

STUDY REPORT:

*ASSESSMENT OF APPROPRIATE SERVICE DELIVERY MECHANISMS
FOR A WASTE TO ENERGY (WTE) PROJECT & RELATED
INFRASTRUCTURE IN DRAKENSTEIN*

PART 1:

SECTION 78(1) INTERNAL ASSESSMENT FOR MUNICIPAL SERVICES AND ACTIVITIES LINKED TO THE WTE PROJECT

(In part fulfilment of section 78 of the Municipal Systems Act and Section 120 of the Municipal
Finance Management Act)

Prepared and Submitted by JPCE
JUNE 2012

Revised to include Comments:

...



JPCE

TRANSACTION ADVISORS:

JAN PALM CONSULTING ENGINEERS

PO BOX 931 BRACKENFELL 7561
60 BRACKEN STREET
PROTEA HEIGHTS
BRACKENFELL 7560
TEL + (27) 021 982-6570
FAX + (27) 021 981-0868

Jan Palm : JanPalm@jpce.co.za

Anita Botha : anita@pams.co.za

EXECUTIVE SUMMARY

TERMS OF REFERENCE

The Drakenstein Local Municipality (“DLM”) is mandated to give effect to national, provincial and local waste strategies and objectives. The strategic objective to reduce waste to landfill including waste avoidance, minimisation and recycling goals is firmly embedded in the Integrated Waste Management Plan (the “IWMP”) of the Municipality but the Municipality realised that more effective measures are needed to significantly reduce waste to landfill given that the Municipality’s only permitted landfill will reach its capacity in 2016. The Municipality thus embraced the drive to procure alternative technologies to reduce waste to landfill linked to the generation of renewable energy from municipal solid waste and the development of a project that can access the carbon credits trading market.

In December 2008 the Municipality embarked on a Request for Proposals (“RFP”) process to procure a private sector partner that has assessed and confirmed the feasibility of a Waste to Energy (“WTE”) facility and has the financial, technical and operational resources to establish a WTE facility. The procurement process commenced with eight prospective bidders, shortlisted four to do feasibility studies at risk and own cost and culminated in the signing of a Memorandum of Agreement (“MOA”) with a preferred bidder, the aim being to commit to the establishment of the WTE project subject to the successful completion of statutory processes.

One of these statutory processes include the completion of what is termed a Section 78 feasibility study by the Municipality in accordance with the Local Government: Municipal Systems Act, 32 of 2000 (the “MSA”) to enable the Municipality to assess the WTE project’s feasibility from its own perspective, the important criteria being: is the project in line with the Municipality’s Integrated Development Plan (“IDP”) and its IWMP; would it have been possible for the Municipality to establish the WTE facility and related infrastructure with own resources and capacity; is the project affordable; does it transfer substantial risk to the private party and does it provide value for money.

This report is the result of the first part of the required municipal feasibility study, i.e. the Section 78(1) Assessment Report focused on laying the foundation for an affordability, risk and value assessment of the WTE project. The process also includes various consultative responsibilities and the final feasibility study will be submitted to the Council for approval after solicitation of the views and recommendations of relevant state departments and taking such into account. Successful completion of the feasibility study will culminate in the conclusion of contractual arrangements between the Municipality and a WTE Operational Entity.

S.78(1) FINDINGS

The report arrived at the following conclusions:

1. That the WTE project was aligned with national, provincial and local strategies and plans (including the IDP and IWMP of the Municipality) to minimise waste to landfill, ensuring current landfills are operated in accordance with permit requirements and reducing the carbon footprint of municipalities.
2. That the WTE project would be specifically beneficial to the Municipality given that it has the potential to maximise the already limited lifespan of its Wellington Landfill by reducing waste to landfill with more than 60%; generate an estimated 20,176MWh/annum of nett energy which will be available to the Municipality through the Renewable Energy Feed-in-Tariff (the “REFIT”) programme; create at least 116 permanent jobs and substantially boost the recycling activities of the Municipality.

3. *That the Municipality did not have the current capital resources nor the human expertise, skills or capacity to establish a WTE facility based on an estimated R146m capital investment cost for the current best suited technology option; did not budget for the required plant and machinery for the WTE facility or for the more effective operation of the Wellington Landfill and thus cannot commit the required human or financial investment needed for the WTE project to succeed.*
4. *That the preferred bidder for the WTE facility had the necessary financial credibility, technical expertise and operational skills to finance, construct, commission, own and operate the WTE plant and also operate the existing waste treatment and disposal services of the Municipality in a Public Private Partnership (“PPP”) with the Municipality.*
5. *That the operation of the Wellington Landfill, the Paarl Transfer Station (the “Paarl TS”), the Paarl Material Recovery Facility (the “Paarl MRF”) and possibly also the waste haulage from the Paarl TS to the Wellington Landfill be included with the WTE project for the following reasons:*
 - *enabling the WTE operator to implement a combination of technologies best suited to achieve an integrated waste management solution;*
 - *upgrading of the operation of the landfill to ensure a maximisation of its lifespan;*
 - *enabling synergy in respect of waste treatment and disposal activities; and*
 - *establishing a one-stop contractual accountability which is easier to manage.*
6. *That there was sufficient uncertainty about the in/direct costs vis-a-vis benefits of the current collection of waste separated at source to further investigate the impact of this method inter alia by doing a comparative analysis with other practices, e.g. post collection separation, in similar Western Cape towns’ enabling a decision to be taken on the feasibility of source separated vis-à-vis post collection separated waste before the mechanism and/or method of collection of recyclables is further considered. The feasibility of community recycling pickup points or centres should be included in this assessment.*
7. *That the WTE preferred bidder must complete a thorough analysis of the waste volumes, composition and calorific values to arrive at a more reliable and accurate dataset, final best suited technology decision and detailed financial modelling to proceed with the WTE project and enable the Municipality to establish the feasibility of the WTE project from its perspective.*
8. *That organised labour preferred deployment of the plus minus 14 affected employees rather than to see them transferred to the WTE Operational Entity. This should not be a problem but individual employees must be allowed to decide between deployment and transfer and if the latter was chosen be assisted by the Municipality in accordance with labour legislation.*

S.78(1) RECOMMENDATIONS

Based on these findings, the Section 78(1) Assessment Report put forth the following recommendations:

1. *That the Municipal Manager authorise the transaction advisers to proceed with a Section 78(3)/120(4) Feasibility Study in accordance with the provisions of section 78(3)(b) of the MSA and following the prescribed procedure as provided for in the MSA, Section 120(4) of the Local Government: Municipal Finance Management Act, 56 of 2003 (the “MFMA”) and the Municipal Public-Private Partnership Regulations, 2005 (the “PPP Regulations”) inclusive of the prescribed consultation processes and to submit for Council approval a Consolidated Feasibility Study Report including specific recommendations regarding the preferred WTE technologies, contractual arrangements and timeframes of the WTE project.*
2. *That the transaction advisers be authorised to proceed with a funding application to National Treasury including a waste tariff review; a comparative analysis of the feasibility of source separated vis-à-vis post collection separated recyclable waste including the feasibility of*

community recycling pickup points or centres and the transaction advisor cost for all phases of the project.

3. *That the preferred bidder be instructed to immediately proceed with its processes including a waste licence application, an Environmental Impact Assessment (“EIA”), a full waste volume and composition assessment and a calorific analysis to have a reliable and accurate dataset as basis for the WTE project and the preferred bidder further be requested to submit a revised technology option analysis including detailed financial modelling and proposed timeframes to the Municipality.*
4. *That the Directorate Infrastructure and Planning establishes a Project or Process Steering Committee (“PSC”) representative of all legally designated and relevant role-players, e.g. National Treasury (“NT”), Provincial Treasury (“PT”), the provincial Department of Environmental Affairs and Development Planning (the “DEA&DP”), the Department of Co-operative Governance and Traditional Affairs (“COGTA”), Eskom, etc., which PSC would meet on a quarterly basis with its terms of reference being to observe, advise and facilitate, e.g. funding of the project and speeding up statutory authorisation processes.*
5. *That the Directorate Infrastructure and Planning establishes a Transaction Steering Committee (“TSC”) consisting of key role-players of the Municipality, the preferred WTE bidder / WTE Operational Entity and the transaction advisers which TSC would meet on a bi-monthly basis and commence its task by agreeing on an Implementation Plan for the WTE project including an Authorisations’ Map and a Contracts’ Map to enable it to systematically champion the project through an updated feasibility study; the statutory approval processes (both parties responsible for its own but assisting each other where necessary); contract negotiations; contracts’ conclusion; the roll-out of the project and initial contracts’ monitoring and management.*

TABLE OF CONTENTS

	Page no.
EXECUTIVE SUMMARY	2
TERMS OF REFERENCE	2
S.78(1) FINDINGS.....	2
S.78(1) RECOMMENDATIONS	3
TABLE OF CONTENTS.....	5
PROJECT PURPOSE AND PROCESS	15
1. Introduction	15
2. Purpose and Background of the Project	15
2.1 Waste Objective.....	15
2.2 Regulatory Environment.....	15
2.3 Pre-determination of the Feasibility of the WTE Project	17
3. Methodology of the Study	18
4. Transaction Advisors	19
SECTION 1: SITUATIONAL & NEEDS ASSESSMENT	20
1. Study Area.....	20
1.1 Socio-economic Profile	20
2. Alignment of the Study Project.....	22
2.1 Strategic and Institutional Alignment.....	23
2.2 Functional Alignment.....	25
3. Legal and Policy Environment	26
3.1 Constitutional Mandate.....	26
3.2 Municipal Legislation	27
3.2.1 Local Government: Municipal Structures Act, 1998	27
3.2.2 Local Government: Municipal Systems Act, 32 of 2000	27
3.2.3 Local Government: Municipal Finance Management Act, 56 of 2003 & Regulations	29
3.3 Environmental and Waste Related Legislation, Policies and Plans	32
3.3.1 White Paper on Integrated Pollution and Waste Management, 2000	32
3.3.2 National Environmental Management: Waste Act, No. 59 of 2008	32
3.3.3 National Waste Management Strategy	33
3.3.4 Western Cape's Draft Strategic Plan, 2010.....	34
3.3.5 Western Cape Provincial Spatial Development Framework, 2005	34
3.3.6 Municipal Waste Sector Plan, 2011	35
3.3.7 National Environmental Management Act, 107 of 1998 (as amended in 2004)	35
3.3.8 National Environmental Management Air Quality Act, 39 of 2004	36

3.3.9 National Policy on Thermal Treatment of General and Hazardous Waste, 2009 36

3.3.10 Environment Conservation Act, 73 of 1989 37

3.3.11 Hazardous Substances Act, 15 of 1973 37

3.3.12 Western Cape Health Care Waste Management Act, 7 of 2007 & Regulations 37

3.3.13 Other relevant National Standards, Regulations, Notices 37

3.4 Energy Legislation, Policies and Plans 38

3.4.1 White Paper on Renewable Energy Policy, 2003 38

3.4.2 National Energy Regulator Act, 40 of 2004 38

3.4.3 Electricity Regulation Act, 4 of 2006 38

3.4.4 National Energy Act, 34 of 2008 39

3.4.5 Western Cape Draft White Paper on Sustainable Energy, 2009 39

3.4.6 Electricity Regulations on New Generation Capacity, 2011 39

3.4.7 Renewable Energy Feed-in Tariff Programme and the Integrated Resource Plan 40

3.4.8 Independent System and Market Operator Bill, 2012 41

3.4.9 Working for Energy 42

3.5 Climate Change Policy and Planning Perspectives 42

3.5.1 National Climate Change Response White Paper, 2011 42

3.5.2 UNFCCC Conference of the Parties 43

3.6 Clean Development Mechanism 43

3.6.1 Carbon Trading 43

3.6.2 CDM Process 44

3.6.3 Status of the CDM 47

3.7 Proposed Carbon Tax 47

3.8 Health and Safety 47

3.8.1 National Health Act, 61 of 2003 47

3.8.2 Occupational Health and Safety Act, 85 of 1993 & Regulations 48

3.9 Human Resources 48

3.9.1 Focus on Job Creation 48

3.10 Other Relevant Legislation and Policies 49

3.10.1 National Water Act, 36 of 1998 49

3.10.2 Consumer Protection Act, 60 of 2008 49

3.11 Drakenstein By-laws and Policies 49

3.11.1 Energy & Electricity Supply 49

3.11.2 Environment & Waste 49

3.11.3 Land & Bulk Services 50

3.12 Alignment of the WTE Project 50

4. Nature and Coverage of Waste Service 51

4.1	Waste Volumes and Composition	51
4.2	Waste Collection.....	54
4.2.1	Collection of Waste Separated-at-Source.....	56
4.3	Waste Cleaning.....	57
4.3.1	Clean Green Project	58
4.4	Waste Treatment and Disposal	58
4.4.1	Paarl Transfer Station & Material Recovery Facility	59
4.4.2	Wellington Landfill Site	60
4.4.3	Transporting of Waste from Paarl Transfer Station to the Wellington Landfill Site	64
4.5	Waste Reduction	65
4.5.1	Recovery and Recycling	65
4.5.2	Composting.....	66
4.6	Waste Characteristics	67
5.	Project Focus.....	67
6.	Project Relevance.....	67
7.	Complexity of the Project	68
8.	Municipal Capacity Base	68
9.	External Capacity Base	70
10.	Community Expectations	70
11.	Financial Considerations	71
11.1	Financial Performance.....	71
11.1.1	Cash Flow.....	71
11.1.2	Debts.....	71
11.1.3	Loans.....	72
11.1.4	Investments	72
11.1.5	Assets and Liabilities	72
11.1.6	Financial Risk Management	73
11.1.7	Cost Recovery	73
11.1.8	Performance Management.....	73
11.2	Budget Analysis.....	73
11.2.1	Revenue and Expenditure.....	73
11.2.2	Waste Services Budget Analysis.....	74
11.2.3	Waste Services Tariff Structure	76
11.2.4	Additional Budget Requirements i.r.o. Waste Services	77
11.3	Financial and Service Delivery Realities.....	77
11.4	Expected Financial Benefit.....	78
11.4.1	Cost Avoidance	79

- 12. Institutional Commitment and Capacity 79
- 12.1 Project Officer and Team 79
- 12.2 Transaction Advisors 80
- 12.3 Capacity and Continuity of Key Role Players 80
- 12.4 Key Stakeholders 81
- 12.5 Consultation Plan 82
- 12.5.1 Community 82
- 12.5.2 Organised Labour 82
- 12.5.3 National and Provincial Government 83
- 13. Output Specifications 83
- 13.1 Service and Performance Outputs 83
- 13.2 Collection of Waste and Waste separated at Source 84
- 13.3 Waste Haulage 86
- 13.4 Waste Treatment and Disposal 86
- 13.5 Waste To Energy Facility and Operations 89
- 14. Project Scope 89
- SECTION 2: PRELIMINARY SOLUTION OPTIONS ANALYSIS 91
- 1. Municipal Services and Activities Considered 91
- 2. Technical Options Analysis 91
- 2.1 Material Recovery Facility 92
- 2.2 Structured Landfill Cells with Electricity Generation 93
- 2.3 Gasification/Pyrolysis with Electricity Generation 93
- 2.4 Landfill Gas Extraction 93
- 2.5 Integrated Waste Management System 94
- 2.5.1 Treated Wastewater Sludge 94
- 2.6 Project Deliverables (Options) 94
- 2.6.1 Option 1: MRF with tailings to the Wellington Landfill 94
- 2.6.2 Option 2: MRF with SLFC with Electricity generation 95
- 2.6.3 Option 3: MRF and Clean Pyrolysis with Electricity generation 95
- 2.6.4 Option 4: LFG Extraction with Electricity generation 95
- 2.6.5 Option 5: Integrated Waste Management 95
- 2.7 Economic and Financial Feasibility 95
- 3. Service Delivery Mechanism Options 96
- 4. Assessment of Mechanisms and Project Impact 97
- 4.1 Direct and Indirect Costs and Benefits 97

4.2 Impact on the Environment, Health and Safety and Human Well-being 98

4.3 Skills, Expertise and Resources 99

4.4 Development, Job Creation and Employment..... 100

4.5 Organised Labour..... 100

4.6 Some Trends in the Provision of Municipal Services 100

5. WTE Suitable External Delivery Mechanism 101

5.1 Long Term Scenario 103

5.2 Private Institution, Entity or Person 103

6 External Service Delivery Agreements 103

6.1 Service Contract..... 104

6.2 Management Contract 104

6.3 Lease Contract 104

6.4 Concession 104

6.5 Privatisation / Divestiture 105

7 WTE Contractual Arrangements 105

7.1 Capital and Operational Contracts 105

7.2 Energy Related Contracts 105

7.3 Carbon Credit Trading Agreements 106

7.4 Primary Criteria and Objectives..... 106

7.5 Project Implementation..... 107

8 Principles Applicable to All External Service Delivery Mechanism Agreements..... 107

8.1 Legal Compliance 108

8.2 Selection and Procurement Process 108

8.3 Contract Management and Monitoring..... 108

8.4 Support for Policies of Council..... 108

SECTION 3: PRELIMINARY SERVICE DELIVERY MECHANISM CONCLUSION & RECOMMENDATIONS..... 109

1. Conclusion..... 109

2. Recommendations 110



LIST OF TABLES

Table 1	Indigent Households within Drakenstein (source: AR ²⁰¹⁰⁻²⁰¹¹)
Table 2	Free Basic Services to Indigent Households within Drakenstein (source: AR ²⁰¹⁰⁻¹¹)
Table 3	Governance iro solid waste (Source: DEAT, 2007)
Table 4	REFIT/REBID Tariff Adjustments
Table 5	Waste Volumes in Drakenstein, 2005 (Source: WTE RFP document)
Table 6	Waste Composition of Drakenstein, 2009/2010 (Source: EFS ²⁰¹⁰)
Table 7	Cleansing Services Production Summary, 2011 (Source: Annual Report ²⁰¹⁰⁻²⁰¹¹)
Table 8	Cleansing Services (Source: JPCE Monthly Audit Report ²⁰¹¹⁻²⁰¹²)
Table 9	Cleansing Services Production Summary, 2011 (Source: Annual Report ²⁰¹⁰⁻²⁰¹¹)
Table 10	Cleansing Services (Source: JPCE Monthly Audit Report ²⁰¹¹⁻²⁰¹²)
Table 11	Refuse Removal Service Delivery Levels (Source: Annual Report ²⁰¹⁰⁻¹¹)
Table 12	Refuse Removal Services (Source: Annual Report ²⁰¹⁰⁻¹¹)
Table 13	Refuse Removal Services (Source: JPCE Monthly Audit Report ²⁰¹¹⁻²⁰¹²)
Table 14	Cleaning Services (Source: Annual Report ²⁰¹⁰⁻¹¹)
Table 15	Cleaning Services (Source: JPCE Monthly Audit Report ²⁰¹¹⁻²⁰¹²)
Table 16	Plant needed for Wellington Landfill
Table 17	Recoverable Waste (Sources: EFS ²⁰¹⁰ ; IWMP ²⁰⁰⁹ and MRF ²⁰¹¹)
Table 18	Recycling & MRF Figures (Source: JPCE)
Table 19	Solid Waste Staff employed at the Wellington Landfill and the Paarl Transfer Station (Source: DLM)
Table 20	Liquidity Ratio (Source: AR ²⁰¹⁰⁻¹¹)
Table 21	Gross Outstanding Debtors per Service (Source: AR ²⁰¹⁰⁻¹¹)
Table 22	Debtors Age Analysis (Source: AR ²⁰¹⁰⁻¹¹)
Table 23	Long Term Loans (Source: AR ²⁰¹⁰⁻¹¹)
Table 24	Drakenstein Revenue/Expenditure Comparison (Source: AR ²⁰¹⁰⁻¹¹)
Table 25	Sources of Revenue (Source: AR ²⁰¹⁰⁻¹¹)
Table 26	Repairs and Maintenance Spending (Source: AR ²⁰¹⁰⁻¹¹)
Table 27	Revenue/Expenditure Comparison for Waste (Source: AR ²⁰¹⁰⁻¹¹)
Table 28	Waste Management: Operating Budget (Source: DLM)
Table 29	Waste Management: 3 Year Operating Budget (Source: DLM)
Table 30	Waste Management: Capital Budget (Source: DLM)
Table 31	Tariff Increases (Source: DLM MTREF 2011-2014)
Table 32	Solid Waste Tariffs 2011-2012 (Source: DLM)
Table 33	Summary of Estimated Landfill Rehabilitation Costs (Source: DLM)
Table 34	Assumptions i.r.o. Cost (Source: JPCE Evaluation Report of WTE Bids)
Table 35	Total Estimated Cost to Municipality over 20 years and its Net Present Value (“NPV”) (Source: JPCE Evaluation Report of WTE Bids)
Table 36	Avoided Costs (Source: JPCE Evaluation Report of WTE Bids)
Table 37	Key Role-players in Section 78 Process
Table 38	List of Key Indicators and Unit Costs to be used to rate Waste Collection Performance
Table 39	Project Deliverables (Source: EFS ²⁰¹⁰)
Table 40	Economic Feasibility – Assumed Data for Financial Modelling (Source: EFS ²⁰¹⁰)
Table 41	Projected Financials (Source: EFS ²⁰¹⁰)
Table 42	Characteristics of External Service Delivery Mechanisms

LIST OF FIGURES

Figure 1	Map of Drakenstein (source: IWMP ²⁰⁰⁹)
Figure 2	Waste Hierarchy (Source: NWMS)

LIST OF DIAGRAMS

Diagram 1	CDM Project Cycle (Source: UNFCCC CDM)
Diagram 2	NDA CDM Project Approval Cycle (Source: DoE)
Diagram 3	MSW Treatment for Recovery and Recycling Processes (Source: EFS ²⁰¹⁰)
Diagram 4	Integrated Waste Treatment and Disposal Solution (Source: EFS ²⁰¹⁰)
Diagram 5	External Service Delivery Mechanism Options

LIST OF GRAPHS

Graph 1	CDM Baseline Concept (Source: DoE)
Graph 2	General Waste Composition of Drakenstein, 2009 (Source: IWMP ²⁰⁰⁹)
Graph 3	Overview of "Wellington Landfill (Source: JPCE Audit ²⁰¹⁰)"
Graph 4	Composition of Recyclables (Sources: JPCE)
Graph 5	Costs and Impact of the WTE Project (Source: JPCE Evaluation Report of WTE Bids)

LIST OF ANNEXURES

Annexure 1	Council Resolution to approve the WTE Project and mandate commencement of statutory processes
Annexure 2	Letter to National Treasury dated 10/07/2011 for registration of the project
Annexure 3	Letter from National Treasury in acceptance of registration
Annexure 4	Organised Labour Meeting Minutes dated 7&8/03/2012
Annexure 5	Signed Memorandum of Agreement with Interwaste

LIST OF ACRONYMS

AD	-	ANAEROBIC DIGESTION
ADT	-	ANAEROBIC DIGESTION TECHNOLOGY
AR	-	ANNUAL REPORT
BOO	-	BUILD, OWN AND OPERATE
BOOT	-	BUILD, OWN, OPERATE AND TRANSFER
BRR	-	BASIC REFUSE REMOVAL
BSL	-	BULK SERVICES LEVIES
CA	-	COLLECTION AGREEMENT
CAPEX	-	CAPITAL EXPENDITURE
CBO	-	COMMUNITY-BASED ORGANISATION
CCCR	-	CARBONN CITIES CLIMATE REGISTER
CDI	-	CITY DEVELOPMENT INDEX
CDM	-	CLEAN DEVELOPMENT MECHANISM
CDM-DOE	-	CLEAN DEVELOPMENT MECHANISM - DESIGNATED OPERATIONAL ENTITY
CDM-EB	-	CLEAN DEVELOPMENT MECHANISM - EXECUTIVE BOARD
CEC	-	CERTIFIED EMISSIONS CREDITS
CER	-	CERTIFIED EMISSIONS REDUCTION
CIDB	-	CONSTRUCTION INDUSTRY DEVELOPMENT BOARD
CO	-	CARBON MONOXIDE
CO2	-	CARBON DIOXIDE
COGTA	-	COOPERATIVE GOVERNANCE AND TRADITIONAL AFFAIRS
COP/MOP	-	CONFERENCE OF THE PARTIES / MEETING OF THE PARTIES
CPI	-	CONSUMER PRICE INDEX
DCCAC	-	DURBAN CLIMATE CHANGE ADAPTATION CHARTER
DEA & DP	-	DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING
DEA	-	DEPARTMENT OF ENVIRONMENTAL AFFAIRS
DLM	-	DRAKENSTEIN LOCAL MUNICIPALITY
DNA	-	DESIGNATED NATIONAL AUTHORITY
DoE	-	DEPARTMENT OF ENERGY
DWA	-	DEPARTMENT OF WATER AFFAIRS
ECA	-	ENVIRONMENT CONSERVATION ACT
EEA	-	EMPLOYMENT EQUITY ACT
EFS	-	EXTERNAL FEASIBILITY STUDY
EIA	-	ENVIRONMENTAL IMPACT ASSESSMENT
EPWP	-	EXPANDED PUBLIC WORKS PROGRAMME
ER	-	EMISSION REDUCTIONS
ERA	-	ELECTRICITY REGULATION ACT
ERNGC	-	ENERGY REGULATIONS ON NEW GENERATION CAPACITY
ERU	-	EMISSION REDUCTION UNITS
FFC	-	FINANCIAL AND FISCAL COMMISSION
GAMAP	-	GENERALLY ACCEPTED MUNICIPAL ACCOUNTING PRACTICES
GDP	-	GROSS DOMESTIC PRODUCT
GHG	-	GREEN HOUSE GASES
GRAP	-	GENERALLY RECOGNISED ACCOUNTING PRACTICES
GW	-	GIGA WATT
GWh	-	GIGA WATT HOUR (1000MWh)
IA	-	IMPLEMENTING AGENT
IDP	-	INTEGRATED DEVELOPMENT PLAN
IMATU	-	INDEPENDENT MUNICIPAL AND ALLIED TRADE UNION
IPP	-	INDEPENDENT POWER PRODUCER
IRP	-	INTEGRATED RESOURCE PLAN
IWMP	-	INTEGRATED WASTE MANAGEMENT PLAN
JPCE	-	JAN PALM CONSULTING ENGINEERS
LFG	-	LANDFILL GAS
LGBER	-	LOCAL GOVERNMENT BUDGET AND EXPENDITURE REVIEW
LGSETA	-	LOCAL GOVERNMENT SECTOR EDUCATION AND TRAINING AUTHORITY
LGTAS	-	LOCAL GOVERNMENT TURNAROUND STRATEGY
LRA	-	LABOUR RELATIONS ACT
LUPO	-	LAND USE PLANNING ORDINANCE (WESTERN CAPE)
MAT	-	MUNICIPAL ASSET TRANSFER REGULATIONS
MCP	-	MUNICIPAL CLEANSING PROJECT
MFMA	-	MUNICIPAL FINANCE MANAGEMENT ACT
MIG	-	MUNICIPAL INFRASTRUCTURE GRANT
MOA	-	MEMORANDUM OF AGREEMENT
MRF	-	MATERIAL RECOVERY FACILITY
MSA	-	MUNICIPAL SYSTEMS ACT

