) | Effluent is mainly used for cleaning activities and can be used for polymer preparation. This is free of charge for WBL as it produces effluent from the sewage treatment plant. Drinking water is used mainly for steam preparation (after softening) and can be used for cleaning and polymer preparation, too. | $m^3$ of effluent and drinking (quality) water consumption per tonne of dry solid. The latter is monetised by multiplying it by a standard rate for tap water (€/$m^3$) |

Source: GPP In Practice, 2014

Additional cost factors applied in the award phase for calculating the net present value (NPV) of each bid:

- Polymers used per year to neutralise electric charges in watery sludge
- Chemicals used per year to operate the thermal hydrolysis plant
- Costs for operation and maintenance (e.g. costs for measurements and analysis, labour, spare parts)
- Bidder's energy and water consumption figures for existing parts of the wastewater treatment plant because the existing consumption levels could be affected by the introduction of a new process component (hydrolysed and digested sludge have different viscosity/dewatering properties than raw untreated sludge).

## Award mechanism

By requesting from each bidder quantified values for the different KPIs and cost parameters described above, the procuring authority had all the relevant information to calculate all cost implications of each suggested solution (i.e. total cost of ownership). The NPV method was applied to determine the profitability of each bid.

This single financial figure allowed comparing offers objectively. The bidder with the highest NPV had the best business case and won the contract.

### 3. Supplier qualification: preselection phase

By the time WBL announced its procurement needs through a tender notice (January 2011), it was not aware of the number of suppliers on the market that were able and willing to serve defined needs. To only involve the most competent candidates in the dialogue phase, WBL conducted a preselection. This phase included an obligated field test for each interested candidate to demonstrate their technological solutions for sludge treatment. Moreover, candidates needed to submit documented evidence about their installation, operation and maintenance competencies (or support through subcontractors) as well as financial capacity for fulfilling contractual obligations. Four interested candidates proved satisfactory capabilities and were invited to participate in the competitive dialogue.

### 4. Competitive dialogue

Several rounds of dialogue were conducted with the four invited candidates. Questions raised at meetings and the respective answers were shared in writing with all bidders to ensure equal treatment, transparency and fair competition. The dialogue rounds were valuable to identify and define aspects for a viable contract (e.g. necessary contract length).

After excluding one candidate when the dialogue phase was concluded, three candidates were asked to hand in offers. One of these candidates was excluded early owing to severe formal flaws. The two remaining offers were assessed based on the defined performance criteria and their resulting NPV.

## Award of contract

The winning tenderer was a consortium of companies, with Sustec being the main contractor. Thanks to their small size, these companies cooperated with other companies which became subcontractors. The contractor integrated various innovative elements into its developed sludge treatment technologies. These involve a continuous steam process and a combined system of hydrolysis and digestion, resulting in an enhanced degradation of sludge compared to conventional digestion. Hence, biogas production is increased by 15–50% and utilised for the generation of heat and on-site electricity. Moreover, the new plant significantly reduced the amount of sludge being generated. Beyond technological innovation, the combined outsourcing of operation and maintenance to one party was also an innovative element that is usually not applied in the wastewater treatment sector.

The contract included a performance incentive system by stipulating financial bonuses and penalties based on KPI performance and defined deadlines for the achievement of performance levels after plant installation. The contractor is evaluated every year.

## Performance issues and contract modification

Despite the innovative elements of the treatment process, there were many technological problems and the contractor was not capable of meeting contractually stipulated performance targets for defined KPIs (see Table 10). After several penalty payments, it was obvious that the contractor could not achieve performance targets in the short run. Since WBL was interested in performance improvements to achieve a profitable plant operation and was itself still lacking the internal capacity to fix technological malfunctioning, both parties decided to adjust the contract. The new contract no longer held the contractor accountable for the initially stipulated KPI values but allowed him more short- and medium-term freedom to achieve satisfactory operational performance. The contractor was no longer required to pay excessive amounts in penalties but could rather invest in solutions that would improve the treatment performance. The new contract included the long-term objective of running a profitable sludge treatment plant within 10 years. Hence, financial KPIs were defined, a new financial penalty and bonus system was established coupled to the timetable for financial targets, and the contract was covered through bank guarantees provided by the contractor to minimise financial risks for the procuring authority. Moreover, the new contract was fixed for a period of 10 years to allow more planning certainty for the contractor.