MTAS	-	MUNICIPAL TURNAROUND STRATEGY
MW	-	MEGA WATT
MWSP	-	MUNICIPAL WASTE SECTOR PLAN
NCCRWP	-	NATIONAL CLIMATE CHANGE RESPONSE WHITE PAPER
NCV	-	NET CALORIFIC VALUE OF FUEL
NEA	-	NATIONAL ENERGY ACT
NEDLAC	-	NATIONAL ECONOMIC DEVELOPMENT AND LABOUR COUNCIL
NEM:AQA	-	NATIONAL ENVIRONMENTAL MANAGEMENT: AIR QUALITY ACT
NEM:WA	-	NATIONAL ENVIRONMENTAL MANAGEMENT: WASTE ACT
NEMA	-	NATIONAL ENVIRONMENTAL MANAGEMENT ACT
NEMWA	-	NATIONAL ENVIRONMENTAL MANAGEMENT WASTE ACT
NERSA	-	NATIONAL ENERGY REGULATOR OF SOUTH AFRICA
NGO	-	NON-GOVERNMENTAL ORGANISATION
NOx	-	NITROGEN OXIDES
NT	-	NATIONAL TREASURY
NWA	-	NATIONAL WATER ACT
NWMS	-	NATIONAL WASTE MANAGEMENT STRATEGY
OHSA	-	OCCUPATIONAL HEALTH AND SAFETY ACT
OPEX	-	OPERATIONAL EXPENDITURE
PDD	-	PROJECT DEVELOPMENT DOCUMENT
PDF	-	PROJECT DEVELOPMENT FUNDING
PFMA	-	PUBLIC FINANCE MANAGEMENT ACT
PGWC	-	PROVINCIAL GOVERNMENT OF THE WESTERN CAPE
PIN	-	PROJECT IDENTIFICATION NOTE
PP	-	PROJECT PARTICIPANT
PPA	-	POWER PURCHASE AGREEMENT
PPP	-	PUBLIC-PUBLIC / PUBLIC-PRIVATE PARTNERSHIP
PSDF	-	PROVINCIAL SPATIAL DEVELOPMENT FRAMEWORK
PSC	-	PROJECT/PROCESS STEERING COMMITTEE
PT	-	PROVINCIAL TREASURY
PUPP	-	PUBLIC-PUBLIC PARTNERSHIP
PV	-	PHOTOVOLTAIC PLANT
RE	-	RENEWABLE ENERGY
REFIT	-	RENEWABLE ENERGY FEED-IN TARIFF
RFP	-	REQUEST FOR PROPOSALS
ROD	-	RECORD OF DECISION
SAIPPA	-	SOUTH AFRICAN INDEPENDENT POWER PRODUCERS ASSOCIATION
SALGA	-	SOUTH AFRICAN LOCAL GOVERNMENT ASSOCIATION
SAMWU	-	SOUTH AFRICAN MUNICIPAL WORKERS UNION
SANERI	-	SOUTH AFRICAN NATIONAL ENERGY RESEARCH INSTITUTE
SANS	-	SOUTH AFRICAN NATIONAL STANDARDS
SCM	-	SUPPLY CHAIN MANAGEMENT
SDA	-	SERVICE DELIVERY AGREEMENT
SDA	-	SKILLS DEVELOPMENT ACT
SJRP	-	SECTOR JOBS RESILIENCE PLANS
SLFC	-	STRUCTURED LANDFILL CELLS
TSC	-	TRANSACTION STEERING COMMITTEE
TVR	-	TREASURY VIEWS AND RECOMMENDATIONS
TWh	-	TERAWATT HOUR (1000GWh)
UNFCCC	-	UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE
VfM	-	VALUE FOR MONEY
WACC	-	WEIGHTED AVERAGE COST OF CAPITAL
WCSP	-	WESTERN CAPE (DRAFT) STRATEGIC PLAN
WDM	-	WINELANDS DISTRICT MUNICIPALITY
WEP	-	WORKING FOR ENERGY PROGRAMME
WIS	-	WASTE INFORMATION SYSTEM
WPIP&WM	-	WHITE PAPER ON INTEGRATED POLLUTION AND WASTE MANAGEMENT
WPREP	-	WHITE PAPER ON RENEWABLE ENERGY POLICY
WTE	-	WASTE TO ENERGY
WWW	-	WASTEWATER WORKS

TERMS AND DEFINITIONS

BIOGAS

Biogas is defined as the gas that is produced by the decomposition of organic material in the absence of oxygen

BIOMASS

Energy from plants and plant-derived materials

GIGAWATT HOUR (GWh)

An energy unit in which electricity consumption is measured 1 GWh = 3,600 GJ (Gigajoule) (a Joule is a unit of energy)

GREENHOUSE GAS

Gases primarily carbon dioxide, methane, and nitrous oxide in the earth's lower atmosphere that trap heat, thus causing an increase in the earth's temperature and leading towards the phenomenon of climate change.

INDEPENDENT POWER PRODUCER (IPP)

IPPs are defined as typically limited-liability, investor owned enterprises that generate electricity either for bulk sale to an electric utility or for retail sale to industrial or other customers with certain conditions

LANDFILL GAS

Landfill gas is defined as gas that is generated by decomposition of organic material within a landfill disposal site

POWER PURCHASE AGREEMENT OR "PPA"

Means an agreement concluded between a generator and the buyer for the sale and purchase of new generation capacity;

REFIT

Renewable Energy Feed-In Tariff: means a tariff approved by the Regulator for a renewable energy generator;

RENEWABLE ENERGY

Renewable energy harnesses naturally occurring non-depletable sources of energy, such as solar, wind, biomass, hydro, tidal, wave, ocean current and geothermal, to produce electricity, gaseous and liquid fuels, heat or a combination of these energy types.

WATT

1 Joule per second of energy consumption or dissipation (1 MW = 1,000,000 W).

PROJECT PURPOSE AND PROCESS

1. INTRODUCTION

Drakenstein is moving at the forefront of waste management and sustainable energy solutions in local government by gearing for the establishment of the first solid Waste-to-Energy Facility (the “WTE”) in SA. In doing so, Drakenstein will give effect to national, provincial and its own municipal strategies. The Drakenstein Waste to Energy project developed over a number of years following a practical and financially feasible route. The project motivation, approach and methodology are discussed below.

2. PURPOSE AND BACKGROUND OF THE PROJECT

Drakenstein Local Municipality (the “Municipality”)¹ comprises an area of approximately 1538km² that is known for its wheat farms, vineyards and magnificent mountains. The area, being the second largest economic centre in the Western Cape, attracts people looking for economic opportunities and the Municipality has to provide in the increasing demand for infrastructure and services. The service objectives, proposed plans and projects on how to deal with these services’ challenges are outlined in the Municipality’s Integrated Development Plan (the “IDP”) and its sectoral plans, i.e. for waste, the Integrated Waste Management Plan (the “IWMP”).

2.1 WASTE OBJECTIVE

In December 2009, the Municipality completed the 2nd version of its IWMP to include the principles of the National Waste Management Strategy (the “NWMS”). Based on these principles the IWMP⁽²⁰⁰⁹⁾ committed the Municipality to:

- the avoidance of waste generation;
- the reduction of waste volumes; and
- the safe disposal of waste

with a number of strategic objectives based thereon. These included modernising the Municipality’s Material Recovery Facility (the “MRF”) at the Paarl Transfer Station (the “Paarl TS”) for it to be operative again and continued research of alternative technologies to reduce waste to landfill because the Municipality’s only permitted landfill, i.e. the Wellington Landfill², will reach its capacity in a few years.

In the process of doing the research, data collation and project planning for the IWMP⁽²⁰⁰⁹⁾, it was realised that the reduction of mixed collected waste by means of recovery and composting will not meet the objectives of the NWMS. More innovative solutions such as the establishment of a WTE Facility were needed but these would be expensive and had to involve expertise only found in the private sector through a Public Private Partnership (“PPP”).

2.2 REGULATORY ENVIRONMENT

The municipal regulatory environment in respect of PPPs is complex, costly and requires expertise to complete the studies and processes involved to ensure compliance with relevant acts, regulations and guidelines. The following requirements are applicable and are supported by National Treasury’s Municipal Service Delivery and PPP Guidelines³ (the “PPP Guidelines”):

- contracting with a private party to set up the WTE Facility including the operation of a MRF

¹ Established in December 2000 when the municipalities of Paarl, Wellington, Hermon, Gouda and Saron amalgamated.

² An extension of the existing permit of the Wellington Landfill was applied for and granted.

³ The Guideline consolidates the contents of the PPP feasibility studies required in terms of section 78(3)(c) of the Local Government: Municipal Systems Act, 32 of 2000 (the “MSA”), sections 120(1) and (4) of the Local Government: Municipal Finance Management Act, 56 of 2003 (the “MFMA”) and Regulation 3 of the Municipal Public-Private Partnership Regulations, 2005 (the “PPP Regulations”) enabling one study report.

involves a PPP for municipal activities within the legal competence of the Municipality; thus subject to a feasibility study in terms of section 120(4) of the MFMA and the PPP Regulations;

- adding to a WTE PPP the operation of a landfill site and/or transfer station constitutes a PPP for municipal activities and municipal services⁴ and thus trigger as a 1st Phase, a section 78(1) status quo analysis and thereafter as a 2nd Phase a section 78(3) feasibility study into the MSA combined with the MFMA section 120(4) study mentioned above;
- these processes also need to adhere to relevant stipulations of the Municipal Asset Transfer Regulations, 2008 (the “**MAT Regulations**”), if applicable, and the Supply Chain Management Regulations, 2005 (the “**SCM Regulations**”), both regulations in terms of the MFMA.

Furthermore, substantial transparency and national and provincial oversight is built into the process:

1. The Accounting Officer of a municipality must, at the inception of a MSA section 78(3) and/or a MFMA section 120(4) Feasibility Study register the project with National Treasury (“**NT**”) and Provincial Treasury (“**PT**”)⁵ by notifying them of the Municipality’s intention to embark on a Feasibility Study and *inter alia* provide information regarding the expertise within the Municipality with which to execute/implement the Feasibility Study as well as the particulars of the Project Officer⁶ and transaction advisors.
2. Treasury’s views and recommendations (referred to as a “**TVR**”) must be solicited no less than four times:
 - When the s78(3)/120(4) Feasibility Study has been completed (60 days prior to the Council meeting to approve the Feasibility Study) - **TVRI**;
 - After completion of the Bid Documents, (concerning the bid document and the draft PPP Agreement which should be included in the bid documents) and at least 30 days before bids are publicly invited – **TVRII-A**;
 - After evaluation of the bids and at least 30 days before any award is made – **TVRII-B**;
 - After drafting the contract and (60 days prior to the Council meeting to approve it) **if** such a contract will impose financial obligations on the municipality beyond the 3 years covered in the annual budget for that financial year as prescribed in Section 33 of the MFMA - **TVRIII**.

In terms of TVRI and TVRIII, a Municipality must also obtain the views and recommendations of the relevant Provincial Treasury, other relevant state departments, e.g. Department of Environmental Affairs (DEA) and the Department of Co-operative Governance and Traditional Affairs (“**COGTA**”). A specific public consultation process is prescribed for the TVRI and TVRIII processes while keeping the public up to date during the TVRII-A and TVRII-B processes. If there are employees involved, labour must also be consulted and continuously be kept informed in accordance with labour legislation.

⁴ “Municipal service” means a service that a municipality provides or may provide to its powers and functions to the benefit of the local community irrespective of whether such services are provided through an internal or external mechanism and fees, charges or tariffs are levied on such a service or not. A “municipal support activity” means an activity that is reasonably necessary for or incidental to the effective performance of a municipal function and exercise of its powers that does not constitute a municipal service. Pertaining to solid waste, street cleansing, refuse removal and disposal (landfill) of waste are municipal services while recycling, waste minimisation, composting, waste processing and methane gas recovery are all regarded as municipal support activities. The legal processes for a feasibility study are prescribed in different legislation but overlap and converge as the process moves towards the establishment of a PPP.

⁵ As required by Regulation 2(1)(a) of the PPP Regulations.

⁶ The Municipality has appointed as Project Officer for the WTE Project, Mr Ronald M. Brown, Engineer: Waste Services, in the Municipality.

2.3 PRE-DETERMINATION OF THE FEASIBILITY OF THE WTE PROJECT

There is no benchmark in SA for municipal feasibility studies in respect of WTE projects and knowledge about such projects is virtually absent in municipalities, the latter having to rely on external expertise to assist. In the absence of reliable technical data of waste streams, it becomes even more difficult to establish whether a WTE project would be a feasible alternative for a municipality. Even though a WTE project might be justifiable in terms of a municipality's IDP, spending money on feasibility studies just to find that the municipality does not have a bankable waste stream could be construed as wasteful expenditure.

To overcome these obstacles and find a clear way forward in the relatively uncharted waters of WTE, it made good business sense for the Municipality to involve the private sector in the pre-determination of the feasibility of a WTE Facility before proceeding with the prescribed legal processes set out above.

It thus followed the Request for Proposals ("RFP") route embodied in its legally compliant Supply Chain Management ("SCM") processes to procure the best WTE expertise currently available and tasked these professionals to use own operating capital to conduct the technical, financial and operational feasibility studies required to substantiate their proposals.

The RFP was advertised on 4 December 2008, closed on 5 February 2009 and called for proposals from local and international companies with experience and a proven track record in WTE projects to bid for the planning, design, financing, construction and operation of a WTE Facility at or adjacent to the Wellington Landfill on already suitably zoned municipal owned land.

The RFP stated three project objectives, i.e.:

- the generation of renewable energy from municipal solid waste;
- the reduction of municipal solid waste to landfill; and
- the development of a Clean Development Mechanism ("CDM") project in order to sell the Certified Emissions Reduction (the "CER") achieved by the generation of electricity from non-fossil fuel.

Eight proposals were received ranging from minimum to good technical capability and experience. Although the Municipality expressed a preference for Anaerobic Digestion Technology ("ADT"), most of the bidders offered a combination of technologies and two bids included the operation of the Wellington Landfill by the bidder in order to construct structured cells for the harvesting of methane gas from the landfill as well as operation of the PAARL TS and the Paarl MRF, at no extra cost to the Municipality but taking these operating costs into account in their tipping fee. Accepting any of these bids thus implied the outsourcing of a *municipal service* to the private sector, i.e. the landfill and transfer station operations.

Based on a comprehensive analysis and evaluation of the proposals received, the Municipality on 3 September 2009 requested the four short listed bidders to conduct further feasibility studies in accordance with minimum set criteria and at their own cost. Besides the WTE, the study terms of reference then included consideration of the operation of the Paarl MRF and/or Transfer Station and/or the Wellington Landfill but did not include refuse removal or any other cleansing services.

Since the Municipality could not expect the private sector to invest substantial risk capital without any counter performance, it committed to a real project should the WTE be a feasible alternative to meet its waste obligations in an affordable and value-for-money manner.

Three of the four bidders submitted feasibility reports on 25 February 2010. The evaluation report was submitted to the Municipality in April 2010 and a decision was taken to invite all three bidders to do a presentation on 12 August 2010; which meeting was well attended by officials and consultants with

engineering, technical, financial and legal expertise. Based on consensus one of the bid proposals that included the operation of the Wellington Landfill, the Paarl TS and the Paarl MRF, was considered markedly better than the rest; remained so given the results of an in-depth risk analysis of all four bids and was thus accepted in principle by the Municipality pending the successful completion of the legally prescribed processes.

Knowing that a WTE project was, from a private sector perspective, feasible in Drakenstein and that the Municipality had provisionally procured the current best expertise available a Council Resolution dated 23 June 2011 resolved that:

- the Municipal Manager may sign a Memorandum of Agreement (the “MOA”) with the preferred bidder for the establishment of a WTE Facility;
- a final agreement with the preferred bidder be drafted after the Municipality successfully concluded its required statutory investigations; and
- such agreement be subjected to a MFMA section 33 process, before the final approval thereof by the Council.

In terms of the MOA, the bidder must *inter alia*:

- obtain a waste license;
- obtain an environmental authorisation for the WTE Facility based on the obligatory Environmental Impact Assessment (the “EIA”); and
- secure the necessary funding.

3. **METHODOLOGY OF THE STUDY**

The WTE Project’s institutional process consists of three phases:

- the Section 78(1) study to assess the Municipality’s internal capacity to establish a WTE Facility and its operation and maintenance of WTE supportive infrastructure, i.e. the Paarl MRF, the Paarl TS and the Wellington Landfill (this report)⁷;
- a consolidated MSA Section 78(3) and MFMA Section 120(4) Feasibility Study to determine the feasibility (using updated figures) of a WTE Facility and the benefits of outsourcing the establishment of a WTE Facility as well as operation and maintenance of WTE supportive infrastructure, i.e. the Paarl MRF, Paarl Transfer Station and the Wellington Landfill to an external party; and
- a contracting phase in compliance with the MSA, the MFMA and the PPP Regulations.

As a result of the pre-feasibility determination, there were some deviations from the legal process, i.e.:

- Instead of registering the project with National Treasury at the beginning of the 2nd Phase s78(3)/120(4) Feasibility Study, it was already done during the 1st Phase s78(1)⁸ study to do an early clarification of the pre-feasibility study and subsequent MOA with the preferred bidder, with Treasury;
- Submission of the s78/120 Feasibility Study to Treasury and the other national and provincial departments to obtain TVRI will include the bid and bid evaluation documents thus leaving out the TVRIIA and TVRIIB solicitations as mentioned.

Important is that the Municipality will consult the public and solicit the views and recommendations of NT, PT and other state departments in respect of the Feasibility Study and a contemplated PPP contract for the WTE Facility before final approval thereof by the Council⁹.

⁷ Section 77(a) of the MSA lays the foundation of the Section 78 study in that it obliges the municipality to review and decide on the appropriate mechanism with which to provide a municipal service in the municipality or to part of the municipality, when an existing service is to be significantly upgraded, extended or improved. Section 77(d) requires the same when a new service is to be provided but as explained in the report the WTE Facility is not regarded as a municipal service but a municipal support activity.

⁸ Refer to Annexure 1.

⁹ Section 33 of the MFMA requires such consultation if a long term contract will impose financial obligations on a municipality beyond the 3 years covered in its annual budget.

4. TRANSACTION ADVISORS

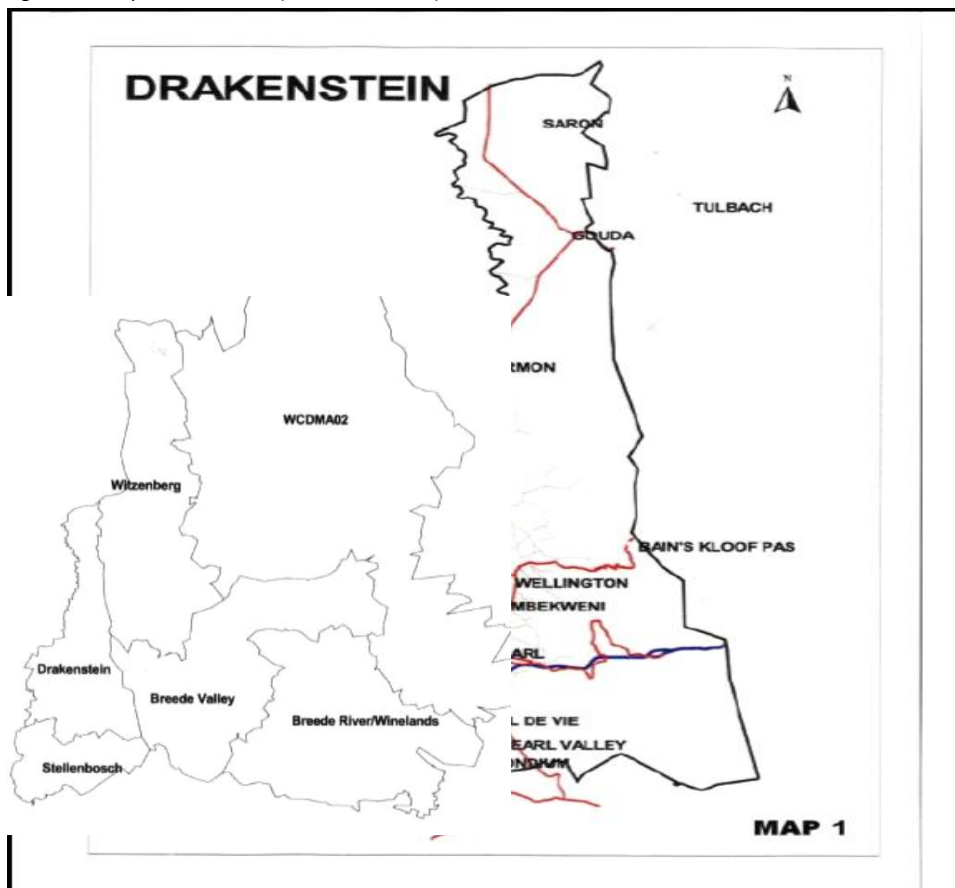
In February 2008, as per an open tender and bidding process, Jan Palm Consulting Engineers (“JPCE”), hereinafter referred to as the “*transaction advisors*” was appointed by the Municipality to assist it with the WTE project including the completion of all the statutory processes pertaining to the finalisation of a PPP arrangement.¹⁰

SECTION 1: SITUATIONAL & NEEDS ASSESSMENT

1. STUDY AREA

Drakenstein Local Municipality (the “**DLM**”)¹¹ comprises an area of approximately 1538km² and is made up of two large towns, i.e. Paarl and Wellington, in close proximity to the N1 in the south, where all the main economic activities take place and the three rural towns of Hermon, Gouda and Saron. Drakenstein is within the area of the Cape Winelands District Municipality (the “**CWDM**”) and flanked by the City of Cape Town and the local municipalities of Swartland, Breede Valley and Witzenberg. The area has a Mediterranean climate and an average rainfall of 700mm per annum.

Figure 1: Map of Drakenstein (source: IWMP²⁰⁰⁹)



1.1 SOCIO-ECONOMIC PROFILE

Drakenstein includes some of the oldest towns in SA and is the second largest economic centre in the Western Cape. According to a recent report of the SA Cities Network¹² Drakenstein is unofficially regarded by National Treasury as a secondary city which implies it is seen as an alternative urban centre acting as an important catalyst for more balanced and dispersed growth and as a market for agricultural produce.

The population figures quoted in various Council documents, e.g. the IDP and sector plans often differ – a situation to be rectified once the 2011 Census figures are available. A seemingly accurate figure is

¹¹ The information in this section was mainly sourced from the IWMP²⁰⁰⁹, the IDP²⁰¹¹⁻²⁰¹² and the Annual Report (the “**AR**”) of 2010-2011 of the Municipality.

¹² Secondary Cities in South Africa: the start of a conversation, published by the SA Cities Network, March 2012

a population of slightly more than 200 000 by 2010 with an annual increase estimated at 1,8 – 2,0% with about 78% of the population residing in and around the two large towns of Paarl and Wellington and between 8 500 and 10 000 people residing in each of the other three rural towns of Hermon, Gouda and Saron.

Paarl, the major centre, is situated on the banks of the Berg River. Traditionally a farming town it has a rich architectural history with beautiful Cape Dutch houses in streets lined with old oak trees. Wellington, situated at the foot of the Bainskloof Pass, is home to most of South Africa's vine nurseries and has an established agro-processing industry. Gouda is predominantly a rural residential town and is well known for the Gouda cheeses that originate there. The town does not have an active economic centre but is marketed for its tourism appeal and it has a regular train service to Cape Town. Saron is a residential settlement area with very limited economic activity. Mbekweni is in comparison with the historical towns and villages a relatively new township north of Paarl with mostly informal dwellings and a large informal sector.

The population distribution, concentration of economic activities and expected growth are important factors for waste planning. In this regard, it is noteworthy that an on-going focal area in the Municipal Turn-around Strategy (the "MTAS") since 2010/11 is housing projects to eventually eradicate the estimated backlog of 23 000 houses. Table 1 indicates the percentage of informal dwellings that exist within Drakenstein.

Table 1: Indigent Households within Drakenstein (source: AR²⁰¹⁰⁻²⁰¹¹)

Area	House	Informal Dwelling	Flat
DLM	68.0%	23.2%	8.8%
Dal Josafat Forest Reserve	99.5%	0.3%	0.2%
Drakenstein	93.2%	3.9%	2.9%
Drommedaris	1.9%	96.7%	1.4%
Gouda	87.5%	11.3%	1.2%
Mbekweni	42.4%	50.6%	7.0%
Paarl	62.6%	23.4%	14.0%
Paarlberg Nature Reserve	81.8%	10.7%	7.5%
Saron	88.0%	5.8%	6.2%
Victor Verster	93.6%	1.5%	4.9%
Wellington	79.7%	16.9%	3.4%

The largest percentage of the population, i.e. 55,5% is under 30 years, with young people up to 15 years, accounting for 30% of the population. Drakenstein area therefore has a youthful populace which in itself has a subset of socio-economic challenges, e.g. schools, healthy entertainment, sport facilities, etc. – services which the Municipality either facilitate or provide. For instance in the more rural areas sport facilities which are unequally distributed and not well maintained are the only source of social life. These services have great merit and compete for limited funding from the municipal fiscus. It thus becomes a difficult decision for a municipality to be more compliant with environmental demands and spend more on the less visible or normally underrated waste services while facing highly visible socio-economic challenges.

Approximately 50% of the economically active persons (above 15) or, if all ages are taken into account, 35% of the population are unemployed according to the IWMP²⁰⁰⁹ with the IDP figure a bit lower thus estimating an economically inactive population of 33,3% and the SA Cities report's estimate still lower at 20,2% in 2007.

If basic service delivery is complicated by the host of other priority demands on the municipal fiscus, then the affordable delivery of such services is even more challenging due to the fact that two-thirds or more of the population in the study area falls within the lowest income bracket, i.e. 64.2% as per

the IWMP (the IDP estimates this figure to be 69,2%), with the higher income bracket accounting for 18,9% and the middle income bracket for 16,9% of the population. According to the SA Cities report the average person in Drakenstein earns more than the national average but lower than the metro average.

Given the percentage low-income and unemployed residents, the Municipality has definite challenges in respect of the delivery of basic services to the indigent households underlining the importance of the Municipality getting its rightful percentage of the Local Government Equitable Share (the “LGES”), i.e. the unconditional grant funding to assist with the delivery of basic services including refuse removal to indigent communities. Table 2 indicates the status of free basic services to indigent households. These households receive 10 kilolitres of water per household, higher than the average national guideline of 6kl/household and 100 kilowatt hours of electricity per household which is higher than the national guideline of 50kWh/household.

Table 2: Free Basic Services to Indigent Households within Drakenstein (source: AR²⁰¹⁰⁻¹¹)

Financial year	Total no of HH	Number of households							
		Free Basic Electricity		Free Basic Water		Free Basic Sanitation		Free Basic Refuse Removal	
		No. Access	%	No. Access	%	No Access	%	No. Access	%
2008/2009	43 000	14 507	34.0	30 909	72	11 990	8	11 990	28
2009/2010	44 000	16 456	38.0	31 479	72	9 723	22	9 723	22
2010/2011	45 000	19 700	44.0	32 223	72	10 854	25	10 854	25.0

Despite the unemployment and poverty rates, in 2010 the DLM ranked 5th on the list of 30 metros and secondary cities in respect of own revenue generation, i.e. 76% and 7th on the list in respect of average municipal spending on its citizens with a figure of R4 705 per resident per annum¹³.

The economy is fairly diversified. The main contributors to the Gross Domestic Product (the “GDP”) of the area are manufacturing and agriculture. Available figures vary considerably but agriculture is the largest employer at between 23% and 29% of the *economically active population*. However, the seasonality of these jobs is problematic and has a negative impact on sustainable socio-economic upliftment.

Sustainable employment and new job opportunities of varying skill levels are primary goals for stability and growth in the Drakenstein area where a total of 44% of the employment is in low skilled jobs, 39% in skilled occupancies and 19% in highly skilled occupancies. The WTE project which will provide approximately 116 unskilled and 14 skilled job opportunities will significantly contribute to the achievement of employment creation goals.

The WTE project will also contribute to maintain the integrity of Drakenstein’s environment which is currently under threat inter alia due to unsustainable resource utilisation. Naturally hydrogeology and ground water quality would be important factors to consider in the design of waste facilities, as adequately addressed in the IWMP.

2. ALIGNMENT OF THE STUDY PROJECT

This section investigates the alignment of the study with national, provincial and municipal strategic objectives as well as legal and policy directives. Based on the above, it measures the relevance of the project, the internal and potential external capacities with which to deliver these services and the expectations that are to be met.

2.1 STRATEGIC AND INSTITUTIONAL ALIGNMENT

Solid waste management is primarily a local government function and it is at local level that the sustainable delivery of waste services must be ensured, subject to national strategies, standards and norms and provincial regulations and standards to direct implementation of these. Table 3 shows the assignment of solid waste roles between the spheres of government and indicates the involvement of the private sector in planning, asset creation and various operational activities. The discussion below further highlights how government strategies have developed and how these are linked and aligned.

Table 3: Governance iro solid waste (Source: DEAT, 2007)

Area	Broad Function	Activity	Current assignment				Issue
			Nat	Prov	Local	Pvt	
Policy-making	Standard Setting	Norms and standards	X	X			What is to be provided
		Access targets	X				
	Planning	Plans for service expansion		X	X		Adequate facilities and services
		Plans for service improvement		X	X	X	
Service Provision	Asset creation	Social capital			X		Adequate facilities and services
		Physical capital			X	X	
	Financing	Tariffs			X		Financial sustainability
		Subsidies to Consumers			X		
		Grants to Service Providers	X				
	Operation	Consumer selection			X		Effective and sustainable services
		Recurrent expenditures					
		- General area cleansing			X	X	
		- Waste minimization			X	X	
		- Waste collection			X	X	
- Waste transport				X	X		
- Waste disposal				X	X		
Maintenance			X	X			
Staffing			X				
Regulation	M&E	Economic	X	X	X		Quality of service delivery
		Financial	X	X	X		
		Operational	X	X	X		
		Monitoring & Evaluation	X	X	X		

National government initially set the following targets for basic services:

- Bucket eradication by 2007
- Access to potable water by 2008
- Sanitation by 2010
- Electricity by 2012
- Roads within the MIG context by 2013
- Sport & recreational as well as public facilities, and access to waste management facilities by 2013
- Eradication of informal settlements by 2013

However, the Polokwane Declaration which was formulated in 2001 by members of Government set the following goals to ensure a commitment to waste reduction; re-use and recycling:

- 50% reduction in waste generation and 25% reduction in waste disposal by 2012
- Zero waste by 2022

These targets must all be achieved at the municipal level of governance with the nationally funded Municipal Infrastructure Grant (“MIG”) to assist with capital costs. It is clear that many municipalities will not achieve the national targets. In respect of the DLM the Polokwane Declaration targets also pose a challenge.

In August 2009 the policy and regulatory waste environment changed fundamentally with the promulgation of the long awaited and reformatory National Environmental Management: Waste Act, No. 59 of 2008 (the “NEM:WA”), discussed below.

In January 2010 national government adopted 12 outcomes underpinning its long term development strategy which other spheres of government including municipal IDPs must align with. Outcome 9

specifically refers to the 'Creation of a responsive, accountable, effective and efficient system of local government' by 2014 including 'improved access to basic services'. 'Waste removal services' are also listed under Cabinet Outcome 2: Improved Health and Life Expectancy, thus emphasizing the growing importance of waste management as seen from different perspectives.

In June 2010, national government's strategy for integrated waste management in South Africa was detailed in the new National Waste Management Strategy (the "NWMS²⁰¹⁰")¹⁴ having followed the consultative processes and in line with the Polokwane Declaration and the principles outlined in the NEM:WA. An objective of the NWMS²⁰¹⁰ is to "encourage waste to energy options" with the Department of Environmental Affairs (the "DEA") supporting the development of alternatives to landfill including incineration, gasification and pyrolysis in so far as these mechanisms generate energy. The NWMS²⁰¹⁰ emphasizes that with systematic implementation of waste avoidance and minimisation strategies, it is possible that recovery, re-use, recycling and alternative disposal technologies will overtake landfills as the preferred means of disposal. The role of PPPs specifically in respect of new commercially viable technologies in the field of waste to energy conversion is highlighted. The NWMS²⁰¹⁰ target for 2015 is for all metropolitan municipalities and secondary cities to be implementing waste to energy projects. The Drakenstein WTE project is therefore totally aligned to national strategy.

In the Western Cape's Draft Strategic Plan, 2010 (the "WCSP") titled "Delivering the Open Opportunity Society for All", the Provincial Government of the Western Cape (the "PGWC") has identified 12 overarching strategic objectives for the Western Cape. One of these is the 'Mainstreaming of Sustainability and Optimising Resource-use Efficiency' which includes pollution and waste management. It is clear that the province is faced with a high level of waste, air, land and water pollution as a result of environmental degradation, mainly due to rapid growth and development. The situation is made worse by overfilled landfills and inappropriate management of waste in the majority of municipalities. Minimising of waste to landfill and generation of electricity from renewable sources are definite strategic priorities of the PGWC.

The Municipal Waste Sector Plan¹⁵ (the "MWSP") further emphasizes reducing the quantities of waste disposed to landfill and lists WTE as an alternative technology to achieve it.

The Local Government Budgets and Expenditure Review (the "LGBER")¹⁶ pays much attention to the critical contribution of effective, well-designed solid waste management systems to higher levels of economic activity and alleviation of poverty through job creation.

The Financial and Fiscal Commission (the "FFC")¹⁷ argues: "Municipalities need to become champions of energy-efficient initiatives and to promote the development of energy-efficient sectors, such as renewable energy and bio-fuels. They should encourage energy efficiency in building and construction, agriculture and forestry, as well as alternative energy-efficient transportation, recycling and proper waste management". In fact the FFC went as far as to argue that the government should consider establishing a separate special purpose conditional environmental grant that would seek to achieve inter alia new environment-friendly technologies for waste management.

The White Paper on Renewable Energy Policy, 2003 (the "WP REP") laid the foundation for a range of measures to bring about integration of renewable energies (i.e. naturally occurring non-depletable sources of energy including biomass energy from organic matter such as organic components in municipal waste and landfill gas) into the mainstream energy economy. At the time it set a target of 10 000 GWh (0.8Mtoe) renewable energy contribution to final energy consumption by 2013.

¹⁴ The NWMS published as per GN 575 of 2010 in GG No. 33277 dated 8 June 2010 is a second generation strategy. The first NWMS was published in 1999 and directed waste planning until 2010. It lacked legal status and enforceability, which was rectified in the 2010 version.

¹⁵ Government Notice No. 270 of 30 March 2012 published in Government Gazette No. 35206

¹⁶ Issued by National Treasury on 13 September 2011

¹⁷ FFC Submission for the Division of Revenue, May 2011

These national and provincial strategic objectives and directives provide a solid foundation for the Municipality's drive to establish a WTE Facility in Drakenstein but it still remains the Municipality's responsibility to ensure the facility is in line with its own strategies, financially sustainable and effective.

The Municipality's collective goal as highlighted in its IDP is to achieve integrated and sustainable human settlements and to support a robust and inclusive economy by moving away from economic, social and environmental poverty to cultivate a society characterised by economic prosperity, social well-being and a *quality environment*. An *'improved waste service'* is part of the Municipality's 'infrastructure and environment' strategic priority with objectives that are primarily aligned to the national key performance areas of basic service delivery and local economic development but will definitely also contribute to the efficiency and financial viability of the Municipality.

The content and approach outlined in the Municipality's IDP and its IWMP focus on alignment with national and provincial policies. The broad strategic objectives outlined in the IWMP commit the Municipality to:

- To create an atmosphere in which the environment and natural resources of the region are conserved and protected.
- To develop a communication/information/education strategy to help ensure acceptance of *ownership* of the strategic objectives among members of the public and industry throughout the municipality and to promote co-operative community action.
- To provide a framework to address the municipality's growing problem of waste management in accordance with best prevailing norms, financial capacity and best environmental practice.
- To provide solutions for the avoidance of waste and the reduction of waste volumes as well as for safe disposal of waste.

The objectives of the WTE project as will unfold in this document are aligned to these broad objectives of the IWMP and will give effect to the national, provincial and local government goals of waste information collection, compilation and management, job creation and poverty alleviation. More specifically it could significantly reduce the mass of waste that requires landfilling.

2.2 FUNCTIONAL ALIGNMENT

The Municipality is rendering street cleansing, refuse collection, waste treatment and waste disposal services to its community with the Paarl MRF operations currently outsourced. The WTE project is envisaged to include the Paarl MRF operation, the Paarl TS, Wellington Landfill operation and possibly sludge from the Wellington Wastewater Works (the "**WWW**") depending on the technologies to be used but none of the other traditional waste services components. However, the WTE project would be dependent on the continuous delivery of the right quantity and quality of waste to its plant and thus dependent on effective waste collection services. With its current waste teams the Municipality is meeting its functional responsibilities in this regard.

Added waste activities through a WTE project will still fall within the broader functional area of waste services that can be rendered by a municipality but, as per definition, these waste services will be seen as support activities. The difference is that these activities are not provided to or on behalf of the local community like waste collection, nor are they listed in Schedule 4B and 5B of the Constitution. These solid waste management support activities include recycling, waste minimisation, composting, green and garden waste, waste processing and methane gas recovery¹⁸.

3. LEGAL AND POLICY ENVIRONMENT

The Municipality must act within the statutory framework provided by national, provincial and municipal laws, plans and policies. The Municipality is exclusively a creature of statute and possesses no rights and powers except such as are either expressly or by necessary implication conferred upon it by a competent legislative authority.

Policy considerations feature in the evaluation of institutional, technical and financial aspects related to the WTE proposal since our courts regard the adoption of policy guidelines by state organs to assist decision-makers in the exercise of their discretionary powers as both legally permissible and eminently sensible. However, policy guidelines may not be applied inflexibly or in a manner which excludes decision-making involving the conscientious exercise of the relevant discretion. This means that policy can at most be a guiding principle, but in no way decisive.

Against this background and the waste, environment and energy related strategies referred to above, the legislation in which this study and project are rooted and the plans that must direct and guide or impact on the implementation thereof are outlined below.

3.1 CONSTITUTIONAL MANDATE

The Constitution of the Republic of South Africa, Act No. 108 of 1996, (the “**Constitution**”) as the supreme law of the Republic is the logical point of departure for any exploration of the maze of statutory provisions that apply. In terms of the Constitution the objects of local government include-

- *To ensure the provision of services to communities in a sustainable manner;*
- *To promote social and economic development;*
- *To encourage the involvement of communities and community organisations in the matters of local government.*

The Constitution requires each municipality to strive, within its financial and administrative capacity, to achieve those objects.¹⁹ It also requires each municipality, to structure and manage its administration and budgeting and planning processes to give priority to the basic needs of the community, and to promote the social and economic development of the community.²⁰ The latter includes the IDP and IWMP.

The public administration (which includes the municipal administration) is governed by democratic values and principles enshrined in the Constitution.²¹ Included amongst those values and principles are that the public administration must-

- *promote the efficient, effective and economic use of resources;*
- *respond to people’s needs;*
- *be development-orientated; and*
- *provide services impartially, fairly, equitably and without bias.*

The Constitution outlines the functional areas that are local government matters in respect of which municipalities have executive authority. These functional areas are listed in Part B of Schedule 4 and Part B of Schedule 5 of the Constitution, which includes refuse removal, refuse dumps and solid waste disposal.

The Bill of Rights specifically states that everyone has the right to have access to sufficient food and water²² and refers to the right to an environment that is not harmful to the health and well-being of

¹⁹ See section 152 of the Constitution.

²⁰ See section 153 of the Constitution.

²¹ See section 195 of the Constitution.

²² See section 27 of the Constitution.

anyone²³. It imposes a duty on national government to promulgate legislation and to take other steps to ensure that the right is upheld and that, among other things, pollution and ecological degradation is prevented.

3.2 MUNICIPAL LEGISLATION

3.2.1 Local Government: Municipal Structures Act, 1998

Section 84(1) of the Local Government: Municipal Structures Act, 117 of 1998 (the “Structures Act”) divides local government powers and functions between district and local municipalities. District municipalities must pursue the integrated, sustainable and equitable social and economic development of the district. It performs its role by:

- ensuring integrated development planning for the district as a whole;
- building the capacity of local municipalities to perform their functions;
- exercise local municipal powers where capacity is lacking; and
- promoting the equitable distribution of resources between the local municipalities in its area.

In terms of section 84(1)(e) of the act a district municipality has the powers and functions for solid waste in so far as it relates to:

- (i) the determination of a waste disposal strategy;
- (ii) the regulation of waste disposal;
- (iii) the establishment, operation and control of waste disposal sites, bulk waste transfer facilities and waste disposal facilities for more than one local municipality in the district.

Municipal health is also a district municipal function which has an impact on waste management, given the close relationship between waste and health objectives, e.g. the monitoring of waste facilities and public health awareness programmes implemented by district environmental health practitioners.

One of the NWMS objectives is to “promote the regionalisation of waste management services” with the establishment of regional landfills as the primary focus whether managed by a district municipality or by a local municipality acting on its behalf. While the environmental benefits could be huge, a detracting factor could be transport costs therefore regionalisation decisions will necessitate detailed cost-benefit analyses²⁴. Regional landfills may also remain relatively unsupported where local municipalities do not wish to be reliant on a landfill owned by a district municipality over which it has limited control in respect of financial, operational and technical risks.

3.2.2 Local Government: Municipal Systems Act, 32 of 2000

Chapter 4 of the MSA as well as sections 21 and 21A deal with community consultation processes necessitated in terms of a section 78 study.

Chapter 5, (which deals with Integrated Development Planning) and chapter 6 (Performance Management) of the MSA contain various clauses that underscore the need to address the basic needs of a community and which leave the door open for possible private sector involvement. However, the focus is on Chapter 8, where municipal service rendering is directly addressed²⁵.

Section 73 provides a general duty to give priority to the basic needs community members should have access to, i.e. at least the minimum level of basic municipal services.

²³ See section 24 of the Constitution.

²⁴ The NWMS commits the DEA to undertake such an analysis, develop guidelines for the regionalisation of waste management services and, in co-operation with COGTA, consider using the MIG to promote regionalisation of waste.

²⁵ Chapter 8 of the MSA specifically applies to service delivery mechanisms i.r.o. municipal services not municipal support activities, these are covered by the MFMA. In this study the relevant sections of chapter 8 as discussed, were only triggered due to the WTE project including the landfill operation which is a municipal service.

Section 74(2) of the MSA prescribes that a council must adopt and implement a tariff policy on the levying of fees for municipal services which policy should *inter alia* reflect the principles of equity, fairness and affordability while facilitating financial sustainability of the service and economic development. In section 74(2)(d) specific mention is made that the tariff must reflect the costs reasonably associated with rendering the service and section 74(2)(h) refers to the obligation to encourage the economical, efficient and effective use of resources, the **recycling of waste** and other appropriate environmental objectives. Section 75 directs a municipal council to enact a by-law to give effect to the implementation and enforcement of the tariff policy.

Section 76 distinguishes between two possible mechanisms for municipal service delivery, namely an **internal mechanism**, which includes various internal arrangements within the municipal administration, and an **external mechanism**, which includes various possibilities for partnering with external parties. Some of these possibilities could lead to a Public-Public Partnership (**PUPP**) or alternatively a Public-Private Partnership (**PPP**).

Section 77 spells out the occasions when municipalities must review and decide on mechanisms to provide municipal services, i.e. the 'mandatory triggers' which could be inadequate service delivery, new services, significant upgrading or improvement of services, etc. and section 78 deals with the criteria and processes to be followed in order to reach decisions regarding such mechanisms for municipal services.

The aim of a Section 78 process is thus:

- To explore internal service delivery mechanisms including the views of organised labour to establish whether the relevant service/s could and should rather be rendered by the Municipality itself instead of being outsourced and, if found not, putting forth the reasons and recommendations to support a further investigation into the most feasible external service delivery mechanisms for the relevant service/s (focus of a Section 78(1) Report);
- To explore such external service delivery mechanisms including organised labour and community consultation and reaching a point where a preferred external mechanism could be recommended (focus of a Section 78(3) Feasibility Study Report); and
- To take an informed decision on the best delivery mechanism for the service/s.

Section 78(4) requires that the Council, in considering the recommendations of the Section 78(3) Feasibility Study and thus deciding on which mechanism to use (internal or external), must take into account Section 73(2) of the MSA in achieving the best outcome. The latter section requires that municipal services must be:

- Equitable and accessible
- Provided in a manner that makes prudent, economic, efficient and effective use of available resources and improves standards of quality over time
- Financially sustainable
- Environmentally sustainable
- Regularly reviewed with a view to upgrading, extension and improvement.

Section 78(5) reminds the municipality that it must take other applicable legislation relating to the appointment of a Service Provider into account, e.g. if the service is water and sanitation, it would be the National Water Act and specifically the Water Services Act, 108 of 1997.

Section 79 refers to the commitment of financial and human resources by the municipality if an internal mechanism is decided on and sections 80 through to 84 contain a number of important obligations, inter alia:

- Section 80(3) which stipulates that before a SDA with another municipality is concluded, the latter municipality must also do a feasibility study to assess the impact of the arrangement;
- Section 81(2) refers to the municipality's responsibilities if concluding an external arrangement including those responsibilities that may be assigned to the external service provider;

- Section 81(4) refers to the process to be followed if an existing external service arrangement must be amended (note Reg. 9 of the PPP Regulations also applies);
- Section 83 sets out the process of competitive bidding including a reference to the SCM process in the Chapter 11 of the MFMA to be complied with as well; and
- Section 84 deals with negotiation and agreement with the prospective service provider.

Besides the tariff policy and by-laws addressed in sections 74 and 75 of the MSA, section 96 dictates a Credit Control and Debt Collection Policy and section 98 requires the Municipality to adopt bylaws to give effect to its credit control and debt collection policy including its enforcement. These policies and by-laws aim to ensure effective and financially sustainable service delivery.

3.2.3 Local Government: Municipal Finance Management Act, 56 of 2003 & Regulations

The MFMA is a critical element of the policy framework established by the 1998 White Paper on Local Government, together with the Structures Act and the MSA.²⁶ As a whole the MFMA is important in that it regulates municipal fiscal and financial management and sets requirements for the efficient and effective management of the revenue, expenditure, assets and liabilities of municipalities.

In respect of this study the following chapters and sections have specific relevance.

The WTE Facility will be established on municipal owned land adjacent to the Wellington Landfill. It is not envisaged that the land will be transferred or disposed of therefor section 14 of the MFMA that deals with the *alienation* of municipal capital assets will not apply and since the right to use, control or manage the land is dealt with as part of a PPP, the Municipal Asset Transfer Regulations, 2008 (the “**MAT Regulations**”)²⁷ will also not apply. However, the Council must verify if the land is not needed for other essential municipal services.

The MFMA overlaps with the MSA. Prior to entering into a PPP, the municipality must conduct a feasibility study that deals with a wide range of aspects including strategically operational benefits. Once the feasibility study has been completed the accounting officer’s report together with all relevant documents must be considered by Council for a decision in principle as to whether it can proceed with such a PPP, or not. The feasibility study content and the processes necessary to ensure that best practice external service delivery relationships such as PPPs are established is provided for in section 120 of the MFMA and the PPP Regulations. Section 120(4) *inter alia* requires that the feasibility study be made public and the community and other interested parties be invited to comment thereon.

The PPP Regulations define a PPP and put forward three criteria for measuring when a contract between a municipality and a private party could be regarded as a PPP:

“public-private partnership” means a commercial transaction between a municipality and a private party in terms of which the private party—

- (a) *performs a municipal function for or on behalf of a municipality, or acquires the management or use of municipal property for its own commercial purposes, or both performs a municipal function for or on behalf of a municipality and acquires the management or use of municipal property for its own commercial purposes; and*
- (b) **assumes substantial financial, technical and operational risks in connection with-**
 - (i) *the performance of a municipal function;*
 - (ii) *the management or use of municipal property; or*

²⁶ Like the Public Finance Management Act, Act No. 1 of 1999 (the “**PFMA**”) which covers the national and provincial spheres of government, the MFMA gives effect to section 216 of the Constitution which envisages uniform treasury norms and standards for all spheres of government. Given the complexities of the local sphere the MFMA was prepared separately after removing the local sphere of government from the initial scope of the PFMA (as tabled). Though similar to the PFMA in many respects, the MFMA covers additional chapters on co-operative governance, debt, resolution of financial problems, procurement of goods and services, and financial reporting and auditing.

²⁷ Chapter 4 of the MAT Regulations, 2008

- (iii) both; and
- (c) receives a benefit from performing the municipal function or from utilizing the municipal property or both by way of-
- (i) consideration to be paid or given to the municipality or a municipal entity under the sole or shared ownership of the municipality;
 - (ii) charges or fees to be collected by the private party from users or customers of a service provided to them; or
 - (iii) a combination of the benefits referred to in subparagraphs (i) and (ii);

The definition is drafted in such a way that there must be compliance with all three subsections for it to be a PPP and the WTE project does comply with all three criteria.

It is specifically stipulated that municipalities may only enter into Public Private Partnerships (PPP) if the municipality can demonstrate that the agreement will:

- provide Value-for-Money (“VfM”)²⁸,
- be affordable²⁹, and
- transfer appropriate technical, operation and financial risk to the private party.

The PPP Regulations inter alia stipulate that the municipality is obliged to obtain the views and recommendations of National and Provincial Treasury no less than four times before finally concluding an external service provision agreement.³⁰ It also prescribes consultation with the Department of Co-operative Governance and Traditional Affairs (“COGTA”) and the relevant national departments which in this case will be the Department of Environmental Affairs (“DEA”) and the Department of Water Affairs (“DWA”).

Section 33 of the MFMA has a wide range of provisions regarding contracts that have a future budgetary implication and how such contracts should be adjudicated and awarded. It stipulates that, if a contract will impose **financial obligations** on the municipality beyond the 3 years covered in the annual budget for that financial year, the contract may in terms of section 33(1)(a) only be entered into if the municipal manager has, at least 60 days prior to the Council meeting at which the contract is to be approved:

- made public the draft contract in accordance with section 21A of the MSA including an information statement summarising the municipality’s obligations in terms of the proposed contract and invited comments;
- solicited the views and recommendations of National Treasury, the Provincial Treasury, the Department of Co-operative Governance and Traditional Affairs and any other national department with an interest; and

Taken the following into account – Section 33(1)(b):

- Its projected financial obligations in terms of the contract for each year of its duration
- The impact of these financial obligations on future municipal tariffs and revenue
- Comments and representations from the community and IAPs
- Views and recommendations from Treasury et al.