## Lessons learned

### Success factors

- A change in focus of management personnel in public authorities is needed when approaching innovation procurement. They should not consider how to do things but should focus on what the result should be (i.e. clearly define your needs and desired outcomes).
- The dialogue procedure was valuable to understand the supplier's needs if they were to deliver material and service solutions (e.g. their need for long-term planning to build up internal human resource capacity to deliver operation and maintenance services to the procurer). According to the procurer, communication with the market at an early stage and dialogue during the procurement are necessary if innovation is being procured.
- When designing a contract, it is important to have a system for contract management in place in cases of non-compliance and poor performance on the part of the contractor. Likewise, communication and good relationship management between the contracting parties during the contract period are important to identify issues early, find possible solutions and install preventative measures.
- While focusing on monitoring outcome performance, the procuring authority needs to allow less direct control and instead give enough flexibility and decision-making responsibility to the contractor as he is the expert. This is especially true in sectors like wastewater treatment where the technological expertise of the developer is decisive for operational performance – in these cases it is rational to hand over operation and maintenance responsibility to the providing company. Since the focus of private companies is on profit, it is reasonable to hold the supplier responsible for the operational period as he would otherwise only focus on making the development and installation

period most profitable without caring about operational performance. Operational responsibility triggers a future-oriented focus during the solution-design phase and facilitates the supplier's continuous interest in operational excellence.

- Despite the operational responsibility of the supplier, it is a strong recommendation to aspire to relationship building and cooperation between the supplier and the procuring authority (co-design, co-manage). A cooperative approach facilitates learning for the procuring authority, decreases its long-term dependency on external service providers and also helps to identify and design need-based solutions.

### Innovation barriers

- Wastewater treatment is a very conservative sector that is not particularly interested in innovation and rather maintains traditional roles and market structure with respect to developing, installing and running technologies. Reinventing the market structure and considering responsibilities for other stages of a product's lifecycle than traditional responsibility can trigger innovation. But this is still not happening much.
- Innovation diffusion in the wastewater treatment sector is a challenge. The sludge content (resulting from private household waste and industrial waste) is context-specific. Hence, the sludge treatment technology and the chemical treatment need to be adjusted to the respective context – there are no 100% blueprint solutions that can be applied identically in all regions. Proven technology in one location might deliver suboptimal outcomes in another. Therefore it is challenging for suppliers to ensure that their technological treatment solutions will provide a certain KPI performance. Even if they do laboratory testing with sludge samples, treatment at plant-size level will always be more complex.
- This challenge is a strong reason for signing a service maintenance and operation contract with the technology provider, so that the procurer has no negative financial consequences from this uncertainty and potential miscalculations by the provider.
- This might be a reason for providers to not agree to a performance-based contract because it is difficult to predict and hence ensure performance levels, i.e. the risk to fail and pay penaltiesis high. Thus: contract modifications need to be possible.

### Benefits

- Competitive dialogue was valuable for both sides – the procuring authority and interested suppliers – to determine important elements of a complex and long-term contract (delivery of products and services).
- Sophisticated evaluation methodology integrated key parameters of a sludge treatment process but still made it possible to compare offers objectively based on a single financial figure.
- A product-service-system approach that includes the operational responsibility of the contractor keeps him liable for promised performance levels.

### Challenges

- The evaluation methodology could be flawed since the indicated performance of bidders might not be realisable at plant-size level (risk that not the bidder with the best capabilities is chosen but the one with the most optimistic prognosis).
- Dependency on contractor's ability to achieve promised performance levels since the procuring authority lacks internal (knowledge) capacities.

### Replicability in South Africa

**Consortium of contractors and subcontracting**: The revised Preferential Procurement regulations 2017 require organs of state to consider subcontracting at least 30% of the value of the contract to suppliers in specific target groups. The regulations are enabling partnerships and consortium structures. However, the City of Cape Town has experienced that a diversity of suppliers (based on consortium structure and/or subcontracting) being crucial for project/service/product delivery increases the risk of failure and aggravates contract management (especially in terms of public enforcement concerning adequate payments of subcontractors). Accordingly, a code of conduct that suggests practices for subcontracting to be followed by key contractors is currently being considered.

# REFERENCES AND FURTHER READING


BiomimicrySA (2016) Genius of SPACE: water treatment and waste upcycling for Langrug Informal Settlement, BiomimicrySA.co.za, biomimicrysa.co.za/genius-of-space

Casier, L (2015) Why infrastructure is key for the success of the SDGs, iisd.org/blog/why-infrastructure-key-success-sdgs

De Innovatiekoffer (n.d.) innovatiekoffer.nl

Drakenstein Municipality (2014) Drakenstein's Waste to Energy Project is Well on its Way, google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&cad=rja&uact=8&ved=0ahUKEwj2gpX750XQAhXJKyYKHRrWDU0QFggyMAM&url=http://www.drakenstein.gov.za/Administration/infrastructureservices/civilengineering/Documents/Solid Waste Services/WTE I