²⁸ In terms of the PPP Regulations, VfM means the performance of a private party in terms of the agreement will result in a net benefit to the municipality in terms of cost, price, quality, quantity, risk transfer or any combination of those factors. From a municipal perspective the contextual framework within which the project develops adds other criteria that further defines VfM as it applies to a specific municipality’s circumstances.

²⁹ In terms of the PPP Regulations, “affordable” means that the financial obligations to be incurred by the municipality ito. a PPP agreement can be met by:

- Funds designated in the municipality’s budget for the current year for the service/activity to be outsourced;
- Funds destined for the service/activity i.r.o. future budgetary projections;
- Any allocations to the municipality and
- A combination of such funds or allocations.

³⁰ Due to the bidding process already followed by Drakenstein and as clarified with NT, the Municipality will consult NT on two occasions.

Adopted a resolution – Section 33(1)(c) - in which:

- *It determines that the municipality will secure a significant capital investment or will derive a significant financial economic or financial benefit from the contract*
- *It approves the entire contract exactly as it is to be executed*
- *It authorises the municipal manager (accounting officer) to sign the contract on behalf of the municipality.*

Section 33(2) deals with circumstances when Section 33(1) will not apply and *inter alia* states that if the financial obligation on the Municipality is below a prescribed value or a prescribed percentage of the municipality's approved budget for the year in which the contract is concluded, the process set out above will not apply.

It is not possible to measure the affordability; VfM and risk transfer of a project without proper contract, performance and risk management and monitoring. The MFMA complements the MSA to ensure these processes are built into the project cycle.

Performance Management Legislative Mandate:

As implied in section 41 of the MSA a municipality is obliged to extend its own performance monitoring to all its external service providers. The legislative mandate is further stipulated in section 46 of the MSA (as amended by Act No. 44 of 2003) which requires that a municipality must, for each financial year, prepare a performance report reflective of the performance of each external services provider during that financial year and that the annual performance report should be part of the municipality's annual report submitted as per section 121(3) of the MFMA to the Auditor General. Furthermore in terms of section 72 of the MFMA, a municipality must submit a mid-year budget and an assessment of municipal performance by the 25th of January each year which, it could be argued, should already include an early assessment of service providers.

Contract Management and Monitoring Legislative Mandate:

A performance review is only possible if a contract in question is properly managed and monitored. Section 116 of the MFMA obliges a municipality to do such management and monitoring and provides guidance on how this is to be done. Briefly, it requires that the contract be properly enforced, performance be monitored on a monthly basis and capacity be established to oversee the day-to-day management of the contract with regular reporting to the Council. Module 6 of the PPP Guidelines specifically deals with managing a PPP agreement. It also includes a three-year review of a (long term) contract.

Risk Management Mandate:

All risks related to an external service delivery contract must be identified and communicated to a municipality's internal audit unit established in compliance with section 165 of the MFMA. The internal audit unit should then include the contract risk profile in its risk-based audit plan.

These mandates form an important part of municipal management and oversight of the project and must therefore be embedded in a PPP contract.

Two further sections of the MFMA have a potential impact although the WTE project does not include any municipal involvement in the international trading of carbon credits (refer to discussion under item 3.6). Section 164 of the MFMA deals with Forbidden Activities and states that a municipality may not conduct any commercial activities 1) otherwise than in the powers and functions assigned to it in terms of the Constitution or national or provincial legislation and 2) outside the borders of the Republic. Besides this stipulation, the international trading of carbon credits also involve risks which could trigger Section 163 of the MFMA that forbids a municipality to incur a liability or risk payable in a foreign currency.

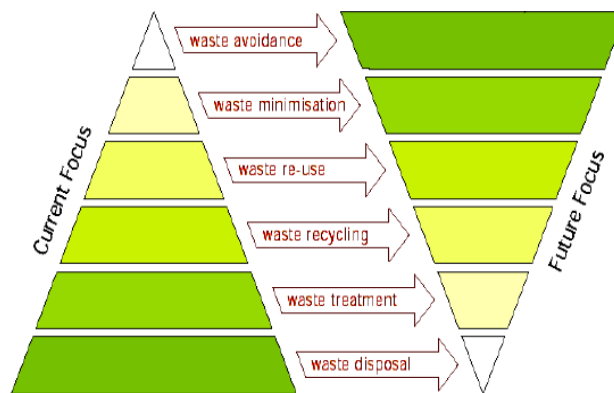
3.3 ENVIRONMENTAL AND WASTE RELATED LEGISLATION, POLICIES AND PLANS

Apart from a constitutional obligation in respect of a clean and healthy environment, a myriad of acts, policies and strategies apply to this function and necessitate the existence of a comprehensive waste management system. Primarily waste management is based on the principles of the White Paper on Integrated Pollution and Waste Management, 2000 (the "^{WP}IP&WM"), the NWMS and the subsequent enactment of NEMWA that promotes cleaner production, waste minimisation, reuse, recycling and waste treatment with disposal seen as a last resort in the management of waste. The most important applicable legislation and policies are discussed below – as far as possible, in a logical order.

3.3.1 *White Paper on Integrated Pollution and Waste Management, 2000*

To address the generally fragmented, diverse and ineffectively administered waste management situation in SA and eliminate the unco-ordinated way in which pollution and waste is being dealt with, the ^{WP}IP&WM set in motion a process of co-operative governance and law reform. It represented a policy shift to an integrated approach to pollution and waste management focused on pollution prevention, waste minimisation impact control and remediation. The ^{WP}IP&WM identified strategic goals and introduced the waste hierarchy into SA waste management policies. Figure 2 depicts the paradigm shift associated with the introduction of the waste hierarchy.

Figure 2: Waste Hierarchy (Source: NWMS)



The ^{WP}IP&WM highlighted specific functions to be carried out by municipalities, i.e.:

- Compiling and implementing general waste management plans, with assistance from provincial government;
- Implementing public awareness campaigns;
- Collecting data for the Waste Information System;
- Providing general waste collection services and managing waste disposal facilities within their areas of jurisdiction;
- Implementing and enforcing appropriate waste minimisation and recycling initiatives such as promoting the development of voluntary partnerships with industry, including the introduction of waste minimisation clubs;
- where possible, regional planning, establishment and management of landfill sites, especially for regionally based general waste landfills.

3.3.2 *National Environmental Management: Waste Act, No. 59 of 2008*

NEM:WA was enacted in March 2009 and took effect from 1 July 2009. The act legally embedded the waste hierarchy as the overarching principle for waste management in SA. It regulates the following matters:

- establishment of a national waste management strategy;

- national norms and standards; provincial norms and standards and waste service standards³¹;
- institutional and planning matters including the designation of waste management officers and integrated waste management plans for all spheres and sectors including local government and individual municipalities³²;
- waste management measures including minimisation, reduction, recycling, re-use and recovery of waste; storage, collection and transportation of waste; treatment, processing and disposal of waste; industry waste management plans and contaminated land,
- licensing of waste management activities³³; and
- establishment of a national waste information system³⁴.

Of substantial importance are the stipulations in respect of municipalities as set out in section 9, the most important of which are the following:

- Adherence to all national and provincial norms and standards;
- The need for an integrated waste management plan and integration thereof with the IDP;
- Affordable tariffs;
- Keeping separate financial statements, including a balance sheet of the services provided;
- The annual performance report prepared in terms of section 46 of the MSA to contain information on the implementation of the IWMP in so far as it relates to the performance of the municipality.

3.3.3 National Waste Management Strategy

The NWMS is a legislative requirement of the NEMWA. It gives effect to the objects of the act and sets out the overall goals and approach to implement the waste hierarchy and the mechanisms, challenges, roles and responsibilities involved. The waste hierarchy is a systematic and hierarchical approach to waste management.

Implementation of the broader social and economic objectives which the NWMS aims to achieve also commits municipalities to the following goals:

- Securing ecologically sustainable development while promoting justifiable economic and social development, e.g. increasing job creation in the waste services, recycling and recovery sectors;
- Avoiding and minimizing the generation of waste through mechanisms such as volume based tariffs and consumer awareness;
- Reducing, re-using, recycling and recovering waste *inter alia* through the establishment of separation at source practices, more MRFs and developing WTE options;
- Promoting and ensuring the effective delivery of waste services, e.g. basic waste services to all including indigents;
- Treating and safely disposing of waste as a last resort including WTE and improved landfill management;
- Remediating land where contamination presents a significant risk of harm to health or the environment;
- Achieving integrated waste management planning, i.e. as stated sector and local IWMPs;
- Sound budgeting and financial management for waste services thus moving towards full cost accounting and tariffs that are reflective of these costs;

³¹ A number of national standards have been set or are in process, *inter alia* the National Domestic Waste Collection Standards (the "**Collection Standards**") published in Government Gazette No. 33935 of 21 January 2011; Draft National Norms and Standards for the Storage of Waste (the "**Storage Standards**"), General Notice 436 published in Government Gazette No. 34418 of 1 July 2011; Draft National Standard for Disposal of Waste to Landfill (the "**Disposal Standards**"), General Notice 432 published in Government Gazette No. 34414 of 1 July 2011; Draft National Standards for the Extraction, Flaring or Recovery of Landfill Gas in South Africa (the "**Landfill Gas Standards**"), General Notice 434 published in Government Gazette No. 34416 of 1 July 2011 and Draft Standard for Assessment of Waste for Landfill Disposal (the "**Assessment Standards**"), General Notice 433 published in Government Gazette 34415 dated 1 July 2011.

³² Refer to the MWSP and the IWMP of Drakenstein.

³³ Refer to Government Notice 178 published in Government Gazette No. 32368 dated 3 July 2009 and General Notice 1113 published in Government Gazette No. 33880 dated 14 December 2010.

³⁴ Refer to the National Waste Information Regulations (the "**NWI Regulations**"); Government Notice 718 published in Government Gazette No. 33384 dated 23 July 2010.

- Adequate staffing and capacity for waste management including the appointment of waste management officers and mobilising private sector capacity;
- Effective compliance with and enforcement of waste regulations implying an up to date waste by-law inclusive of new regulations, effective enforcement of the by-law and successful prosecution of waste offenders;
- Effective monitoring and reporting on performance with waste functions thereby including key performance indicators in the performance plan of the institution and individual waste staff members;
- Ensure that people are aware of the impact of waste on their health, well-being and the environment through local awareness campaigns.

As so strongly pointed out by the Local Government Turnaround Strategy (the “**LGTAS**”), the NWMS also recognises that fiscal, spatial, functional and capacity differences between municipalities necessitate a differentiated approach to waste services provision that correlates with the resources and capacity of each municipality, e.g. the vast difference between rural and urban challenges and revenue generating capacities. It committed the DEA to prepare a sector plan for addressing waste services backlogs in local government and a Policy for Free Basic Refuse Removal³⁵.

3.3.4 *Western Cape’s Draft Strategic Plan, 2010*

The WCSP includes 12 overarching strategic objectives for the Western Cape including the ‘Mainstreaming of Sustainability and Optimising Resource-use Efficiency’ which includes pollution and waste management.

In terms of the policy priority ‘climate change mitigation and adaptation’ the PGWC has adopted the following strategic targets and outcomes applicable to this study:

- facilitate and promote processes which will contribute to a target of 15% of the electricity used in the province being generated from renewable energy sources by 2014;
- Increase the percentage of waste diversion from landfill through the following initiatives:
 - Develop the Provincial Integrated Waste Management Plan by 2011 and implement it by 2014;
 - License applications for waste management activities;
 - Co-ordinate, assess and monitor ‘second generation’ municipal and selected industry first generation waste management plans by 2014;
 - Complete and Implement the Health Care Waste Management Amendment Act and Regulations by 2012;
- Reduce environmental quality impacts on environmental resources (land and water) by:
 - Approving 50% of received remediation applications;
 - Implementing the Action Plan of the Western Cape Provincial Programme of Action to reduce marine pollution from land-based pollution sources;
 - Co-ordinating chemicals management action plans in 3 industry sectors.

3.3.5 *Western Cape Provincial Spatial Development Framework, 2005*

The Provincial Spatial Development Framework (the “**PSDF**”) voices the concern that a number of waste landfill sites in the Western Cape are not properly managed. In addition to the challenges of managing increasing waste volumes and decreasing land available for waste disposal, the Western Cape, along with other Provinces, has to deal with waste management problems caused by inequitable development and inadequate service delivery. It is recognised that waste issues are often closely associated with poverty, environmental health and social justice issues.

A Draft Policy on Free Basic Refuse Removal was published under General Notice 1476 in Government Gazette No. 32688 on 6 November 2009. It was followed by the National Policy for the Provision of Basic Refuse Removal Services to Indigent Households (the “**BRR Policy**”) published under General Notice 413 in Government Gazette No. 34385 on 22 June 2011. It aims to provide sustainable access to basic refuse removal for indigent households but pertinently acknowledges the differentiated capacities of municipalities to provide such services.

The following policies have relevance in respect of the planned waste developments in the study:

- **RC32:** All municipalities shall follow an integrated hierarchical approach to waste management consisting of the following: avoidance/reduce, reuse, recycle, composting, treatment and final disposal. The Waste Management System shall consist of a collection service from the source, (domestic, office or factory) transfer stations and waste disposal sites;
- **RC33:** Waste separation at source shall be mandatory in all domestic households and institutions and businesses including high density and multi-storey buildings from a date to be announced. Initially only organic (vegetable and plant matter) and inorganic (usually dry, cardboard, glass, plastics, paper, builders' rubble) waste shall be separated;
- **RC34:** Material Recovery Facilities shall be established at all transfer stations;
- **RC35:** Engage with the raw material and packaging industries and reach agreement to ensure demand for recycled products;
- **RC36:** Every urban settlement should have a Transfer Station within a maximum of 5 kilometres from the town centre, inside the Urban Edge;
- **RC37:** Every municipality shall have a Waste Disposal facility site located and operated according to the minimum requirements of the Department Water Affairs (DWA) that will service transfer stations in the urban settlements of that municipality. These sites may or may not be located within the Urban Edge of urban settlements. The main criteria for their location will be to meet satisfactory environmental and transport requirements.

3.3.6 *Municipal Waste Sector Plan, 2011*

The Municipal Waste Sector Plan (the "MSWP") was prepared by DEA as undertaken in the NWMS presents national government strategy to address municipal solid waste service delivery and infrastructure backlogs within the context of municipal capacity and aligned with the objectives of the LGTAS. It was promulgated on 30 March 2012, GN No. 270, published GG No. 35206 on 30 March 2012.

The principal strategic objectives of the MWSP are:

- Waste reduction: reducing the amount of general and hazardous waste being generated and disposed in the country;
- Appropriate disposal: Ensuring that all waste is disposed of appropriately – in a manner that is not detrimental to the environment and human health; and
- Waste service delivery: providing adequate domestic waste collection services across the country, thus ensuring protection of the environment from unmanaged waste, and providing all communities with access to a basic refuse removal service in line with national and provincial service delivery targets - the target being 75% of households by 2013/14.

The challenges of financial, institutional and technical capacity contributing to the backlogs will determine the baseline and target percentages of each municipality with respect to reduction in backlogs, increased budget allocation, increase in infrastructure and capital assets; increase in skills; job opportunities, etc.

The MWSP emphasizes the role of industry partners to *inter alia* assist with reduced waste disposal at landfill through increased recycling and building the sustainability of the rather volatile recycling industry in SA and energy recovery from waste. Other interventions proposed are: separation at source, landfill management, improved data and information; phasing out of salvaging at landfills; regionalisation of landfills; optimising waste collection systems through awareness, planning, maintenance, capacity building and enforcement of by-laws.

3.3.7 *National Environmental Management Act, 107 of 1998 (as amended in 2004)*

The National Environmental Management Act, No. 107 of 1998 ("**NEMA**") is the principal act for environmental issues and as such it has direct relevance for the implementation of the National Waste Management Strategy ("**NWMS**"). Chapter 7 of NEMA has important direct implications for the achievement of the NWMS initiative on a national level and on a local level this is stipulated by the IWMP of Drakenstein Municipality.

NEMA *inter alia* contains the following environmental principles applicable to this study:

- Environmental management must put people and their needs at the forefront, and must serve their interest fairly;
- Development must be socially, environmentally and economically sustainable. This means that the following things must be considered before there is development:
 - Disturbance of ecosystems and loss of biodiversity
 - Pollution and degradation of the environment
 - Disturbance of landscapes and sites where the nation's cultural heritage is found
 - Non-renewable resources must be used responsibly
 - The precautionary principle must be applied
 - Negative impacts must be anticipated and prevented and if they cannot be prevented they must be minimised or remedied;
- Environmental management must be integrated and the best practical environmental option must be pursued;
- Equitable access should be provided to environmental resources, benefits and services to meet basic human needs;
- Responsibility for environmental health and safety of any policy, programme or project must continue throughout the life cycle of a project;
- Public participation in environmental decision-making must be promoted;
- Community well-being and empowerment must be promoted through environmental education; and
- There must be inter-government co-ordination and harmonisation of policies and laws.

NEMA provides that no one may commence with any listed activities before obtaining environmental authorization from the competent authority. Anyone wishing to obtain such authorization must follow a *basic* or a *full* environmental impact assessment process, depending on the type of activity envisaged³⁶. The WTE Facility will require a full EIA³⁷ process inclusive of public participation at various stages of the assessment process.

3.3.8 *National Environmental Management Air Quality Act, 39 of 2004*

Regulating air quality monitoring, management and control is the purpose of the National Environmental Management: Air Quality Act (the "**NEM:AQA**"). The act is systematically replacing the Atmospheric Pollution Prevention Act, 45 of 1965 and provides for the listing of activities resulting in atmospheric emissions and the establishment of minimum emission standards for substances resulting from these activities. The act recognises that the minimisation of pollution can be achieved through control and the implementation of cleaner production practices and cleaner technologies.

3.3.9 *National Policy on Thermal Treatment of General and Hazardous Waste, 2009*

The policy provides the framework within which the following thermal waste treatment technologies must be implemented in SA, i.e.:

- the incineration of general and hazardous waste in dedicated incinerators or other high temperature thermal treatment technologies, including but not limited to pyrolysis and gasification; and

³⁶ List of Waste Management Activities that have, or are likely to have a Detrimental Effect on the Environment, 2009 published in Government Gazette 32368 (Notice No 718) of 3 July 2009 read with the Environmental Impact Assessment Regulations, 2010 (the "**EIA Regulations**") published in Government Gazette 33411 (Notice No 664) of 30 July 2010.

³⁷ In terms of the EIA Regulations the competent authority would ideally take a decision within 30 days, but built into the regulations are extension periods which effectively allow for 120 days if the application complies with all requirements. Taken into account the required content of a full environmental impact assessment and its public consultative process, it could realistically be assumed that it would take no less than 12 months to obtain an environmental authorization.

- the co-processing of selected general and hazardous wastes as alternative fuels and/or raw materials in cement production.

This policy gives the certainty that was needed to allow for the development of alternative waste treatment technologies as will be used in the WTE Facility.

3.3.10 *Environment Conservation Act, 73 of 1989*

The act has largely been replaced by a new generation of environmental legislation but is still relevant in respect of existing licences. Within the parameters of this legislation, a management structure based on the *Minimum Requirements Series* was developed. This is an important source of information, particularly relating to the disposal of waste, although it does not have the status of law. Once a minimum requirement is included in a landfill site permit, it is legally enforceable.

3.3.11 *Hazardous Substances Act, 15 of 1973*

This Act provides for regulations to be issued in order to control the dumping and disposal of hazardous waste. Where local government is involved in the disposal of empty containers used for Category B Group I substances, it must refer to Regulation GG5467 of 25 March 1977. In identifying and classifying dangerous goods and substances, the SANS Code 0228 is used.

3.3.12 *Western Cape Health Care Waste Management Act, 7 of 2007 & Regulations*

The Act provides for the effective handling, storage, collection, transportation, treatment and disposal of health care waste. In 2010 the Act was substantially amended to align with the NEM:WA and to make provision for better enforcement thereof. Draft Regulations published in 2011 deals in more practical details with transportation, record-keeping, registration on the IPWIS, etc.

3.3.13 *Other relevant National Standards, Regulations, Notices*

A number of other legislative instruments may be relevant to the project whether it be to the process of establishment or the management and operation of the various components if the project is successfully established. These are:

- *Waste Tyre Regulations, 2008 in terms of the ECA, GN No. R.149 of 2009, published in GG No. 31901 of 13 February 2009;*
- *List of Waste Management Activities that have, or are likely to have a detrimental effect on the Environment, in terms of NEMA, General Notice (GN) No. 718 of 2009, published in Government Gazette (GG) No. 32368 of 3 July 2009;*
- *Draft Guiding Document on the Preparation of Industry Waste Management Plans to NEM:WA, Notice 573 of 2010, published in GG No. 33264 of 11 June 2010;*
- *National Waste Information Regulations to NEM:WA, Notice 718 of 2010, published in GG No. 33384 dated 23 July 2010;*
- *Draft National Standards for the Scrapping or Recovery of Motor Vehicles to NEM:WA, GN No. 431 of 2011, published in GG No. 34413 of 1 July 2011;*
- *Draft National Standard for Disposal of Waste to Landfill to NEM:WA, GN No. 432 of 2011, published in GG No. 34414 of 1 July 2011;*
- *Draft Standard for Assessment of Waste for Landfill Disposal to NEM:WA, GN No. 433 of 2011, published in GG No. 34415 of 1 July 2011;*
- *Draft National Standards for the Extraction, Flaring or Recovery of Landfill Gas in South Africa to NEM:WA, GN No. 434 of 2011, published in GG No. 34416 of 1 July 2011*
- *Draft Waste Classification and Management Regulations in terms of NEM:WA, GN No. 435 of 2011, published in GG No. 34417 of 1 July 2011;*
- *Draft National Norms and Standards for the Storage of Waste to NEM:WA, GN No. 436 of 2011, published in GG No. 34418 of 1 July 2011; and*
- *Draft Health Care Risk Waste Management Regulations to NEM:WA, GN No. 452 of 2012, published in GG No. 35405 of 1 June 2012.*

3.4 ENERGY LEGISLATION, POLICIES AND PLANS

A plethora of acts, policies and plans makes up the energy legal and institutional framework mapped out by the Department of Energy (“**DoE**”), some of which laid the foundation for a diversified energy sector and others enabling and regulating the new role-players entering the energy generation market. The discussion below highlights important acts, policies, plans and concerning the WTE project.

Most important is the realisation that the evolving nature of the legal and institutional energy environment in SA has a direct influence on Independent Power Producers (“**IPP**”) such as the private entity that will partner the Municipality in the WTE project. IPPs’ entrance into the power generation market is through a state procurement programme and a complex “contractual suite” which it is hoped would be simplified by the evolving legislation.

3.4.1 *White Paper on Renewable Energy Policy, 2003*

The White Paper on Renewable Energy Policy, 2003, (the “**WPREP**”) set out to promote renewable energy and integration of renewable energies into the mainstream energy economy. Biomass from organic material including the organic components in municipal and industrial wastes is recognised and energy from waste is accordingly one of the renewable energy resources included in the policy. So is biogas and landfill gas. The **WPREP** set an initial target of 10 000 GWh of renewable energy by 2013.

3.4.2 *National Energy Regulator Act, 40 of 2004*

The National Energy Regulator Act, 40 of 2004 (the “**NERA**”) establishes a single regulator to regulate the electricity, piped-gas and petroleum pipeline industries. It sets out the functions, composition and all other matters related to the National Energy Regulator of South Africa (“**NERSA**”).

3.4.3 *Electricity Regulation Act, 4 of 2006*

The second amendment bill of the Electricity Regulation Act, 4 of 2006 (the “**ERA**”) is in process. The ERA establishes a national regulatory framework for the electricity supply industry; makes the NERSA the custodian and enforcer of this framework and provides for licences and registration as the manner in which generation, transmission, distribution, dispatch, reticulation, trading and the import and export of electricity are regulated. “Dispatching” is added through the amendment bill to regulate the scheduling, coordination and management of the flow of electricity **in and out** the national transmission power system. However, “wheeling”, i.e. the flow or transporting of electricity **over** the transmission lines from the generation facility to the substation from where it is distributed, is not yet addressed in the amendment act.

It also provides for the Integrated Resource Plan, 2010 (the “**IRP**”) and the Independent Power Producer (“**IPP**”) procurement process, including a Power Purchase Agreement (“**PPA**”). The objects of the ERA are inter alia to promote the use of diverse energy resources, renewable sources of energy and energy efficiency.

NERSA is the electricity licencing authority for generating facilities, transmission or distribution power systems and the import, export and dispatch of electricity and sets the tariffs. The act also refer to municipalities having to comply with the legal process set out in the MSA and the MFMA to procure external service providers, i.e. the process followed by this study.

In terms of section 34 of the Act, the Minister, with concurrence of NERSA, may make a determination in terms of the extent of new generation capacity needed, the types of energy source from which the electricity may be generated and the amount that may be generated from each of the sources.

3.4.4 National Energy Act, 34 of 2008

The aim of the National Energy Act, 34 of 2008 (the “NEA”) is to ensure that diverse energy resources are available in sustainable quantities and at affordable prices including the increased generation and consumption of renewable energies. It defines renewable energy as “energy generated from natural non-depleting resources including solar energy, wind energy, biomass energy, biological waste energy, hydro energy, geothermal energy and ocean and tidal energy”.

3.4.5 Western Cape Draft White Paper on Sustainable Energy, 2009

The Western Cape Draft White Paper on Sustainable Energy, 2009 (the “^{WC}WPSE”) mobilises the Western Cape to embark on a more sustainable path of energy production and use enabled through energy demand management programmes and support for a mix of renewable and clean energy technologies. The long term 2020 strategy has the following targets:

- Energy efficiency programmes achieve a 15% saving;
- Clean and renewable energy contributes to 15% of the energy mix; and
- Emission reductions of 15% are achieved.

3.4.6 Electricity Regulations on New Generation Capacity, 2011

The Electricity Regulations on New Generation Capacity, 2011³⁸ (the “ERNGC”) is very relevant to the WTE project. The objectives of the regulations are:

- a) to facilitate planning for the establishment of new generation capacity;
- b) the regulation of entry by a buyer and a generator into a PPA;
- c) to set minimum standards or requirements for PPAs;
- d) the facilitation of the full recovery by the buyer of all costs efficiently incurred by it under or in connection with a PPA including a reasonable return based on the risks assumed by the buyer thereunder and to ensure transparency and cost reflectivity in the determination of electricity tariffs; and
- e) the provision of a framework for implementation of an IPP procurement programme and the relevant agreements to be concluded.

The Regulations defines the “buyer” as any organ of state designated by the Minister as per a determination made in terms of section 34 of the ERA and sets out the requirements to be met by a PPA as:

- a) VfM (value-for-money);
- b) appropriate technical, operational and financial risk transfer to the generator;
- c) effective mechanisms for implementation, management, enforcement and monitoring of the PPA; and
- d) satisfactory due diligence in respect of the buyer’s representative and the proposed generator in relation to matters of their respective competence and capacity to enter into the PPA.

The regulations oblige the buyer or procurer, before concluding the PPA, to ensure all approvals required in terms of the PFMA (e.g. the same feasibility study, consultation, reporting and procurement processes as in the MFMA) are in place, and, in doing so to:

- a) ensure the above requirements are met;
- b) the buyer has a contract management plan in place to enable regular reporting on the PPA to NT and the Minister; and
- c) the buyer has ring-fenced the revenue approved or allocated by the Regulator for new generation capacity projects so that the buyer can honour its financial obligations in terms of these projects.

³⁸ Regulation Gazette No. 9539 published in Government Gazette No. 34262 dated 4 May 2011

3.4.7 Renewable Energy Feed-in Tariff Programme and the Integrated Resource Plan

Further in terms of the national mandate, NERSA produced the Renewable Energy Feed-in-Tariff (the “REFIT”) Programme, the selection criteria of renewable energy projects under the REFIT programme and PPAs to enable the access of IPPs to the energy supply market as well as the initial procurement documentation for the full project cycle. These documents were refined by insourced expertise.

The IRP developed as a 20 year projection on electricity supply lays the foundation of the country’s energy mix up to 2030. It makes provision for a diversified energy mix that will comprise coal, gas, nuclear and renewable energy carriers. It gives effect to the ^{WP}REP target of 10 000 GWh for 2013 and envisages that renewables would contribute 42% of SA’s new generation capacity by 2030. The REFIT procurement process³⁹ was set as the starting point in implementing the IRP. It has bidding rounds planned during which IPPs can enter the energy market.

Initially the government determined a fixed REFIT structure for the various technologies but when it changed the process to a two envelope competitive bidding process it also capped the price for each technology to levels below the 2009 REFIT as promulgated. The capped tariffs as determined differ as follow from the initial indications:

Table 4: REFIT/REBID Tariff Adjustments

Energy	2009	Capped-2012	% less
biomass	118c/kWh	107c/kWh	9%
biogas	96c/kWh	80c/kWh	17%
landfill gas	90c/kWh	60c/kWh	32%

During the first bidding round that ended in November 2011 the government procured 1 416 MW of renewable energy transactions by approving 28 projects of the 53 involving 2128 MW submitted. NERSA held the public hearings on the licence applications of the 28 IPPs. The results of the second bidding round that closed on 5 March 2012 were announced on 21 May 2012. From a total of 79 bids received the DoE selected 19 preferred bidders with projects having the potential to produce 1044MW made up of 9 solar photovoltaic bids, 7 wind projects, 2 hydropower projects and 1 concentrated solar power project. The projects have a value of R28,1bn with R11,8bn in local content value, thus emphasizing the importance of the latter.

The government wishes to procure 3 725 MW of renewables capacity before or at least by 2016. Based on the mentioned figures it thus appears that the first two bidding rounds took up an allocation of 2 459MW of generation capacity and only 1 166MW remains to be procured in the upcoming three bidding windows.

Note:

2 kilowatts (KW) is sufficient to provide power to one household, a standard three bedroom house, and 1KW would be enough for one Reconstruction and Development Programme (RDP) house; therefore 1MW would be sufficient to provide power for 1000 RDP houses.

Further bidding rounds will focus on biomass, biogas and landfill gas and demand a fairly high percentage of local content from certain technologies. As per the section 34 determination dated August 2011, government looks at procuring amongst others 25MW of landfill gas and 12.5MW apiece of biomass and biogas capacity but these allocations are not fixed. The determination set the minimum MW per technology at 1MW and the maximum capacity per plant at 10 MW for hydro, biomass and biogas respectively. 100 MW was set aside for small projects up to 5 MW and 100MW was to be produced by Eskom.

The Drakenstein WTE project might make the fifth and last bidding round of the current REFIT procurement programme scheduled between May 2013 and May 2014 provided the private party can meet one of the most important qualifying criteria, e.g. the Environment Impact Assessment's Record of Decision (the "EIA^{ROD}") i.e. the environmental authorisation received. However, this is crucial since the section 34 determined that projects procured by the IPP procurement programme must be in operation at least by 2016.

According to the procurement and selection rules laid down by the first rounds of IPP selection a bidder's price would only be considered once it had met the other criteria which include environmental acceptability, land security, commercial robustness, economic development, financial viability, technical competence and capacity. The economic development criteria relate to job creation, the involvement of historically disadvantaged individuals, community development and economic spinoffs such as the localisation of components and solutions. The procurement process also has a built-in zero tolerance for any collusive and uncompetitive behaviour with the penalty of immediate disqualification and the loss of the bid bond, i.e. a refundable guarantee of R100 000/MW required on submission.

As per the ministerial determination in terms of section 34 of the ERA, the current "buyer" under the REFIT programme is Eskom with selected bidders (IPPs) having to conclude a PPA with Eskom. A second contractual arrangement is the Connection Agreement ("CA") with either Eskom or a municipality and thirdly an Implementation Agreement ("IA") between the IPP and the DoE with aspects such as Black Economic Empowerment ("BEE") and risk management hard-wired into the agreement and at least a 40% SA owned requirement. In effect a private party partnering a municipality in a WTE project is simultaneously a partner to Eskom and the DoE and has to go through rigorous procurement processes to reach this position. The municipal procurement process is in accordance with the Supply Chain Management Regulations (the "SCM Regulations") in terms of the MFMA and the national government procurement processes in terms of the Public Finance Management Act (the "PFMA"). Both of these processes are open, fair, transparent and competitive.

According to the DoE the approved IPP projects initially each receives a two year PPA from Eskom but could be converted into projects accepted under the larger renewables procurement programme. Should that be the case a new PPA would have to be negotiated and the capacity is deducted from the MW sought under the REFIT programme. If municipalities were to enter into PPAs with IPPs these would have to be approved by NERSA. Recently, eThekweni was authorised to purchase electricity from IPPs at the Mega Flex rate, i.e. the rate at which municipalities are purchasing electricity in bulk from Eskom.

The 2009 REFIT tariffs made provision for an annual review during the first 5 years of the programme and every 3 years thereafter. Since the IPP procurement process only started in 2011 this could not be done. However, this process will have to resume and also include the changes in financial and economic parameters since ERA requires NERSA to set and approve tariffs that shall 'enable an efficient licensee to recover the full cost of its licensed activities, including a reasonable margin of return'.

3.4.8 Independent System and Market Operator Bill, 2012

As indicated, Eskom was designated as the state organ that must act as the 'buyer' of renewable energy under the REFIT programme. The selected bidders or IPPs have to conclude a PPA with Eskom and these PPAs between the 'state buyer' and IPPs have to be approved by NERSA. Eskom controls electrical systems planning and operations and the transmission of power. It was the referee, a player and the umpire in the same business.

By introducing the Independent System and Market Operator Bill (the "ISMO") the government recognises that the SA electricity industry has a monopolistic structure regulated by NERSA and that it does not provide for the independent purchase of power from the private sector. The ISMO Bill therefore wishes to create such an independent structure as a state owned entity that will be

autonomous from its key stakeholders on the supply side and on the demand side in relation to the national electricity transmission system or the electricity grid distribution system. It would also create an entity outside Eskom responsible for planning. In essence, the ISMO would have four core functions, i.e. the buying of power, wholesale, dispatch and planning functions. It would be 100% state owned as it would not be the privatisation of Eskom but the segregation of functions.

The set-up of the ISMO was transitional and would not happen overnight. There has already been a long process of deliberation over the establishment of the ISMO. It has been through the National Economic Development and Labour Council (“**NEDLAC**”) process but still has a long road ahead. In commenting on the ISMO Bill, a recurrent concern of the private sector including the SA Independent Power Producers Association (“**SAIPPA**”) is the need that the power grid must also be owned by the ISMO to avoid the IPP having a PPA with one entity and a separate ‘Wheeling Agreement’ with another entity because such an arrangement would make the allocation of liability a contractual nightmare for an IPP.

The WTE facility is a 20 – 25 year project and changes in its regulatory framework will impact on the project and its contractual arrangements throughout its lifespan.

3.4.9 Working for Energy

The *Working for Energy* Programme (“**WEP**”) of the South African National Energy Research Institute (“**SANERI**”) is similar to the *Working for Water* and *Working on Fire* programmes and is aiming to create jobs and skills through localised projects. The WEP has a number of focal points including a number of renewable type projects which could link into the WTE project, e.g. biomass to energy from invasive alien plants and bush encroachments and biogas to energy for rural and non-municipal commercial application derived from agricultural waste.

3.5 CLIMATE CHANGE POLICY AND PLANNING PERSPECTIVES

South Africa has ratified the United Nations Framework Convention on Climate Change (the “**UNFCCC**”) and its Kyoto Protocol (coming to an end in December 2012) and in terms thereof already has existing internationally legal binding obligations to inter alia manage, mitigate and report on its emissions of Greenhouse Gases (“**GHG**”) in order to curb the air pollution blamed for global warming. SA is part of many countries who thus pledged to cut their emissions.

3.5.1 National Climate Change Response White Paper, 2011

On 12 October 2011 the government approved the National Climate Change Response White Paper (the “**NCCR**^{WP}”) the main objectives thereof being to:

- effectively manage the inevitable climate change impacts through intervention that could build and sustain SA’s social, economic and environmental resilience and emergency response capacity; and
- make a fair contribution to the global effort to stabilise GHG concentrations in the atmosphere at a level that avoids dangerous anthropogenic interference with the climate system within a timeframe that enables economic, social and environmental development to proceed in a sustainable manner.

Waste Programme

The NCCR^{WP} outlines a risk-based process to identify and prioritise short –and medium term adaptation interventions to be addressed in sector plans. DEA leads the Waste Management Flagship Programme which will establish the GHG mitigation potential of the waste management sector including investigating waste-to-energy opportunities available within the solid-, semi-solid- and liquid-waste management sectors, especially the generation, capture, conversion and/or use of methane emissions. Based thereon the DEA will develop and implement a detailed waste-related GHG Emission Mitigation Action Plan (the “**WE**^{MAP}”) aimed at measurable GHG reductions. Once again the relevancy of the WTE Project is boldly underlined by national strategy and planning.

3.5.2 UNFCCC Conference of the Parties

The UNFCCC 17th Conference of the Parties (the “**COP 17**”) took place in Durban in December 2011 with the countries involved (only 38 industrialised countries were present) agreeing to a 2nd commitment period of the Kyoto Protocol from January 2013 which will be a legally binding deal that requires countries to turn their economy-wide targets into quantified Emission Reductions (“**ER**”) objectives. Also positive was the establishment of the much awaited Green Climate Fund to assist developing countries with climate change.

Cities on Climate

Local government has moved to the forefront of climate change control when the Global Covenant of Cities on Climate (the “**Mexico City Pact**”) was launched at the World Mayors Summit on Climate in Mexico City in November 2010. Signed by 200 majors all over the world including eThekweni and City of Cape Town, the Mexico Pact sets out why cities are strategic actors in combating global warming and establishes a set of voluntary commitments to promote strategies and actions aimed at reducing GHG emissions and adapting cities to the impacts of climate change. Signatories to the Pact registered their emission inventories, commitments and actions to the carbon Cities Climate Registry (the “**cCCR**”). At the COP 17 114 majors of 28 countries again emphasized their commitment to the strengthening of local resilience for climate change by adopting the Durban Climate Change Adaptation Charter (the “**DCCAC**”).

Cities are encouraged to sign the Mexico Pact and as a secondary city with a known green focus embarking on a WTE project currently without replica in any other municipality in SA and right at the core of the cities’ commitment, the DLM could consider being a signatory to the Mexico Pact.

3.6 CLEAN DEVELOPMENT MECHANISM

The environment, energy and climate change discussion above highlighted the international and national legal, policy and planning environment necessitating, enabling and regulating renewable energy projects. It also broadly discussed the institutional environment within which a WTE roadmap must steer the WTE Project to become a formal part of the renewable energy capacity input into the national energy grid and commercially anchored. But it is the international carbon trading market on which the project would primarily rely to get a return on investment (“**ROI**”) for its extensive capital outlay to ensure its financial viability and sustainability. It is therefore feasible to provide a brief explanation of the legal mechanisms involved to give a holistic view of the complexity and timeframes impacting on the WTE project.

3.6.1 Carbon Trading

The WTE Project will access the carbon trading market through the Clean Development Mechanism (the “**CDM**”) which was established in December 1997 at the 3rd Conference of the UNFCCC. Since the Kyoto Protocol requires countries to limit or reduce their GHG emissions, it sets a national target for each country which the country allocates to its domestic emitters. Each of the domestic emitters can meet its targets through one of three protocol established mechanisms:

- the International Emission Trading (the “**IET**”) that allows countries that have emission units to spare to sell this excess capacity to countries that are over their targets; or
- the Joint Implementation Mechanism (the “**JIM**”) which is designed to assist industrialised (referred to as Annex 1) countries in meeting their targets through investment and development of projects in other Annex 1 countries thus earning Emission Reduction Units (“**ERU**”); or
- the CDM allowing industrialised countries with GHG ER commitments to meet part of those commitments by investing in projects in developing (non-Annex 1) countries that reduce GHG emissions thus gaining Certified Emissions Credits (“**CEC**”) for themselves or by buying Certified Emissions Reductions (“**CER**”) from an entity that invested in such a project. South Africa is such a non-Annex 1 country and the WTE a potential CER project.

By setting emission targets, emission reductions that could be measured, verified and certified i.e. CERs obtained economic value and CER credits can be traded and sold. The opportunity thus exists for a feasible project (such as the Drakenstein WTE project) in a developing country such as SA to attract financing or technology investment from an industrialised country in exchange for carbon credits, i.e. CECs or such a country purchasing the CERs earned by the project from the developer thereof. The host country and region is thus assisted in its shift to a less carbon-intensive economy, attracting private investment, sustainable development and job creation. Especially Landfill Gas (“LFG”) projects are attractive given the benefit of reducing methane emissions since methane is a much more powerful GHG than carbon dioxide, e.g. while 1 tonne of reduced carbon dioxide = 1 CER; 1 tonne of reduced methane = 21 CERs.

3.6.2 CDM Process

The following discussion deals with the CDM steps in detail to create an understanding of the rigorous process that a CDM project must go through to ensure real, measurable and verifiable emission reductions that are **additional** to what would have occurred without the project.

The CDM requires a good governance regime which starts with the host country therefore a host country of CDM must have a Designated National Authority (the “DNA”) in place. In SA the DNA was established within the DoE and approval of the DNA is a pre-requisite for registration of the proposed CDM project with the UNFCCC under the Kyoto Protocol. The main task of the DNA is to assess the potential CDM project to determine whether it will assist the host country in achieving its sustainable development goals. It then provides a letter of approval confirming the latter to the project participants which supports the registration of the by the Executive Board of the CDM (“CDM EB”). The CDM EB is answerable to the Conference of the Parties/Meeting of the Parties (“COP/MOP”) to the Kyoto Protocol, i.e. the parties that have ratified the protocol.

The CDM project cycle and the NDA approval process are set out in Diagrams 1 and 2 below.

Diagram 1: CDM Project Cycle (Source: UNFCCC CDM)

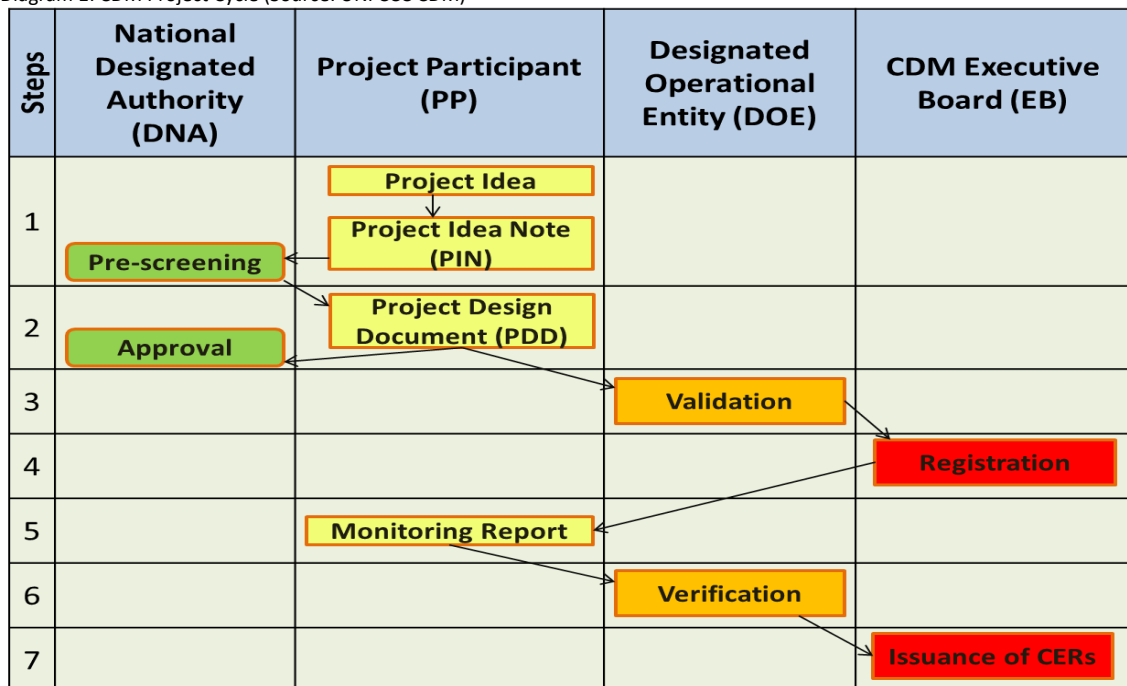
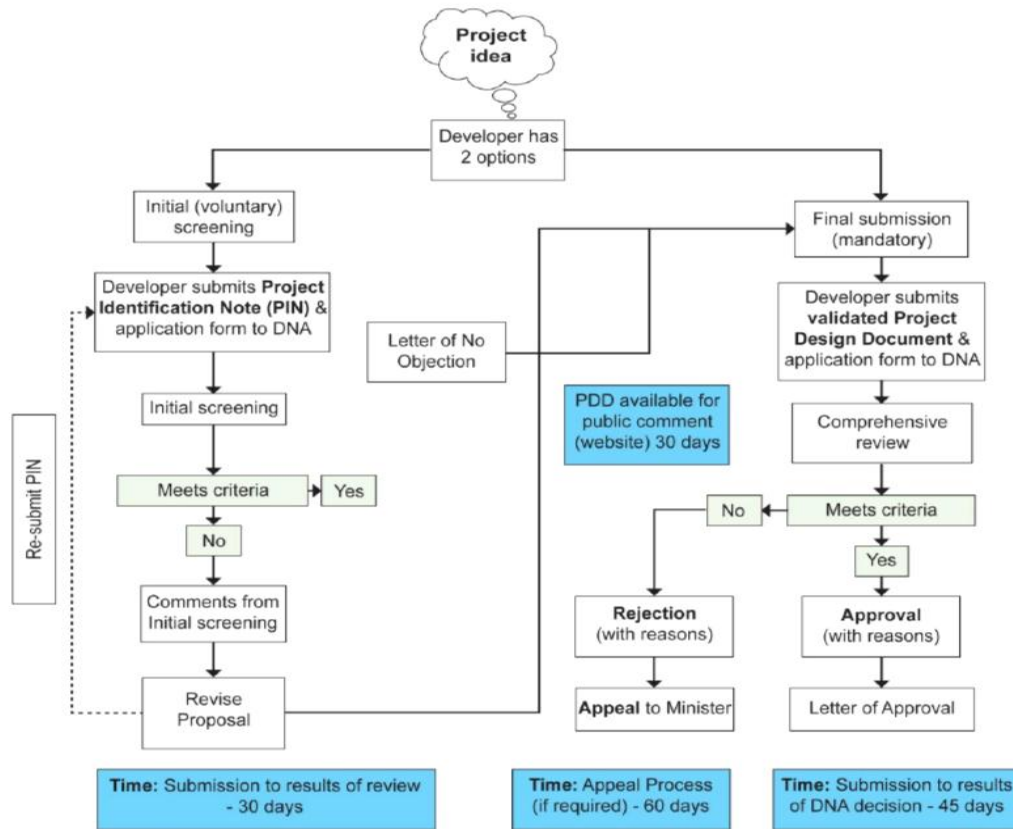


Diagram 2: NDA CDM Project Approval Cycle (Source: DoE)



1. **Project Design:** The Project Participant (“PP”), i.e. the project developer or owner may voluntary submit a brief Project Identification Note (“PIN”) providing the DNA with the opportunity to carry out an initial screening. However, mandatory is the submission of a detailed description of the project via a prescribed Project Development Document (“PDD”). A priority for the DNA is to ascertain that the potential project will assist in achieving sustainable development goals which in SA have broadly been determined as:
 - Economic – the economic impact of the project on: foreign exchange requirements; foreign direct investment; cost of energy; existing economic activity in the area; enabling appropriate technology transfer; local skills development and the replication potential of the project.
 - Social – the alignment with national, provincial and local development priorities; its contribution to sectoral objectives, e.g. the NCCR Waste Management Flagship Programme; its impact on social equity and poverty alleviation including basic service delivery and access, the provision of social amenities, employment levels, etc.
 - General – project acceptability, i.e. are the distribution of the project benefits reasonable and fair.

2. **PDD Approval:** After a public participation process and a comprehensive review the PDD can be approved if it meets the criteria. The DNA submits a letter to the ^{CDM}EB indicating the host country’s ratification of the Kyoto Protocol and containing a statement that the proposed CDM project contributes to sustainable development and is a voluntary action.

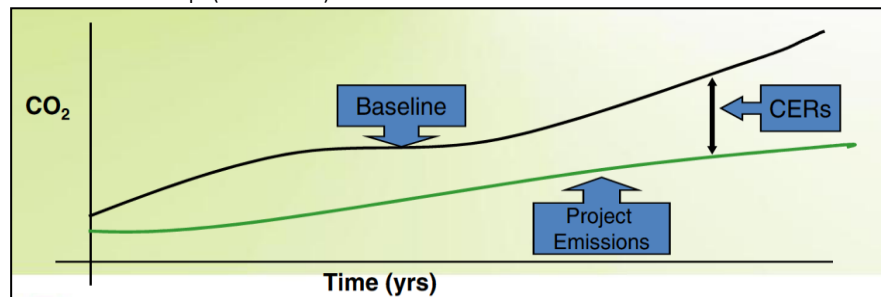
3. **Validation:** Once approved the PDD is submitted to the ^{CDM}EB for validation. Validation is the process of an independent evaluation of a project activity by a Designated Operational Entity (“^{CDM}DOE”) against the requirements of the CDM as set out in CDM modalities and procedures and relevant decisions of the Kyoto Protocol Parties and the ^{CDM}EB, on the basis of the PDD.

All CDM projects are required to use an approved baseline methodology for estimating carbon emission reductions, or to propose a new methodology if an appropriate one is not available. If a methodology previously approved by the ^{CDM}EB and made public is used, the ^{CDM}DOE can proceed with the validation of the project. However, if a new baseline or monitoring methodology is proposed it must first be submitted by the ^{CDM}DOE to the ^{CDM}EB for review and approval, a process taking approximately four months.

A baseline methodology is a protocol for selecting the baseline scenario and calculating baseline emissions for a particular project type or within a particular sector so as to produce a baseline scenario. In other words, a project's GHG emission reductions need to be judged against some baseline and the baseline is 'what would have happened in the absence of the CDM project'. A baseline methodology contains formulae and algorithms for a particular project type and certain parameters for calculating the baseline scenario and also explains how *additionality* will be tested for in that project category.

Additionality is arguably the most difficult concept in assessing and developing CDM project proposals. The UNFCCC Decision 17/CP.7,]43 defines it as: "A CDM project activity is additional if anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the registered CDM project activity." E.g. in respect of LFG management additionality involves two aspects: 1) the ERs from the combustion of LFG and the ERs associated with the use of LFG fuel to offset other fuel uses. The additional ERs can be calculated as the positive difference between the baseline emissions (an as usual scenario) and the emissions resulting after the undertaking of the proposed project. It can be illustrated as in Diagram 3 below.

Graph 1: CDM Baseline Concept (Source: DoE)



4. **Registration:** Once the PDD is validated by the ^{CDM}DOE, a request for registration can be made to the ^{CDM}EB including a registration fee. Unless a review is requested, the registration process can be done within eight weeks but a review can take approximately six months, i.e. within two meetings of the COP/MOP.
5. **Verification:** The ^{CDM}DOE periodically monitors the project activity to verify the ERs achieved by the project which may include site visits, a review of performance records, interviews with project participants and local stakeholders, collection of measurements, observation of established practices, and testing of the accuracy of monitoring equipment to ensure the validity of the emission reductions and the methodologies carried out to calculate them. The results of the verification are made available to both the public and the ^{CDM}EB in the form of a verification report.
6. **Certification and Issuance of CERs:** The ^{CDM}DOE issues a written report, based on its verification report, stating that the project activity has achieved a certain amount of ERs in a specified time period. The report is made available to the PP, COP Parties, ^{CDM}EB and the public and constitutes a request for the issuance of CERs. The issuance of CERs will be considered final after 15 days, unless a COP Party or the PP or the ^{CDM}EB requests a review. If so, the latter must be conducted within 30 days. Decisions are made known to the public and the PP.