Drakenstein Municipality (2015) Waste to Energy – Proposed Waste Recovery, drakenstein.gov.za

EAFIP (n.d.) The EAFIP Toolkit Module 1, eafip.eu/toolkit/module-1

EAFIP (n.d.) The EAFIP Toolkit Module 2, eafip.eu/toolkit/module-2

EAFIP (n.d.) The EAFIP Toolkit Module 3, eafip.eu/toolkit/module-3

Economic Development Department South Africa (2011) New Growth Path, economic.gov.za/communications/publications/new-growth-path-series

EU (2014) Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement, eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex-%3A32014L0024

Global Green and Healthy Hospitals (2015) greenhospitals.net/gghh-announces-2015-award-winners-in-the-2020-health-care-climate-challenge

*GPP In practice* (2014) Issue No. 43 July 2014, ec.europa.eu/environment/gpp/pdf/news_alert/Issue43_Case_Study91_Limburg.pdf

GreenCape (2016) Waste Economy 2016 Market Intelligence Report, greencape.co.za/assets/GreenCape-Waste-MIR-2016.pdf

Heim, N (2015) Views to deal with the challenges of implementing Best Value: A study to provide guidelines to optimize the client – contractor relationship in the clarification and execution phase, Master's Thesis, Delf University of Technology, repository.tudelft.nl/islandora/object/uuid%3Ad22dde1f-278a-4d6b-8bc7-57f71d07db66

IISD (2014) iisd.org/sites/default/files/publications/implementing_spp_south_africa.pdf

IISD (2015) Implementing Sustainable Public Procurement in Latin America and the Caribbean, iisd.org/sites/default/files/publications/iisd-handbook-ingp-en.pdf

IISD (2017) iisd.org/library/leveraging-power-public-purse-using-public-procurement-low-carbon-innovation-sustainable

IISD (n.d.) SDG Knowledge Hub, sdg.iisd.org

Jan Palm Consulting Engineers (2008) Drakenstein Municipality Request for Proposals for the development of a waste to energy project at Drakenstein Municipality

Koppenjan, JFM (2014) Public-private partnerships for green infrastructures: Tensions and challenges, *Current Opinion in Environmental Sustainability*, 12:30–34, dx.doi.org/10.1016/j.cosust.2014.08.010

Kota, M (2017) Preferential Procurement, iol.co.za/business-report/opinion/preferential-procurement-8394551

National Planning Commission South Africa (2012) Our Future – Make it work, National Development Plan 2030, gov.za/sites/default/files/NDP-2030-Our-future-make-it-work_r.pdf

New Zealand Government (2013a) Constructive Market Engagement, A guide to engaging effectively with suppliers, sustainable-procurement.org/fileadmin/templates/sp_platform/lib/sp_platform_resources//tools/push_resource_file.php?uid=f4a98f97

New Zealand Government (2013b) How competitive dialogue works in New Zealand, procurement.govt.nz/procurement/pdf-library/agencies/guides-and-tools/competitive-dialogue.pdf

OECD (2015) Recommendation on Public Procurement, slideshare.net/OECD-GOV/oecd-recommendation-on-public-procurement2015

OECD (2017) *Public Procurement for Innovation: Good Practices and Strategies*, OECD Publishing, Paris, dx.doi.org/10.1787/9789264265820-en

Perera, O & Turley, L (2014) Implementing Sustainable Public Procurement in South Africa: Where to start, iisd.org/sites/default/files/publications/implementing_spp_south_africa.pdf

Resource Management Services (2015) Proposed Waste Recovery, Beneficiation and Energy Project, Drakenstein Municipality: Final Scoping Report, drakenstein.gov.za/Administration/CommunityServices/WasteToEnergy/Pages/Final_Scoping_Report.aspx

SPP regions (2017a) Market Engagement. Best Practice Report, sppregions.eu/fileadmin/user_upload/Resources/Market_Engagement_Best_Practice_Report.pdf

SPP regions (2017b) Performance/Output Based Specifications. Best Practice Report, sppregions.eu/fileadmin/user_upload/Resources/POBS_Best_Practice_Report.pdf

Stellenbosch Municipality (2014) Berg River Improvement Plan: Projects within Stellenbosch Municipality

Technical Assistance Unit and Western Cape Government (2014) Increasing investment in climate change related projects at the sub national level

Turley, L, Hug Silva, M, Benson, S & Dominguez, C (2014) Performance-Based Specifications: Exploring when they work and why, iisd.org/sites/default/files/publications/performance-based-speculations-exploring-when-they-work-and-why.pdf

UN (n.d.) Sustainable Development Goals, un.org/sustainabledevelopment/development-agenda