3.6.3 Status of the CDM

By mid-April 2012 the UNFCCC reported 4029 CDM projects were registered with 5600 more projects in the pipeline and 2,700,000,000 CERs expected until the end of 2012. Of the registered projects 13,35% (627) concerns waste handling and disposal and of the total number only 2,11% is in Africa while 82,89% is in Asia and the Pacific and 14,53% in Latin America and the Caribbean. South Africa's current Project Portfolio includes 316 projects of which 287 projects have been reviewed, 20 projects have been registered by the ^{CDM}EB and in terms of 8 projects CERs have been issued. E.g. the Durban LFG Bisasar Road Project was issued with 65 711 CERs for the monitoring period 26/03/2009 – 31/08/2009.

There are risk areas concerning the CDM that need to be taken cognisance of. A few of these are:

- Due to the global economic slowdown the price of carbon credits has reduced drastically from around 20Euro/tonne to 10Euro/tonne and there seem to be an oversupply of carbon credits which keeps the carbon market under pressure and the European market is more recently highly affected by the euro-zone crisis which does not seem to have a speedy resolution.
- The European market (in reality a few European countries that rules over the CDM) have also announced that as from 2013 it will seek to conclude carbon trading agreements only with the Less Developed Countries (the "LDC") thus excluding SA. To be kept in mind is that the CDM represents only 5% of the total carbon trading market.
- The rand has depreciated considerably making any imports, e.g. WTE technology more expensive.

3.7 PROPOSED CARBON TAX

The introduction of a carbon tax in SA is currently under debate. NT started off the discussion with its Environmental Fiscal Reform Policy Paper, 2006 and followed it up in December 2010 with a Discussion Paper on the Carbon Tax Option. According to the 2012 Budget Review a 2ND Version of a Draft Policy Paper on Carbon Tax is in the pipeline. Temporary thresholds are proposed, below which, and exemption from carbon tax will be granted for the 1ST phase of implementation from 2013 to 2019. For all sectors, including waste, the introductory threshold is put at 60% with a 40% additional allowance for "process emissions". Thus proposed is that the payment threshold of 60% could be adjusted using a carbon emissions intensity factor for output compared to the sector benchmark in order to take into account efforts already made by institutions to reduce their emissions and thereby encouraging further investment in low-carbon alternatives.

It is too early to debate the proposed carbon tax in more detail suffice to say that a reduction in carbon tax liability is a further financial incentive of the WTE Facility which should be taken into account.

3.8 HEALTH AND SAFETY

Apart from a constitutional obligation in respect of a clean and healthy environment, note must be taken of legislative stipulations governing health and safety in respect of waste handling and in the workplace which equally applies to the Municipality and the preferred WTE bidder.

3.8.1 National Health Act, 61 of 2003

The Act provides a framework for a structured, uniform health system. In respect of waste it:

- Obliges local authorities to abate nuisances, including any accumulation of refuse or other matters, which are dangerous to health, etc.; and
- Empowers the Minister to make regulations, which could directly impact on waste management.

3.8.2 Occupational Health and Safety Act, 85 of 1993 & Regulations

The Act provides for the health and safety of persons at work and in connection with the use of plant and machinery. Given that the municipality will remain the owner of the land concerned, it would be essential to include in a contract with a WTE service provider a Health and Safety Indemnity Agreement in accordance with the stipulations of this Act.

3.9 HUMAN RESOURCES

Various acts and regulations made in terms of these acts regulate human resource matters. The most important are:

- Labour Relations Act, 66 of 1995, (the “LRA”);
- Basic Conditions of Employment Act, 75 of 1997 (the “BCEA”);
- Employment Equity Act, 55 of 1998 (the “EEA”);
- Skills Development Act, 97 of 1998 (the “SDA”);
- Skills Development Levies Act, 9 of 1999 (the “SDLA”)
- Occupational Health and Safety Act, 85 of 1993 (the “OHSA”); and
- the MSA.

From a macro perspective – since an in-depth analysis was not done - the Municipality’s existing human resources management practices and policies largely comply with the mentioned acts. It has an Employment Equity Plan and Policy, a Skills Development Policy and Plan and a Performance Management Policy and Plan including the needed institutional and individual scorecards and performance agreements with senior staff. The Municipality does submit an annual workplace skills plan, it pays its monthly skills levy to the South African Revenue Services and it accesses the training grants available from the Local Government and Sector Education and Training Authority (the “LGSETA”).

Furthermore, its labour practices and procedures comply with the LRA including a number of internal policies and, as required, this study adhered to the stipulation of section 84 (consultation with the trade unions) of the LRA and with section 78(1)(a)(v) of the MSA (soliciting the views of organised labour).

3.9.1 Focus on Job Creation

At the end of 2011 government, business, labour and organised community groups signed the “Green Economy Accord” committing the emerging renewable-energy industry to a minimum local content level of 35% for the initial roll-out period working towards the government’s target of 75% over time. Linked to the New Growth Path the expectation is that green industries will contribute around 300 000 jobs to the SA Economy by 2020.

Job creation also featured in the NCCR White Paper with Sector Jobs Resilience Plans (“SJRP”) having been identified as an instrument to move employment from a carbon intensive economy to a lower-carbon economy inter alia by using the Expanded Public Works Programme (the “EPWP”), promoting job creation incentives in new green economies and ensuring the Sector Education and Training Authorities (“SETA”) develop and fund enabling learnerships and internships.

The WTE Project has to incorporate the various job creation incentives and possible learnerships and internships into the project in so far as it is feasible and specifically focus on benefitting the local community. Another facet of human resources is the WTE project’s handling of staff matters with reference to the existing municipal staff that are employed at existing municipal owned facilities that are envisaged to form part of the WTE Project.

3.10 OTHER RELEVANT LEGISLATION AND POLICIES

During the lifetime of project development, establishment and implementation the legal landscape will change continuously and due diligence practices will have to ensure legislative obligations and rights are contextualised and contractually embedded. Contract management and monitoring will ensure compliance and keeping up with changes.

3.10.1 *National Water Act, 36 of 1998*

The National Water Act, 36 of 1998 (the “NWA”) is relevant in that its purpose is to ensure water resources are protected, used, developed and conserved, inter alia ensuring the reduction and prevention of pollution and thus taking to task any landowners or users that do not comply with standards, e.g. waste standards that could pollute water sources. Water uses regulated through the NWA that may be relevant to waste management activities are the 1) the discharging of waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit; and 2) disposing of waste in a manner which may detrimentally impact on a water resource.

3.10.2 *Consumer Protection Act, 60 of 2008*

The Consumer Protection Act, 60 of 2008 (the “CPA”) also has relevance. Apart from its general importance in respect of consumer relations, Section 59 links directly with Industry Waste Management Plans as required by the NEMWA. It confers rights on consumers to return items to suppliers, manufacturers or points of sale if discarded at end-of-life or otherwise. When considering the flow of materials from manufacturing through to waste treatment that incorporates materials recovery, diversion, processing, treatment and recycling back into manufacturing, where second-hand materials can be reused it provides opportunities to integrate commercial and industrial systems with municipal systems for the management of waste.

3.11 DRAKENSTEIN BY-LAWS AND POLICIES

Specifically applicable to the proposed project are municipal by-laws relating to the environment, waste and energy but also by-laws and policies relating to financial management, asset management, tariffs, property rates, credit control and customer care; land use management and planning and developer contributions. Aspects such as asset management and maintenance will specifically become relevant during the contracting phase.

3.11.1 *Energy & Electricity Supply*

The Electricity Supply By-law, 3 of 2007 governs the relationship between the Municipality and its electricity consumers and will concern the WTE Project only in so far as it is a user of electricity for its facilities. It is not foreseen that the WTE Project would necessitate any changes to this by-law or any new by-law given that relationships will be governed through specific contractual arrangements.

3.11.2 *Environment & Waste*

The *Environmental Policy, 2010* outlines the primary objectives concerning protection, conservation, management, infrastructure maintenance, sustainable land use, environmental emergencies and waste management, equally applicable to the envisaged WTE facilities as to all other consumers.

The *Prevention of Atmospheric Pollution, 11 of 2007* by-law deals with air quality which will be a concern given the processes involved in the WTE Facility but should be a minor issue. The Municipality is in the process of updating the by-law to make provision for integrated air quality management inter alia incorporating the stipulations of the NEM:AQA.

In terms of solid waste there are two current by-laws, i.e. *Refuse Removal, 17 of 2007* and *The Control of Waste Disposal Sites, 13 of 2007*. Both are outdated and need to be consolidated, a process which is nearly finalised with the new Integrated Waste Management By-law, 2012 expected to be promulgated during the current financial year.

3.11.3 Land & Bulk Services

The land to be used for the WTE Facility is part of the same tract of municipal owned land on which the Wellington Landfill and Wellington WWT is built and this land is zoned for industrial use.

Bulk Infrastructure Contribution Levies or otherwise referred to as Bulk Services Levies (“BSL”) have been in place or introduced at most municipalities to provide for developers’ contributions to the upgrading of bulk infrastructure and services. The Interim Developer Contributions Policy of 26 January 2011 deals with these matters. It derives its powers mainly from the Land Use Planning Ordinance, 15 of 1985 (“LUPO”) (Western Cape) which also deals with rezoning, subdivision and departures. In terms of the latter, the standard municipal practice conditions of approval imposed under LUPO makes the developer responsible to provide at own cost all the required internal municipal services as well as for the cost of link services.

Section 42 of LUPO also empowers the Council to require from a developer as condition of approval that a financial contribution be made to the Municipality for municipal expenses incurred in the past that facilitates the proposed development and/or to fund or provide engineering services that are directly related to the needs arising from the development. Basically the thinking behind the relevant provision is that any formula for contributions in respect of the cost of providing services should ensure equal treatment; more particularly that the residents who paid for “existing services” should not subsidise the new development and that neither should the “existing consumers” derive any benefit from the new development, unless a deliberate decision to the contrary is taken.

Additional services’ related revenue could be, in accordance with Section 42 of LUPO, a financial contribution required by the Municipality from the developer for municipal expenses incurred in the past to install bulk infrastructure that now facilitates the proposed development and/or to fund or provide engineering services that are directly related to the needs arising from the development. These expenses could also be factored into the bulk services’ contribution of the developer.

The Interim Developer Contributions Policy stipulates the liaison and negotiations that should take place between officials and developers and the written records to be kept.

3.12 ALIGNMENT OF THE WTE PROJECT

The transaction advisors conclude that the proposed WTE project is directly and soundly aligned to national, provincial and municipal strategies, renewable energy and waste plans and in will take place within a legally enabling but complex environment. It also links up with core global issues and will assist to pursue international strategies.

The three project objectives stated in the RFP, i.e.:

- the generation of renewable energy from municipal solid waste;
- the reduction of municipal solid waste to landfill; and
- the development of a CDM project in order to sell the CERs achieved by the generation of electricity from non-fossil fuel.

will enable sustainable economic development through a number of secondary objectives such as providing an incentive for other downstream activities related to the project development or operational phases and real permanent job opportunities.

4. NATURE AND COVERAGE OF WASTE SERVICE

This section of the study also includes waste services envisaged not to form part of the WTE project. However, all the waste services and activities are integrated and interlinked and it would be short-sighted not to do a brief overview of the complete waste services cycle in order to identify and highlight definite or possible constraints in interrelated activities that will impact on the waste treatment and disposal services and activities forming part of the WTE project.

Drakenstein compares well with the City Development Index (CDI) for the Western Cape in respect of infrastructure, equalling 0.79. However, Drakenstein’s waste performance is at 0.79, slightly lower than the CDI’s 0.89. According to the IDP, 77% of the households in the main towns of Paarl, Wellington, Hermon, Gouda en Saron are receiving a once weekly municipal waste removal service and communal and own refuse dumps are still prevalent in Dromedaris, Drakenstein DMA, Dal Josafat Nature Reserve and Paarl Berg Nature Reserve. This percentage puts Drakenstein ahead of the national average of 57.4% households having access to refuse removal services in large towns and 73.5% in small towns⁴⁰.

4.1 WASTE VOLUMES AND COMPOSITION

In 2005 the following waste volumes were recorded in Drakenstein Municipality without any weighbridges being in place.

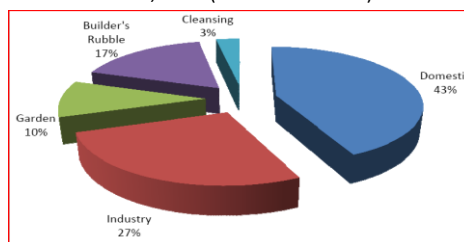
Table 5: Waste Volumes in Drakenstein, 2005 (Source: WTE RFP document)

Town / Area	Total Waste			
	Tons/day	Tons/week	Tons/month	Tons/annum
Paarl	137	961	4121	50136
Wellington	42	292	1249	15212
Hermon	4	28	119	1451
Gouda	2	14	60	734
Saron	3	24	103	1256
Totals	188	1319	5653	68788

The organic fraction of the municipal solid waste stream was estimated to be 30-40% of the total volume.

The waste generation figures contained in the IWMP²⁰⁰⁹ was compiled with the weighbridge at Paarl TS in working order albeit not for long and the one at the Wellington Landfill site not yet commissioned, thus a slightly more reliable yet still widely insufficient database. It was also prior to the commissioning of the MRF at the Paarl TS therefore, to enable it to calculate waste generation and composition figures, the Municipality used an extensive study done in the City of Cape Town verifying data for the Tygerberg Catchment (the “CT Study”). Where accurate data from Drakenstein was not yet available, estimated volumes were compared to the CT Study to arrive at the assumptions provided in the IWMP²⁰⁰⁹. According to the IWMP²⁰⁰⁹ the general waste composition of Drakenstein was as indicated in Figure 3.

Graph 2: General Waste Composition of Drakenstein, 2009 (Source: IWMP²⁰⁰⁹)



40

According to 2007 figures published in the 2011 Local Government Budgets and Expenditure Review (the “LGBER”) issued by National Treasury on 13 September 2011.

As recorded in the IWMP²⁰⁰⁹ 75,413 tons/annum including agricultural waste (not collected) were generated with domestic waste figures estimated at 32,428 tons/annum and industrial/commercial waste estimated at 20,362 tons/annum. The IWMP²⁰⁰⁹ estimated the builders' rubble contribution to the waste stream at 12,820 tons/annum, cleansing waste at 2,262 tons/annum and garden waste 7,541 tons/annum. Drakenstein does not really have an in-season or out-season waste generation disparity but there is an increase in December/January of 10-20% in volume.

These figures indicated to the Municipality that a reduction of mixed collected waste by means of recovery and composting will not meet the objectives of the NWMS and it certainly will reduce the lifespan of the Wellington Landfill even further therefore a holistic solution addressing the municipal waste objective in one encompassing project was needed. It led to the consideration and RFP of the WTE project.

The preferred bidder for the WTE who signed the MOA with the Municipality early 2012, used for its 2009/2010 External Feasibility Study (the "EFS²⁰¹⁰") waste input calculations based on the abovementioned municipal figures and own research as indicated in Table 6. The preferred bidder (and so also the other bidders) pointed out that the waste quantities did not add up, e.g. it appeared as if the waste transported from the Paarl TS to the Wellington Landfill was more than what initially entered the Paarl TS.

Table 6: Waste Composition of Drakenstein, 2009/2010 (Source: EFS²⁰¹⁰)

Estimated total waste received at the WELLINGTON LANDFILL										
Tons/d, 22d per month		Cardboard & Paper	Plastics	Metal	Glass	Food	Garden	Textile	Hi Cal. remains	Other
Bulk waste from PAARL TS	65	8	10	4	2	4	8	4	8	17
Domestic rec. @ WELLINGTON LANDFILL	138	32	23	7	6	19	23	9	9	10
Industrial & Commercial	15	4	3	1	0	2	1	1	1	2
General refuse	64	11	10	3	2	7	11	4	7	9
Total tons/per day	282	55	46	15	10	32	42	18	25	38

Excluding builders' rubble and rural waste

According to the EFS²⁰¹⁰ figures which *exclude agricultural or rural waste and builders' rubble*, the general waste stream available for the project is 74,448 tons/annum. Based on the composition of the waste it was assessed that approximately:

- 49 tons/day or 16% of total incoming waste (including inert material, i.e. builders' rubble) will be separated and recycled;
- 144 tons/day or 46% will be treated and utilised for electricity generation;
- 70 tons/day or 22% of organic waste will be used to produce 31 tons/day of compost;
- 54 tons/day or 16% of the total waste stream received (including builders' rubble, etc.) will be disposed of at the Wellington Landfill as inert material or ash residue.

Based on these figures, the EFS²⁰¹⁰ supported the pre-feasibility assumption of a feasible WTE project. The analysis also indicate that if a use can be found for builders' rubble then it could, using the EFS²⁰¹⁰ figures reduce waste to landfill with a further 8 tons/day or 3%.

Given the inaccuracies in the data and that very little factual data was available bidders proposed that a 1st phase of the project be focused on obtaining accurate waste input data.

Since 2010 the weighbridges at the Paarl TS and the Wellington Landfill have both being in working order offering more accurate waste volume figures than those that existed during the WTE exploratory phase in 2009 – 2010. Tables 7 and 9 refer to 2010-2011 waste management data as obtained from the AR²⁰¹⁰⁻²⁰¹¹ and Tables 8 and 10 contains the 2011-12 waste management data most recently recorded. The recent data will assist the WTE operator to arrive at a more reliable dataset but the inconsistency in the figures emphasizes the need for the WTE operator to do a 3 month waste

stream analysis as a 1st phase of the WTE project including a proper calorific analysis and update of its material flow model. Comparing the figures contained in these tables there appears to be a remarkable decrease in the majority of the waste volume figures. Notably the recycling figures are much higher with chipped garden refuse increasing drastically vis-à-vis a decrease in directly disposed garden waste and crushed builders' rubble also increasing sharply but with an equally sharp decline in contaminated rubble. The latter two figures also point to better management of these wastes enabled by the Municipality receiving a licence to do crushing, chipping and recycling.

Table 7: Cleansing Services Production Summary, 2011 (Source: Annual Report²⁰¹⁰⁻²⁰¹¹)

Cleansing Services Production Summary			
		Unit	Total
Transfer Station			
Garden Refuse.	Through Chipper.	kg	467 920
	Directly Disposed.	kg	2 173 200
Household Refuse.	Ref Rem trucks.	kg	0
	All other.	kg	766 150
General rubbish.		kg	2 487 470
Street refuse.		kg	867 170
Builders rubble.		kg	4 240
Industrial refuse.		kg	1 680 700
Bad food stuffs.		kg	0
Bulk refuse to Wellington.		kg	11 935 300
Chips to WWTW.		kg	0
Recycling to recyclers (paper, glass, metal).		kg	195 564
No of private vehicles.		no	38 524
No of paid loads.		no	7 256
No of cleansing vehicles.		no	1 062
No of other municipal vehicles.		no	959

Table 8: Cleansing Services (Source: JPCE Monthly Audit Report²⁰¹¹⁻²⁰¹²)

	Unit	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	TOTAL
Transfer Station														
Garden Refuse														
Through Chipper	Ton	37.72	29.6	46.64	40.8	32.76	20.74	38.52	36.06	59.64				342.5
Directly Disposed	Ton	111.22	69.6	106.48	116.16	78	121.22	131.24	114.48	123.86				972.3
Household Refuse														
All other	Ton	56.48	41.14	58.61	57.7	152.4	85.84	84.62	70.66	90.02				697.5
General rubbish	Ton	99.86	59.14	54.66	53.42	96.79	99.3	76.66	78.92	82.62				701.4
Street Refuse	Ton	49.72	22.04	46.28	46.72	58.28	36.1	39.25	38.556	53.55				390.5
Industrial refuse	Ton	110.54	72.7	91.18	131.56	136.9	112.12	98.74	74.24	66.82				894.8
Bulk refuse to Wellington	Ton	606.02	213.52	646.94	725.2	821.76	468.42	601.7	588.82	592.94				5,265.3
Recycling to recyclers (paper, glass, metal)														
	Ton	36.74	9.04	40.56	54.88	30.24	45.34	25.5	2.76					245.1
MRF Sales (Sonja Contract)	Ton	45.3	13.7	48	33.74	64.829	54.855	60.23	51.921	59.952				432.5
No of Private vehicles	No	2,632	1,673	2,417	1,953	8,530	3,287	3,132	2,691					23,626.7
No of Paid loads	No	361	190	294	366	414	336	217	222					2,400.0
No of Cleansing vehicles	No	79	42	50	46	53	43	60	63					436.0
No of Other Municipal vehicles	No	63	36	42	64	50	51	72	94					472.0

Table 9: Cleansing Services Production Summary, 2011 (Source: Annual Report²⁰¹⁰⁻²⁰¹¹)

Wellington Solid Waste Disposal Site (at present estimated quantities)			
Garden refuse.	Through chipper.	kg	1 620 180
	Directly disposed.	kg	1 027 750
Household refuse.	Ref rem trucks.	kg	32 625 868
	All other.	kg	979 890
General rubbish.		kg	22 692 979
Street refuse.		kg	733 370
Builders rubble.	Contaminated.	kg	82 436 036
	Crushed.	kg	10 645 232
Wellington Solid Waste Disposal Site (at present estimated quantities)			
Big trees.		kg	0
Industrial refuse.		kg	2 296 288
Bad food stuffs.		kg	165 587
Sludge.		kg	0
Cover material.		kg	64 166 476
Bulk refuse from Paarl.		kg	11 935 300
Recycling to recyclers (paper, glass, metal).		kg	0
No of private vehicles.		no	31 477
No of paid loads.		kg	2 655
No of cleansing vehicles.		no	4 893
No of other municipal vehicles.		no	3 055
Bulk Container (Skips).	Total no serviced.	no	5 243
	Total no on account (included above).	no	3 741
Waste by contractors on account (included above).		kg	2 507 000

Table 10: Cleansing Services (Source: JPCE Monthly Audit Report²⁰¹¹⁻²⁰¹²)

Wellington solid waste disposal site (at present)												
Garden Refuse												
Through Chipper	Ton	172.85	139.41	177.18	374.59	784.42	324.71	228.89	392.8	314.28		2,909
Directly Disposed	Ton	12.62	13.32	6.38	0.72	11.48	47.02	6.24	4.86	22.82		125
Household Refuse												
Ref Rem Trucks	Ton	2399.45	1829.49	2335	2444.26	2195.4	1702.8	2480.34	2373.18	2726.56		20,486
All other	Ton	42.56	38.5	85.72	88.54	99.4	81.08	106.67	95.14	95.04		733
General rubbish	Ton	924.73	1855.78	2211.71	614.84	1203.16	2297.13	1925.08	1475.09	1165.97		13,673
Street Refuse	Ton	54.12	28.2	41.58	29.68	24.12	12.52	27.86	23.64	38.22		280
Builders Rubble : Contaminated	Ton	3959.04	3145.67	5934.51	6421.15	7664.66	1542.78	7599.69	5036.72	842.67		42,147
	Crushed	Ton	2567.99	805.57	820.96	2852.23	4809.66	2267.03	1845.72	1802.84	2133.82	
Industrial refuse												
Industrial refuse	Ton	134.52	49.96	80.63	92.38	134.96	9.28	100.28	95.3	107.7		805
Bad Foodstuffs	Ton	8.86	13.46	20.5	4.34	0.9	2.3	7.24	5.3			63
Cover Material												
Cover Material	Ton	5928.56	3145.67	5934.51	6421.15	7664.66	1542.78	1845.72	5036.72			37,520
Bulk refuse from Paarl	Ton	606.02	213.52	646.94	725.2	821.76	468.42	601.7	588.82	592.94		5,265
No of Private vehicles												
No of Private vehicles	No	2,166	1,666	2,487	2,784	3,308	2,738	3,087	2878	0	0	21,114
No of Paid loads												
No of Paid loads	No	150	60	100	129	143	6	99	123			810
No of Cleansing vehicles												
No of Cleansing vehicles	No	354	248	341	356	316	219	361	362			2557
No of Other Municipal vehicles												
No of Other Municipal vehicles	No	249	121	243	289	217	207	254	382			1962
Recycling to recyclers (paper, glass, metal)												
Recycling to recyclers (paper, glass, metal)	Ton	0	0	0	0	0	0	5060	0			5060

4.2 WASTE COLLECTION

The waste collection activity does not form part of the WTE project but successful waste removal and transporting thereof to the Paarl TS and the Wellington Landfill is of utmost importance to the WTE project. The latter will be developed at a huge cost to handle current and projected future waste streams and its financial viability including compliance with power producer and CER trading commitments will be dependent on a continuous and consistent delivery of the expected waste streams to its operations. A strike resulting in a long term interruption of these operations might

cause financial losses including penalties applicable to the WTE operator as part of its contractual commitments.

The by-laws make provision for different residential service levels in accordance with national standards and regulations applicable to refuse removal. All residents in urban areas with formal residential stands and high density areas where a sustainable, formalised domestic waste collection service can be rendered, are receiving a weekly waste collection service respectively using a system of bins or refuse bags as provided by the Municipality. These areas include the towns of Paarl and Wellington; the villages of Saron, Hermon, Gouda as well as Voelvllei Dam and Swartland Water Works and some rural areas including Allandale Prison, Boland agricultural area, Windmeul, Agter Paarl, Simondium area, the area around Victor Verster Prison and the Wemmershoek road in the Paarl area and includes all schools, churches, hospitals, etc. in these areas. Table 11 indicates the refuse removal service levels for 2010-2011; Table 12 indicate the refuse removal statistics for 2010-11 and Table 13 indicate the refuse removal figures hitherto recorded for 2011-12.

Table 11: Refuse Removal Service Delivery Levels (Source: Annual Report²⁰¹⁰⁻¹¹)

Household			
Description	2008/2009	2009/2010	2010/2011
	Actual	Actual	Actual
Refuse removal: (minimum level)			
Removed at least once a week.	48 350	49 550	51 409
Minimum service level and above sub-total.	48 350	49 550	51 409
Minimum service level and above percentage.	100%	100%	100%
Refuse removal: (below minimum level)			
Removed less frequently than once a week.	0	0	0
Using communal refuse dump.	0	0	0
Using own refuse dump.	0	0	0
Other rubbish disposal.	0	0	0
No rubbish disposal.	0	0	0
Below minimum service level sub-total.	0	0	0
Below minimum service level percentage.	0	0	0
Total number of households	48 350	49 550	51 409

Table 12: Refuse Removal Services (Source: Annual Report²⁰¹⁰⁻¹¹)

Refuse service movement (bins issued/reduced for week)			
7 701	Once per week.	no	51 409
	Twice per week.	no	250
2 401	Once per week.	no	1 018
	Twice per week.	no	117
	Three times per week.	no	29

Table 13: Refuse Removal Services (Source: JPCE Monthly Audit Report²⁰¹¹⁻²⁰¹²) **85l info to be replaced with 770l info**

Refuse Service Movement (bins issued / reduced for week)			
85l	Once per week	No	0
	Twice per week	No	0
240l	Once per week	No	1736
	Twice per week	No	116
	Three times per week	No	46

The above figures indicate that the Municipality's workload in respect of the removal of 240l bins household refuse once per week has increased with 41% and this is only the figure for a nine month period and not a full year. Factoring the increase in collection points into the Municipality's planning will over time necessitate an increase in plant and human resources.

In the high density informal areas, the Municipality makes use of private contractors through the Municipal Cleansing Project (the "MCP"). Each contractor is paid R300.00 per day and he/she must use his/her own LDV and use and pay for workers appointed from residents in the area serviced. A team collects waste in a designated area and disposes thereof at the Paarl TS. The system is based on

a 'no work – no pay' principle. Each contractor does about 3 to 4 rounds per day to the Paarl TS and each collects and disposes between 300 and 1000kg municipal waste per day. The system appears to work well despite the fact that the contractor remuneration is rather low.

Communal collection is done by placing bulk receptacles at communal collection points and in Simondium and the serviced rural areas, the Municipality collects skip bins from the school and residential areas. Where it is not economically viable for the Municipality to provide any form of formal collection, i.e. on farms and in rural areas, communities and farmers are encouraged to make use of the Municipality's coupon system to dispose of waste at the Paarl TS or the Wellington Landfill. The incoming revenue from the coupon system is R291,330.00 per annum proving that the system is used but not as it could be.

Collection of business waste is done in accordance with the needs of each business which is at least once weekly collection or any number of times a week using a very practical system of colour-coded bins, i.e. the colour of the bin indicating how many times per week it should be removed. There are other private waste removal companies active in Drakenstein rendering a service to businesses and a sudden halt to these practices as the Municipality wishes to do may lead to legal action by these private operators. Therefore a strategy of systematically making the Municipality the only waste removal service provider of municipal solid waste⁴¹ is in process inter alia also to ensure the total waste stream, including recoverables, is available to the WTE operator.

The Municipality does not collect garden waste but makes a garden waste and bulky waste removal service available at an extra cost and residents are allowed to dispose up to five one ton bakkie loads of general waste (excl. the waste types that the municipal system collects) at the Paarl TS or the Wellington Landfill.

Effective and increased refuse removal services will inter alia depend on adequate vehicles, equipment and staff which in turn necessitates an adequate financial budget. Collection vehicles should ideally not be operated beyond 7 to 8 years in age since the maintenance costs increase dramatically with age. As reported in the IWMP²⁰⁰⁹ the refuse collection fleet consisted of 15 compaction vehicles of which 10 were used on a daily basis. The others were old and some have been scrapped but were still in use when required. Since 2009 the Municipality has acquired new vehicles. The current age of the vehicles ranges between 16 and 4 years with the average age being 9 years old. The fleet also include 6 flatbed tippers, 4 with railings and 2 without railings that collect builders' rubble, waste from major clean-ups, waste from individual streetcars and assist with black bag collection in informal areas. Two of these vehicles are old. [This info must be verified/confirmed](#)

The long term budget of the Municipality makes provision for purchasing a new vehicle in respectively 2014/15, 2019/20 and 2024/25, thus one waste vehicle every five years.

There are an adequate number of teams in place for refuse removal and street cleansing although a number of budgeted vacancies exist in the organisational structure. The transaction advisors can conclude that the Municipality has the financial and human resources to render the waste removal services it is currently responsible for.

4.2.1 Collection of Waste Separated-at-Source

The Municipality has regarded waste separated at source as an important component of its reduced waste to landfill and waste minimisation advocacy to eventually be expanded to its whole constituency.

The removal of other waste types such as medical care waste and hazardous waste is done by private companies and only regulated by the Municipality. Regulation through the new set of by-laws will include licensing of all waste removal service providers operating in Drakenstein.

Currently collection of waste separated at source is part of a two-year outsourced MRF Contract that commenced in November 2010 and will terminate in October 2012. In terms thereof the contractor, Enviro Smart Waste Management cc. supply all labour for the management and operation of the municipal MRF at the Paarl TS and use such labour for the collection waste separated at source on a weekly basis from the wards to which it has been rolled out by the Municipality. The Municipality provides the white bags and is in control of the waste separated at source' roll-out schedule in accordance with its own resources and has to date rolled it out to 5 of the 31 wards in Drakenstein. The additional workload is provided for in the MRF contract through a Contract Price Adjustment (the "CPA"). In addition the contract price is escalated on an annual basis in accordance with the Consumer Price Index (the "CPI") of the Western Cape.

4.3 WASTE CLEANING

Waste cleaning including all the activities related thereto, i.e. erf cleaning, street sweeping, clean-up of illegal dumping and other clean-up campaigns as needed are not included in the WTE Project but again the effective and efficient delivery of these services impact on the waste volumes and waste flow and thus also on the effectiveness of the MRF and other WTE operations. Table 14 includes the figures for 2010-2011 and Table 15 provides the 2011-12 figures until March 2012.

Waste cleansing is done in all the urban areas. In Paarl there are 3 teams with tractor-trailers and 24 individual sweepers with street cars. The latter consists of a wheelie bin and sweeping equipment. The Municipality has 2 mechanical street sweepers servicing the Paarl CBD area but these are not always in operation due to expensive parts and weather limitations. Further equipment includes two mechanical leaf suckers with teams.

Wellington also has 3 teams with tractors-trailers to do street cleaning and another tractor-trailer team serves Gouda, Hermon and Saron. The age of the tractors used range from 4 to 14 years and the trailers are custom built and mostly in excess of 20 years old. [to be verified](#)

Table 14: Cleaning Services (Source: Annual Report²⁰¹⁰⁻¹¹)

Cleansing Services Production Summary			
		Unit	Total
Erf cleaning			
Number of erven.	Paarl	no	259
	Wellington	no	22
	Gouda	no	12
	Saron	no	4
Total area.	Paarl	m ²	1 297 950.2
	Wellington	m ²	18 786.4
	Gouda	m ²	360
	Saron	m ²	0
Street sweeping			
Manual labour.	Paarl	km road	856.92
	Wellington	km road	1 034.55
	Gouda	km road	62.5
	Saron	km road	58
Mechanical sweeper.	Paarl	km road	403.86
	Wellington	km road	213.32
Weedkiller sprayed.	Paarl	m ²	145 6462.6
	Wellington	m ²	11 637
	Gouda	m ²	
	Saron	m ²	
	Hermon	m ²	3 850
Illegal dumping cleanup			
Paarl	Truckloads 6m3.	no	1 318
	Truckloads 10m3.	no	574
Wellington	Truckloads 6m3.	no	18
	Truckloads 10m3.	no	62
Rural areas			
Gouda	Loads	no	0
Saron	Loads	no	0
Cleanup campaigns			
No of bags picked up.	Paarl	no	698 622
	Wellington	no	37 052
	Gouda	no	3 834
Special events			
Refuse received.		kg	2 000
240 l bins issued.		no	421
85 l bins issued.		no	0
Skips issued.		no	16

Table 15: Cleaning Services (Source: JPCE Monthly Audit Report⁻²⁰¹¹⁻²⁰¹²)

	Unit	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	TOTAL
ERF CLEANING										
Number of erven										
Paarl	No	17	7	33	28	41	28	31	9	194
Wellington	No	14	0	0	1	0	0	0	0	15
Gouda	No	0	0	3	1	0	0	0	0	4
Saron	No	0	0	0	0	0	0	0	0	0
Total area										
Paarl	m ²	149,205	16,374	162,651	291,616	271,498	426,877	512,181	15,567	1,845,969
Wellington	m ²	75,818	0	0	6,235	0	0	0	0	82,053
Gouda	m ²	0	0	0	0	0	0	0	0	0
Saron	m ²	0	0	0	0	0	0	0	0	0
STREET SWEEPING										
Manual labour										
Paarl	km road	65.5	39.2	46.6	51.5	52.7	38.8	43.7	55.7	393.7
Wellington	km road	46.9	42.6	51.3	61	71.4	53.9	48.6	88.7	464.4
Gouda	km road	4.5	3	3.5	4	5	1	5	4.5	30.5
Saron	km road	6	1	7.5	7.5	7.5	0.5	7	7	44
Mechanical sweeper										
Paarl	km road	0	64	95.6	184.7	108.4	71.6	117	39.9	681.2
Wellington	km road	0	0	0	25.1	40.6	34.8	37.5	0	138
Weedkiller sprayed										
Paarl	m ²	58,500	50,455	98,202	7,790	15,195	4,550	14,123	0	248,815
Wellington	m ²	0	0	0	0	0	0	0	0	0
Gouda	m ²	0	0	0	0	0	0	0	0	0
Saron	m ²	0	0	0	0	0	0	0	0	0
ILLEGAL DUMPING CLEANUP										
Paarl										
Truckloads 6m3	No	4	34	80	5	62	126	123	0	434
Truckloads 10m3	No	30	50	37	48	97	93	150	0	505
Wellington										
Truckloads 6m3	No	0	0	0	0	0	0	0	0	0
Truckloads 10m3	No	16	0	0	0	0	0	0	0	16
Rural Aras										
Gouda	Loads	0	0	0	0	3	0	0	0	3
Saron	Loads	0	3	3	2	7	0	0	0	15
CLEANUP CAMPAIGNS										
No of bags picked up										
Paarl	No	37,170	13,585	18,856	38,959	54,458	30,700	43,135	24,743	236,888
Wellington	No	1980	1130	355	693	620	1300	1240	910	8228
Gouda	No	208	129	636	379	467	134	112	0	2065
Saron	No	186	120	368	732	512	724	656	0	3298
Hermon	No	29	11	30	58	83	31	30	0	272
SPECIAL EVENTS										
Refuse received	kg	0	0	0	0	0	0	0	0	0
240 l bins issued	No	0	30	4	20	83	0	1	50	188
Skips issued	No	0	0	1	3	1	0	0	0	5

Illegal dumping appears to be a huge problem specifically in the Paarl area. It points to the need for more community education and better enforcement of the waste by-laws.

4.3.1 Clean Green Project

The project is similar to the MCP but linked to a different budget. Councillors normally choose this project as part of the community upliftment and job creation projects that they may have in their wards. The ward councillor appoints a person owning a LDV as the driver and co-ordinator who then appoints a team of between 10 and 15 workers to clean a designated area by weeding pavements and roads as well as collecting vegetative waste and litter. Each team fills around 100 black bags as provided by the Municipality and the driver takes it to the Paarl TS for disposal. There are normally 2 – 3 wards running a Clean Green Project simultaneously.

4.4 WASTE TREATMENT AND DISPOSAL

Waste treatment and disposal practices, sites and related activities are very important to the WTE Project given that the management and operation of the Wellington Landfill and the Paarl TS and the already outsourced MRF operations at the Paarl TS are envisaged to form part thereof. The municipal waste management facilities consist of a mixture of closed and current facilities as well as future planned mini drop-offs, extension of transfer stations and, in a few years, a new landfill site when the Wellington Landfill has reached the end of its lifespan.

Closed and current waste treatment and disposal facilities include:

- Paarl TS including the MRF
- Wellington landfill
- Dal Josafat – a closed general waste landfill for Paarl area which must still be rehabilitated.
- Wateruintjiesvlei – a closed general waste landfill used for the Paarl area already rehabilitated.
- Boy Louw – a closed builder’s rubble site which is rehabilitated but apparently still needing some attention given the rehabilitation budgeted for it.
- Orleans – a closed builder’s rubble site which is rehabilitated but apparently still needing some attention given the rehabilitation budgeted for it.
- Gouda – a closed general waste landfill which has not been rehabilitated and is used as a transfer station albeit the perception of it been used as a general waste dumping site was stated in the 2009 audit that also pointed out a number of seriously incorrect practices which had to be attended to through hands-on management. It does not appear to be permitted as a transfer station.
- Hermon – a closed general waste landfill and non-permitted transfer station where the 2009 audit also observed uncontrolled dumping and found hands-on management lacking.
- Saron – a non-permitted builder’s rubble site which has not been rehabilitated and a transfer station that is well operated.

4.4.1 Paarl Transfer Station & Material Recovery Facility

The Paarl TS was commissioned in 2000. It has an operating permit. The Paarl TS is situated to the west of Distillery Street in Daljosafat approximately 12 km from the Wellington Landfill. There is a weighbridge at the Paarl TS and all loads are weighed. The Paarl TS is neat, fenced with controlled access and the necessary signage in place. All main access roads and vehicle turning areas have hard surfaces. Colourful skips stand in a neat row at the entrance.



There are four bays in the transfer station for one open top 30 m³ container for bulky non-compactable waste and three 30m³ compaction containers on a bogey magazine. Compaction is obtained by a static compactor.

Waste disposers include:

- Municipal Collection Vehicles: domestic and commercial waste
- Commercial Vehicles: garden/bush waste, commercial waste
- Private residents: domestic and garden/bush refuse, builder’s rubble

The municipal owned but privately operated MRF is adjacent to the transfer station and the tailings from the recovery effort is discharged into two (one duty, one standby) 30 m³ open top containers. All the containers at the Paarl TS and the MRF are the property of the Municipality. A transport contractor transports these containers on a daily basis to the Wellington Landfill for disposal.

According to the IWMP²⁰⁰⁹ the two chippers at the facility generate approximate 5m³ of chipped product daily consisting of green/"wet" vegetation to a maximum thickness of 100 mm. No dry stringy or thick greens are chipped as the blades become blunt.

During a visit on 8 March 2012 to the Paarl TS it appeared to be well managed and maintained with good security and access control. The office buildings were neat and clean and the site displayed all the necessary signage to comply with permit conditions and the employees wore the prescribed protective clothing. An amount of R1,55m had been budgeted over the next three years for the further upgrading and extension of the Paarl TS including a new office building. The Paarl TS employees consist of an operator/driver, a gatekeeper and 7 general workers.

The MRF is managed and operated in accordance with a two-year outsourced contract that will terminate in October 2012. The employees manually sort materials of value from the source separated wastes and bale the various materials. According to the tender instructions the maximum possible number of workers was to be employed from the labour lists of local unemployed labour. Contract management then include a monthly report on employment of local labour vis-à-vis others.

During a mid-day visit to the Paarl TS site the MRF was quiet in comparison with a very active Paarl TS.



The Municipality is clearly focused on waste recovery providing containers for various types of recyclables, i.e. glass igloos, skips for paints and insolvents and large containers for cooking and other oil. The Municipality also accepted various hazardous articles albeit in small quantities such as fluorescent lamps and batteries at the Paarl TS and transport it from time to time to the hazardous waste site at Vissershok. This is good service to users but probably against permit conditions.



4.4.2 Wellington Landfill Site

The wellington landfill is situated off the R44 on 25 hectares of industrial zoned land belonging to the municipality. The landfill site area contains an old landfill which was closed when the current Wellington Landfill was commissioned in 2000. It is a G:M:B landfill. Adjacent to the Wellington Landfill is the land earmarked for the WTE Facility and a bit further away on the other side of the

Wellington Landfill is the Wellington WWW from where the WTE will get sewage sludge if it factors into its operations. The site was visited on 8 March 2012.



Partly between the Wellington Landfill and the Wellington WWW on the same tract of land is the site that the Winelands DM would like to see developed into a regional landfill but the Municipality is not too keen to do so possibly keeping in mind the stipulations of section 84 of the Structures Act in terms of which a regional landfill is a power and function of district municipalities.

Lifespan: The end of the lifespan of the Wellington Landfill was set as 2014 but in 2010 the Municipality applied for authorisation to increase the landfill height through an extension of the clay berm with 4m and this increased the lifespan to 2016. Dependent on good management and minimisation of waste to landfill through waste limitation practices by the community and the implementation of the WTE project, including its recovery operations, it might be possible to extend the lifespan of the Wellington Landfill beyond 2016.

The Municipality has done investigations to identify candidate sites for a new landfill and will in due course make a decision on the location of a new landfill site. The development costs will be astronomic making the lifespan extension of the Wellington Landfill through less waste to landfill essential.

Aesthetics & signage: The access road from the R44 and the internal roads are well maintained. The entrance to the landfill site is kept neat with the necessary notice boards and a board (also at the Civic Centre) indicating the statistics of the landfill site, e.g. airspace used, estimated lifespan and waste diverted from landfill.



Inside the landfill site the area around the weighbridge and weighbridge office is clean and neat and although the buildings used as stores for e.g. tyres and other specialised waste types are old and dilapidated. Children’s art on the asbestos walls alongside the entrance road and the colourful tyres serving as flowerbeds gives the impression of real effort to brighten up the place. The employees are friendly, helpful and busy - not loitering around. On the site there was an area away from the working face where uncovered exposed waste was noticed.



Health and safety: The employees all wear the prescribed protective clothing. Incidentally the health and safety record of the site is very good given that there have not been any accidents involving humans on site during the past 17 years.

Access control and security: According to the waste management capital budget R5m has been budgeted to fence the site during 2011/12. This will rectify a serious non-compliance issue. There is a formal, lockable entrance gate with 2 gatemen and the security consists of external guards that patrol the site 24/7.

Equipment: Municipal equipment includes a front end loader plus its operator and a 6m³ tipper truck with its operator. Both operators have positions in the solid waste division but not specifically at the landfill site. Rented equipment includes a D6 Dozer, water truck and a 10m³ tipper truck each with an operator. There is no compactor and no plans to purchase such by the Municipality given the cost of it. However, to improve the landfill operations and the lifespan of the site, a compactor is sorely needed and over the long term the cost of purchasing it will outweigh the cost of hiring it. Currently the Waste Management Department is spending about R3m per annum on the rental of vehicles and equipment related to its waste treatment and disposal operations.

The correct plant needed for optimal operations at the Wellington Landfill is listed in Table 16 below.

Table 16: Plant needed for Wellington Landfill

Plant	Time Required	Purchase Price	Hire Costs	Hire Conditions
Compactor	Full time	R4,5m	R850/hour	Driver incl. / Fuel excl.
Front end loader	Full time	R0,5m	R305/hour	Driver incl. / Fuel excl.
Tipper truck	One day per week	R -	R480/hour	Driver incl. / Fuel incl.
Water truck	2/3 days per week	R-	R220/hour	Driver incl. / Fuel excl.

Reclamation of waste:

There is a large quantity of builders’ rubble at the Wellington Landfill and a high volume of wood and vegetation is disposed of at the site by private contractors such as garden services. The Municipality has a licence for chipping, crushing and recycling.

In 2010 when the Municipality applied for authorisation to increase the landfill height it included in the Basic Assessment into NEMA the diversion of builders’ rubble



and garden waste to chipping and crushing areas. The environmental authorisations for this was obtained allowing the Municipality to hire crushing and chipping equipment from time to time with the result that crushed rubble has increased with 126% and chipped garden waste with 117% according to JPCE's latest figures.



The cost of hiring the equipment is unfortunately very high and clean rubble is still only half of the volume of contaminated rubble received at the site but finding a use for it and diverting it from the landfill could according to the EFS²⁰¹⁰ figures reduce waste to landfill with a further 8 tons/day or 3%.

The Municipality is using the crushed builders' rubble to fill up the roads on the landfill site and makes it available for other road building projects but not guaranteeing the suitability of the quality/density for road building. When available, compost is sold to the public. The public pays at the municipal offices and bring the proof of payment with to the site.

Provision has been made for an enclosed recycling area (without any equipment, just storage) and the municipality is contemplating inviting the current recycler contracted for the MRF at the PAARL TS to also take responsibility of the recyclables off loaded at the Wellington Landfill.

Permissible wastes: There was no evidence that any hazardous or other controlled waste types were disposed of at the landfill. However, the Municipality acts as an intermediary for hazardous waste types such as asbestos sheets and fluorescent lamps by accepting it from the public and from time to time transporting it in a safe way to Vissershok hazardous waste site. The Wellington Landfill also still receives tyres not insisting on these to be quartered as the regulations require. According to the tyre regulations⁴² the Wellington Landfill will not be allowed to receive tyres as from July 2013. It is important to note that although it might be good to accommodate the public rather than taking the chance of storage or illegal dumping of hazardous wastes by the public, the Municipality may not store or stockpile large quantities of hazardous waste at the Wellington Landfill and when the landfill forms part of the WTE contract, the Municipality must accept the operator will act in strict compliance of the permit conditions and other legal regulations governing the Wellington Landfill operations therefore public education and the enforcement of the new by-laws that encapsulates all these regulations, standards, policies and guidelines, must be implemented.

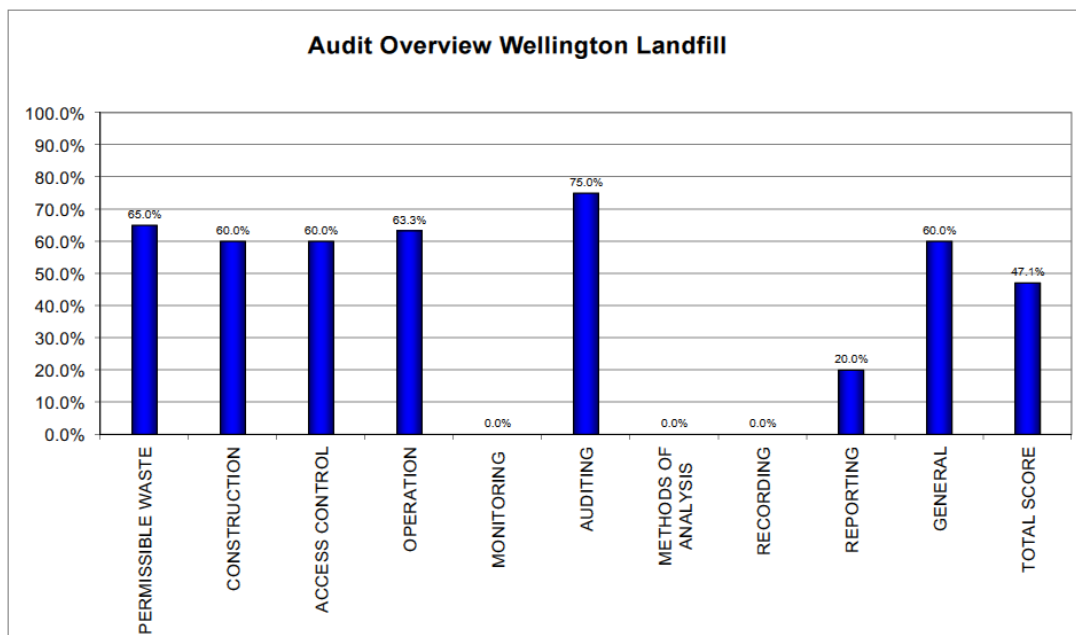
Besides the assistant superintendent who at the age of 59 will retire in a few years' time, the other personnel at the Wellington Landfill include 2 access controllers and 2 general workers. The site operations have improved with an assistant superintendent in control but critical recommendations must still be implemented.

External Audit Results

The IWMP²⁰⁰⁹ external audit came to the conclusion that the site was managed much better than in 2005 when the previous audit was done. However, it found a number of non-compliances with the permit conditions, e.g. the allowable volume of waste received per day, and recommended urgent hands-on management and co-ordination of duties as required by the operating permit such as ground water, surface water and leachate management and monitoring. Mention was also made of the need for proper compaction and excavation equipment to be acquired and used as well as a wood chipper and crusher and a concrete crusher.

The most recent External Audit was done in October 2010 by JPCE. The audit did a detailed analysis of the extent to which construction, operations, reporting, recording and monitoring at the site comply with the permit conditions. A number of non-compliances were found. Below is an overview of the audit.

Graph 3: Overview of “Wellington Landfill (Source: JPCE Audit²⁰¹⁰)”



Construction: The site complies with its buffer zoning of 500m but non-compliance was found in respect of the internal and external storm water drainage. The most critical issue reported was the dis-functioning of the leachate pump station – a problem not yet satisfactorily sorted out.

Operations:

The following non-compliances or problem areas were inter alia pointed out:

- inadequate internal storm water control;
- inadequate waste coverage with large areas far away from the current workface that are insufficiently covered resulting in exposed waste;
- inadequate compaction equipment with compaction being achieved by the passing of a tracked dozer over the waste but this method is only effective if the waste is being spread in thin layers.

Monitoring and auditing:

The non-compliances in respect of ground and surface water monitoring as well as the absence of internal auditing were rectified since the audit was done.

Analysis, recording and reporting:

The external audit pointed out a number of non-compliance in respect of SANS analyses, non-record-keeping as per the permit conditions and the absence of an incident book and complaints register on site which have been or are in the process of been attended to.

4.4.3 Transporting of Waste from Paarl Transfer Station to the Wellington Landfill Site

In July 2011 the Municipality awarded a three year R3m contract for the transport of containerised general waste from the Paarl TS to the Wellington Landfill to SA Metal Group (Pty) Ltd. The contract is for the supply of all labour, plant, tools, equipment and management necessary to transport and offload municipal solid waste in 30 m³ open top (bulky waste as well as tailings from recycling) and 30 m³ compaction containers at the landfill site. The contractor is responsible for the co-ordination of all

vehicles, containers and equipment, and for liaison with both the Paarl TS and the Wellington Landfill staff to ensure all operations are carried out in a safe, orderly and efficient manner.

The Municipality is satisfied with the contractor operations. The contract will expire in June 2014 prior to the WTE project becoming operational.