UNEP. UN Environment (2011) Towards a green economy, Pathways to Sustainable Development and Poverty Eradication, web.unep.org/greeneconomy/sites/unep.org.greeneconomy/files/field/image/green_economyreport_final_dec2011.pdf

UNEP. UN Environment (2012) Sustainable Public Procurement Implementation Guidelines, Introducing UNEP's Approach, scpclearinghouse.org/sites/default/files/sustainable_public_procurement_implementation_guidelines.pdf

UNEP. UN Environment (2014) web.unep.org/ourplanet/may-2015/unep-publications/united-nations-environment-programme-annual-report-2014

UNEP. UN Environment (2015) Using Product-Service Systems to Enhance Sustainable Public Procurement, Technical Report, staging.unep.org/10yfp/Portals/50150/10YFP%20SPP/3A_Technical%20report.pdf

USTDA (2016) USTDA Supports South African Waste-to-Energy Project, ustda.gov/news/press-releases/2016/ustda-supports-south-african-waste-energy-project

Uyarra, E, Edler, J, Garcia-Estevez, J, Georghiou, L & Yeow, J (2014) Barriers to innovation through public procurement: A supplier perspective, *Technovation* 34:631–645, ac.els-cdn.com/S0166497214000388/1-s2.0-S0166497214000388-main.pdf?_tid=c8ed-7cde-c878-11e7-9966-00000aacb361&acdnat=1510580855_0072c862703d75d54adb0db-289003be7

Van Aarde (2016) Workshop SPP. Legal Challenges, presentation by Sanet van Aarde on 22 November 2016

WCG. Western Cape Government (2013) Green Economy Strategy Framework 2013, westerncape.gov.za/assets/departments/transport-public-works/Documents/green_is_smart-4th_july_2013_for_web.pdf

WCG. Western Cape Government (2014) Provincial Strategic Plan 2014–2019, westerncape.gov.za/text/2015/October/western_cape_provincial_strategic_plan_2014-2019.pdf

WCG. Western Cape Government (2015) Environmental Management Framework for the Drakenstein Municipal Area, westerncape.gov.za/eadp/news/drakenstein-environmental-management-framework-2015

WCG. Western Cape Government Provincial Treasury (2014) Provincial Economic Review and Outlook 2014, westerncape.gov.za/assets/departments/treasury/Documents/2014_pero_printers_2_october_2014_version_4_final_with_amendm.pdf

WCG. Western Cape Government Provincial Treasury (2016) Provincial Economic Review and Outlook 2016, westerncape.gov.za/assets/departments/treasury/Documents/Research-and-Report/2016/2016_pero_to_printers_23_september_2016_final.pdf

WCG DEA&DP. Western Cape Government Department of Environmental Affairs and Development Planning (2014) Western Cape Government Green Economy Report 2014, westerncape.gov.za/110green/files/documents/WCG%20Green%20Economy%20Report%202014_0.pdf

WEF (2017) Global Risks Report 2017, weforum.org/reports/the-global-risks-report-2017

World Bank (2016) New Procurement Framework and Regulations, worldbank.org/en/projects-operations/products-and-services/brief/procurement-new-framework

**Legislation**

Electricity Regulation Act 4 of 2006, nsw.gov.au/sites/default/files/Government_Gazette_2_December.pdf#page=15

Electricity Regulation Act, 2006 Amendment of the Electricty Regulations on New Generation Capacity, 2011, *Government Gazette*, 419(38801), energy.gov.za/files/policies/Amendment-of-Electricity-Regulations-on-New-Generation-Capacity.pdf

Local Government: Municipal Finance Management Act 56 of 2003, energy.gov.za/files/policies/act_municipalfinancemanagement_56of2003_2004.pdf

Preferential Procurement Policy Framework Act 5 of 2000, parliament.gov.za/storage/app/media/BidDocuments/PPPFA.doc

Preferential Procurement Regulations, 2001, parliament.gov.za/storage/app/media/BidDocuments/PPPFA.doc

Public Finance Management Act 1 of 1999, treasury.gov.za/legislation/pfma

# WWF South Africa

WWF MOVING TOWARDS SUSTAINABLE PERFORMANCE-BASED PROCUREMENT IN THE WESTERN CAPE

ZA WWF.ORG.ZA

**Why we are here**

To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

wwf.org.za/energy

© 1986 Panda Symbol WWF-World Wide Fund for Nature (Formerly World Wildlife Fund)

® "WWF" is a WWF Registered Trademark. WWF, Avenue du Mont-Blanc, 1196 Gland, Switzerland – Tel. +41 22 364 9111 Fax +41 22 364 0332. For contact details and further information, please visit our international website at **wwf.panda.org**