4.5 WASTE REDUCTION

4.5.1 Recovery and Recycling

Current waste recovery for recycling in Drakenstein consists of the MRF operations at the Paarl TS complemented by the systematic roll-out of waste separated at source activity. The MRF contractor also collects the waste separated at source from the wards hitherto included in this operation.

Table 17: Recoverable Waste (Sources: EFS²⁰¹⁰; IWMP²⁰⁰⁹ and MRF²⁰¹¹)

Tons/annum	Cardboard & Paper	Plastics	Metal	Glass
EFS ²⁰¹⁰	14,520	12,144	3,960	2,640
IWMP ²⁰⁰⁹	7,607	5,986	1,661	2,255
Paarl MRF ²⁰¹¹ (9 months)	125,144	18,807	9,883	87,030

Table 17 gives an indication of the difference in figures anticipated and recorded. The EFS²⁰¹⁰ figures are based on 74,448 tons/annum (excluding rural waste and builders' rubble) and presumably estimated recyclable figures. The IWMP²⁰⁰⁹ figures are based on 75,413 tons/annum (including rural waste) and estimated recyclable figures as explained. The MRF figures are based on real recyclable figures obtained for the first 9 months (November 2010 – July 2011) of the MRF Contract for waste handled at the Paarl TS.

A further breakdown of the recyclable figures is indicated in Figure 5 and Table 18 provides the most recent data.

Graph 4: Composition of Recyclables (Sources: JPCE)

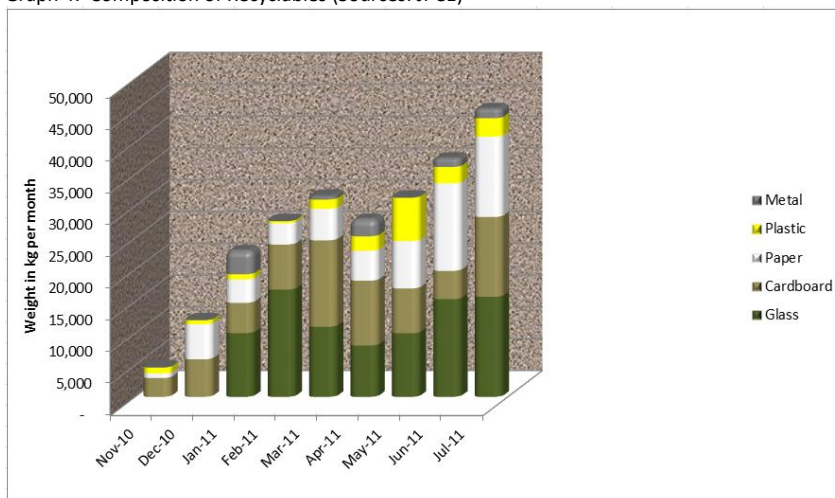


Table 18: Recycling & MRF Figures (Source: JPCE)

Transfer Station	Unit	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	TOTAL
Recycling to recyclers (paper, glass, metal)	Ton	36.74	9.04	40.56	54.88	30.24	45.34	25.5	2.76					245.1
MRF Sales (Contract)	Ton	45.3	13.7	48	33.74	64.829	54.855	60.23	51.921	59.952				432.5

Based on the latest sets of figures there has been a significant increase in recycling from the start of the contract to the first quarter of 2012. These figures are also indicative of the impact of the increase in waste collection services rendered since 2009 as borne out by recent refuse collection figures and possibly also the add-on results of the waste separated at source roll-out, although not verified. It appears that the percentage of recyclables in the Drakenstein area is far higher than was anticipated thus indicating the significant impact successful recovery of recyclables in the total municipal area could have on waste minimisation, reduction of waste to landfill and the successful operation of MRFs in Paarl and Wellington – the financing and construction of the latter MRF envisaged as part of the WTE project.

The financial viability and sustainability of MRF operations are quite complex inter alia due to a volatile recyclables market, making it essential to regard a MRF as part of an integrated waste management solution. Information contained in the IWMP²⁰⁰⁹ indicates that **post collection separation** or material recovery would result in a higher income even though other research shows that the **source separation recovery** figures for paper and glass is much higher than its post-collection recovery rate. However, the cost of establishing and operating a post-collection MRF (i.e. a 'dirty MRF') can be very high, to the extent of surpassing the income while source separated wastes must be collected preferably separate from the mixed waste stream and separated in its various material streams, also a labour intensive process and both of these have been proven in the past to be financially unsustainable if dependant on the revenue from sales to finance operational and capital costs. If a MRF is privately operated and not part of an integrated system there must at least be an incentive tariff based on the 'reduction of volume of waste to landfill' but even the latter may not be enough to make the operation sustainable if upfront capital cost has to be repaid.

In the case of the municipal owned MRF at Paarl TS, the contractor had no upfront capital outlay in respect of the MRF operations. The contractor also benefits from a 'waste reduction incentive scheme'. It is a two year contract with the built-in option of a 12 month extension period. The contract price as awarded was R2,470,635.00 consisting of a R1,980,000.00 fixed monthly tariff component and R490,635.00 presenting the total of a monthly incentive scheme.

There is no doubt that MRFs should be part of an integrated waste management solution, i.e. an integrated WTE facility. Deserving further attention is a cost-benefit and comparative analysis in respect of 'clean' vis-à-vis 'dirty' MRFs which then will impact on the extent and speed of the collection of 'waste separated at source' roll-out.

A benefit of a successful MRF at the Paarl TS is the saving on transport costs from the Paarl TS to the Wellington Landfill due to a reduction in the waste.

A number of other waste recovery efforts are being implemented by the industry in Drakenstein, e.g. used oil and oil products, printing chemicals, medical waste disposal and the wine industry by composting peels and pips and recycling bottles and cardboard.

4.5.2 Composting

Composting of organic material is environmentally much friendlier than landfilling thereof. The reason being that decomposition of organic materials in a landfill is an anaerobic process (i.e. without oxygen) which produces carbon dioxide and methane gas while composting outside a landfill is an aerobic process (in the presence of oxygen) which also produces carbon dioxide but not methane gas making the latter a much more feasible process given that methane gas is 21 times more effective as a GHG than carbon dioxide - therefore a much lesser harm to the environment. Composting also forms an important part of a WTE integrated operation.

The Paarl TS is located on the premises of the former composting plant in Daljosafat. The Record of Decision (the "ROD") obtained upon the application for an Environmental Authorisation, gave approval for the establishment of a MRF and a Composting Facility provided that the natural ground level be raised by 2m in order to be above the flood level of the Berg River. This was done to the MRF

and systematically using clean builders' rubble also for a composting yard. The compost so produced is sold to the public per bag or cubic metre.

4.6 WASTE CHARACTERISTICS

Although the Municipality and the preferred bidder believe that the waste volumes and composition will justify a sustainable WTE operation, the extent to which this is possible, is determined by the energy production from waste which is dependent on the energy contained within the incoming waste; the moisture content of the waste and the conversion efficiency of the process adopted to recover energy from the waste. Thus the energy potential of putrescible organic industrial and municipal solid waste will depend on the exact nature of the material. As stated in the EFS²⁰¹⁰, typically one tonne of kitchen waste will produce 80m³ of biogas whereas one tonne of grass cuttings will produce 170m³ of biogas, thus cautioning against evaluating viability and sustainability without full knowledge and understanding of the waste characteristics of the waste streams involved. The EFS²⁰¹⁰ specifically regards the incoming moisture content of the various wastes as a possible issue and motivates an in-depth, minimum 3 month long thorough investigation of the waste stream as a 1st phase of the WTE project during which a calorific value analysis will be done.

5. PROJECT FOCUS

The WTE project is expected to achieve the following objectives:

- the generation of renewable energy from municipal solid waste;
- the reduction of municipal solid waste to landfill; and
- the development of a **CDM** project in order to sell the **CERs** achieved by the generation of electricity from non-fossil fuel.

through a medium to long term PPP with the preferred bidder being responsible for the planning, design, financing, construction and operation of the WTE Facility and related infrastructure which must be able to:

- accept the municipal solid waste;
- separate the waste for recovery;
- treat the suitable fraction;
- transport and deliver the unsuitable fraction to the WL;
- generate electricity; and
- feed the surplus electricity into the municipal electricity grid.

Embedded in the generation and feed-in of electricity is compliance with all the legal authorisations and processes required to obtain an environmental authorisation, be selected and contracted as an IPP by the DoE and the conclusion of contracts with regulatory authorities and the Municipality in SA as well as a CER trading partner/s outside SA through the CDM mechanism. Refer to 3.6 and 3.7.

The infrastructure envisaged to be established, operated and owned by the WTE contractor in terms of the project includes:

- WTE Facility with its various components adjacent to the Wellington Landfill; and
- MRF at the Wellington Landfill.

The municipal owned infrastructure that the project envisaged to include for management and operation by the WTE contractor includes:

- Wellington Landfill
- Paarl Transfer Station
- Paarl MRF including the composting facility.

6. PROJECT RELEVANCE

In taking a preliminary view of the project the transaction advisors can conclude that the WTE project with all its components is undoubtedly relevant and will be an important tool to assist the Municipality

with implementing strategic waste management and to live up to its vision of excellence in its functional waste mandate and commitments as set out in its five-year IDP and IWMP.

It aligns with crucial national and international environmental and energy objectives and emphasizes the importance of addressing municipal solid waste challenges through integrated waste management solutions with direct benefits for its communities, i.e. a clean environment and job creation with downstream economic development.

Specific primary goals such as waste recovery and recycling through the MRF operations; the reduction of waste to landfill and decreasing the municipality's carbon footprint through the WTE conversion will be made possible through costly technologies and scarce expertise which the Municipality will not be able to afford on its own. The establishment of the WTE with its related infrastructure and the roll out of the waste separated at source service will also have a ripple effect on health and wellness especially if linked to public education and law enforcement.

7. COMPLEXITY OF THE PROJECT

The transaction advisors believe that the project is from a technological, financial, legal and operational perspective complex, necessitating every step of the way to be done with careful planning and vigorous risk assessment by the Municipality and the WTE contractor, separately and together, given the range of mutual responsibilities the parties would have to address to ensure the success of the project.

The process technology will need to be the best solution suited to the waste volume and waste characteristics of the waste streams involved for the sake of financial viability and sustainability. Thus, if the volumes and qualities of the waste allow a feasible project as appears to be, it still requires much knowledge and expertise to arrive at the ideal set of integrated technologies given that there are a number of technologies available that can be used as standalone systems or incorporated into a total integrated waste management solution. The technical complexity then extends to finding a quality supplier of the selected technologies at an affordable cost and within a feasible timeframe.

The statutory and legal complexities are equally challenging and compliance with it requires the inputs of a number of experts inter alia for the EIA process, the DoE's REFIT (REBID) procurement process with its range of criteria and the PPA, CA, IA and other contractual arrangements that will be needed. The set of arrangements required between the Municipality and the WTE contractor may not appear to be complex but translating these into contractual terms and conditions with built-in checks and balances linked to specific phasing will be complex for instance ensuring obstacles, e.g. perceived risks involving ownership of assets that could impact negatively on CDM trading negotiations, are packaged correctly.

It will be necessary for the WTE contractor to arrive at and present the Municipality with detailed financial models taking into account various possible options, scenarios and criteria influencing the calculation of the 'tipping fee' and the electricity tariff payable to enable the Municipality to make a very informed decision with regards to affordability and VfM.

The challenge is also to ensure that the project is structured in a way and all the risks linked to the technical, legal, financial and operational arrangements are packaged in such a way by the WTE operator that it can present a financially viable and sustainable project to obtain the required financial resources, be eligible for CDM registration and secure a CDM trading partner.

8. MUNICIPAL CAPACITY BASE

The WTE Facility is a new municipal support activity complementary to the existing waste management activities to achieve integrated waste management objectives and, except for making use of municipal land and bulk infrastructure, it is not intended to be in any other way reliant on municipal financial or human resources capacity and the Municipality has none of the scarce skills and expertise needed for the highly technical WTE operations or any spare labour capacity.

An assessment of the municipal capacity base in respect of the WTE project involves the existing waste management activities envisaged to be directly and indirectly related to the WTE operations:

- **Wellington landfill** – adequate municipal workforce taking into account insourced security services and insourced landfill equipment including the operators; necessary part of the WTE operations;
- **Paarl TS** – adequate municipal workforce albeit insourced security services; necessary part of the WTE operations if the objective is synergy of operations;
- **Paarl MRF** – no municipal capacity; contractor with own labour; necessary part of the WTE operations;
- **Cleansing services** – a number of budgeted vacancies; not part of the WTE operations but a lack of capacity and poor performance will impact negatively on the WTE operations;
- **Waste collection services** – a number of budgeted vacancies; not part of the WTE operations but a lack of capacity and poor performance will impact negatively on the WTE operations;
- **Collection of waste separated at source** – utilising the workforce of the Paarl MRF contractor and thus no current municipal capacity; it could be part of the WTE operations but does not need to be;
- **Transport of the waste from the Paarl TS to the Wellington Landfill** - contractor with own labour; no municipal capacity or vehicles; in the interest of synergising operations it could be part of the WTE operations but does not need to be, a lack of capacity will impact negatively on the WTE operations.

The Municipality provided the following information regarding its own labour force at the Wellington Landfill and the Paarl TS – refer to Table 19. The post levels are still based on the old structure (van der Merwe scales) but the Municipality is in the process of moving over to the Task system. A further analysis of remuneration and benefits will form part of the value assessment.

Table 19: Solid Waste Staff employed at the Wellington Landfill and the Paarl Transfer Station (Source: DLM)

Location	Position	Post Level	No.
Wellington Landfill	Access Controller	19-17	2
	General Worker	19-17	2
	Assistant Superintendent	8-7	1
Paarl Transfer Station	Operator/driver	12-11	1
	General Worker	19-17	7
	Gatekeeper	19-17	1
Total			14

Mandatory consultation with organised labour dealt with the question of labour that will be affected by the WTE project. Both unions, the South African Municipal Workers Union (“SAMWU”) and the Independent Municipal and Allied Trade Union (“IMATU”) prefer redeployment of affected staff rather than secondment or transfer. From the municipal point of view, individual employees must have the freedom to make their own decision should transfer of employment be an option provided to them.

The assessment found a substantial number of budgeted vacancies in the waste removal and cleansing teams, i.e. a few for the positions of tractor driver/operators and the majority of vacancies for general workers. It was observed that some of these might need to be filled for sustainable effective and efficient refuse removal and street cleansing services to be rendered, e.g. to complete working teams.

The Municipality will be open to redeployment and transfer of employees but due to organisational developments within the Municipality, e.g. changing to TASK and the WTE project not looking at staff employment for at least another 18 months, it is too early to channel possibilities into detail. Should transfer of personnel be a reality, e.g. by personal request, the total remuneration package of the personnel concerned will be protected in negotiations and Section 197 of the LRA will dictate the handling thereof.

Should the Municipality rely on own capacity for the collection of waste separated at source it would need an adequate number of work teams, each of which should include 1 driver and 2 general workers with at least a 1 ton bakkie with a trailer.

If the Municipality wishes to keep the haulage of waste from the Paarl TS to the Wellington Landfill as an internal activity once the transport contract expires in 2014 it will need skilled drivers and purchase the quality and number of vehicles needed or hire these resources. The current and previous tenders for this transport service from the Paarl TS to the Wellington Landfill provide a benchmark for an assessment of the costs involved.

9. EXTERNAL CAPACITY BASE

A number of large, competent operators in the waste sector render the full spectrum of waste services on behalf of municipalities, e.g. EnviroServ Waste Management, Envirofill (Interwaste), Phambili Wasteman, Waste Giant, Platinum Waste Resources, Tedcor, The Waste Group, Millenium, Re-Ethical Environmental Re-engineering, etc.

The RFP for the development of the WTE project gave all these firms and other newcomers to the market the opportunity to bid for the project whether alone or in a consortium. The feasibility study required from shortlisted bidders further investigated the capability and capacity of these firms/consortiums and the evaluation and adjudication processes took care to ensure capacity risks are properly interrogated and satisfactorily answered.

As a result the transaction advisors is of the opinion that the preferred bidder which signed a MOA with the Municipality present the most experienced team that the Municipality could procure with sufficient knowledge of waste management in general and integrated waste management solutions including waste to energy in particular.

Should the Municipality decide to outsource the collection of waste separated at source and/or the transport of waste from the Paarl TS to the Wellington Landfill adequate external capacity exists to ensure that respectively community based procurement and competitive bidding will be successful in securing VfM contract/s.

Where possible regional and local companies must get preference and any jobs created should benefit the local community. The preferential procurement policy of the Municipality would adequately take care thereof and any contract would enforce the employment of local labour. It should however be appreciated that the WTE project includes a number of highly skilled jobs for which the expertise may not exist locally, regionally or even nationally.

An added advantage is that, as a rule, private companies invest substantially in the training and development of their staff.

10. COMMUNITY EXPECTATIONS

Community expectations of a project such as the WTE vary. In most municipal areas, the majority of residents must still be educated about the need and socio-economic impact of waste minimisation, reduction, recycling and conversion to energy. Primary service delivery concerns and expectations involve the directly visible services, in this case waste removal and street cleansing. In respect of support activities secondary thereto, i.e. recycling, waste to energy, etc. the focus is on the maximum benefit that can be derived by the community through sub-contracting of work, supply of materials and job creation.

The expectation is thus that all jobs created would benefit the local community and that affordability and VfM principles are adhered to. What the community should expect is to change their mind-set to become more committed to waste minimisation and recycling.

11. FINANCIAL CONSIDERATIONS

This section of the report discusses a few important financial parameters influencing or indicating the extent to which the Municipality will be able in the foreseeable future to invest in or finance a WTE Facility and the associated infrastructure. The ESF includes a few options for the WTE facility of which the most feasible arrives at a capital investment figure of R146m as per 2010 figures. The discussion focuses on the financial performance of the DLM and more specifically the capital expenditure requirements of the Waste Management Department and its operational budget to gain insight into the financial situation and future financial requirements of waste management in DLM.

11.1 FINANCIAL PERFORMANCE

The DLM has received unqualified audits for the last three years, i.e. 2008/09; 2009/10 and 2010/11 and maintains an adequate and stable financial position but there are a number of challenges. A serious managerial issue is evident from the criticism of the Auditor-General that 39% of the reported targets of the Municipality in the AR²⁰¹⁰⁻¹¹ were not accurate, valid or complete. The latter negatively impacted on the ability of this study to present reliable information and also negatively affects the value that external investors can place on the information forthcoming from the Municipality unless rectified in the 2011-2012 annual report.

Another challenge is the slow spending of the capital budget. This could be ascribed to cumbersome tender processes, inadequate planning, inadequate capacity or a combination of these. However, it does appear that capital expenditure also did not take place as budgeted over the last few years due to such monies been used for operational expenses. The Municipality is in the process of effecting savings on its operational expenditure and has given its public the assurance that capital projects to which the Municipality has not yet committed will be incorporated in the 2012-13 budget.

11.1.1 Cash Flow

The Annual Report²⁰¹⁰⁻¹¹ indicates a credit rating of A3.za which means that the DLM has a strong capacity to repay long term liabilities and fulfil short term obligations (liquidity). However, as indicated in Table 20 the AR²⁰¹⁰⁻¹¹ also points out a decline in the liquidity ratio and another view expressed by a municipal ratings agency⁴³ indicates a steady decline in the financial stability rating of the DLM mentioning the DLM's liquidity as of particular concern.

Table 20: Liquidity Ratio (Source: AR²⁰¹⁰⁻¹¹)

Financial year	Net current assets (R/m)	Net current liabilities (R/m)	Ratio
2008/2009	181 801	218 205	0.8
2009/2010	190 601	258 825	0.7
2010/2011	166 235	306 635	0.5

11.1.2 Debts

The concern about liquidity is further borne out by the rather disconcerting increase in municipal debt from R209m to R298m from 2008 to 2011 while total creditors increased to R220m and the DLM is facing a R53,8m actual shortfall on its commitments⁴⁴. Tables 21 and 22 indicate the debt situation as per age and service. **Note:** that these tables exclude what is considered 'bad debt' of R60m which the previous Council wrote off but mentioned here due to the Auditor-General regarding it as a loss.

Table 21: Gross Outstanding Debtors per Service (Source: AR²⁰¹⁰⁻¹¹)

⁴³ Ratings Africa which has been criticised by municipalities for not using criteria more fully representative of all socio-economic parameters but still recognised for producing useable results.

⁴⁴ These were points highlighted by the Executive Mayor of DLM at the occasion of the tabling of the 2011-2012 Adjustments' Budget.

Financial year	Rates	Trading services	Economic services	Housing rentals	Other	Total
		(Electricity and Water)	(Sanitation and Refuse)			
	R/m	R/m	R/m	R/m	R/m	R/m
2008/2009	28 607	87 224	68 105	21 480	4 514	209 932
2009/2010	31 528	119 191	77 154	26 400	4 878	259 154
2010/2011	30 363	128 699	58 491	17 870	2 747	238 170
Difference	1 165	9 508	18 663	8 530	2 131	-20 984
% growth year on year	-3.8	7.4	-31.9	-47.73	-77.6	-8.8

Table 22: Debtors Age Analysis (Source: AR²⁰¹⁰⁻¹¹)

Financial year	Less than 30 days (R/m)	Between 30-60 days (R/m)	Between 60-90 days (R/m)	More than 90 days (R/m)	Total (R/m)
2008/2009	53 849	9 715	7 427	138 939	209 932
2009/2010	78 398	9 115	7 150	164 489	259 154
2010/2011	95 608	9 269	7 356	125 939	238 174
Difference	17 210	154	206	-38 550	-20 984
% growth year on year	-18	1.66	2.8	-30.6	-8.8

11.1.3 Loans

Table 23 provides an overview of the DLM's long term loans. The DLM's external loans amount to R334,133,285. During 2010-11 loans of R108,534,000 were taken up and R25,392,165 was repaid. The Municipality contemplates seeking a long term loan of R70m to keep capital projects going.

Table 23: Long Term Loans (Source: AR²⁰¹⁰⁻¹¹)

EXTERNAL LOANS	Interest Rate	Loan Number	Redeemable Date	Balance at 30 June	Received during	Capitalised during	Redeemed/written off	Balance at 30 June
				2010	the period	the period	during the period	2011
				R	R	R	R	R
ANNUITY AND OTHER LOANS								
DBSA	13.68%	101633/1	2012	6,793,026	0	0	3,173,100	3,619,926
DBSA	10.74%	100618/3	2011	575,502	0	0	575,488	13
DBSA	10.80%	100618/4	2014	11,393,655	0	0	2,417,165	8,976,490
DBSA	11.48%	103485/4	2018	46,578,476	0	0	3,183,553	43,394,924
DBSA	6.75%	103485/5	2018	11,332,153	0	0	950,379	10,381,774
ABSA BANK	15.00%	30-0828-5982	2011	828,496	0	0	531,572	296,925
ABSA BANK	14.21%	30-0868-2071	2012	1,597,959	0	0	742,725	855,234
NEDBANK	12.65%	49793540000	2018	86,892,182	0	0	6,804,335	80,087,847
NEDBANK	10.22%	1957327022	2015	6,585,000	0	0	1,061,344	5,523,656
NEDBANK	10.64%	7831030646	2021	0	72,382,001	0	0	72,382,001
STANDARD BANK	10.25%	72154314	2017	29,810,729	0	0	3,058,813	26,751,916
STANDARD BANK	10.40%	72154411	2020	48,604,271	0	0	2,893,691	45,710,580
INCA	9.30%	Loan A	2016	0	17,901,999	0	0	17,901,999
INCA	10.03%	Loan B	2018	0	18,250,000	0	0	18,250,000
TOTAL EXTERNAL LOANS				250,991,449	108,534,000	0	25,392,165	334,133,285

11.1.4 Investments

Investments refer to deposits of longer than 12 months. On 30 June 2011 these amounted to R112,000. The Call Investment deposits (shorter than 12 months) amounted to R 156,074,889 and the Cash book balance on 30 June 2011 amount to a positive balance of R 10,146,425. The Municipality has an investment policy that gives effect to its obligations in terms of section 13 of the MFMA.

11.1.5 Assets and Liabilities

On 30 June 2011 the Municipality's net assets amounted to R3,273,029,469 and its total liabilities amounted to R734,703,590.

11.1.6 Financial Risk Management

As pointed out above it appears that the Municipality is well aware of its liquidity and debtor risks and during the latter part of 2011/12 the Municipality has been addressing these. In terms of interest rate risk, the Municipality is not exposed due to its interest bearing external loans having fixed interest rates.

11.1.7 Cost Recovery

There are a number of policies and by-laws which the Municipality must have in place in order to comply with legislation. In respect of policies these include a Credit Control and Debt Collection Policy in terms of Section 96 of the MSA and a Tariff Policy in terms of Section 74 of the MSA. Section 98 of the MSA requires the Municipality to adopt bylaws to give effect to its credit control and debt collection policy including its enforcement. Section 75 of the MSA refers to the adoption of by-laws to give effect to the municipality's tariff policy, which in terms of Section 74 must determine the fees levied for services rendered by the municipality itself or by way of service delivery agreements. The Municipality has tariff and credit control and debt collection policies and by-laws as well as waste by-laws in place.

11.1.8 Performance Management

Despite the MSA governing performance management being in place since 2000 and two further sets of performance regulations respectively applicable since 2001 and 2006 as well as the obligatory performance reporting in terms of the MFMA, the Municipality, as pointed out in Auditor-General's Report on the DLM's Performance Management and the comments of its own Performance Audit Committee in the AR²⁰¹⁰⁻¹¹ is not implementing the required processes properly. Performance monitoring of a PPP in respect of a WTE project will be essential.

11.2 BUDGET ANALYSIS

11.2.1 Revenue and Expenditure

The comparative results for the last two financial years are as follows:

Table 24: Drakenstein Revenue/Expenditure Comparison (Source: AR²⁰¹⁰⁻¹¹)

Description	2009/10	2010/11
Revenue	R942,882,953	R1,025,587,546*
Expenditure	R950,236,179	R1,050,039,064
Surplus / (Deficit)	(R3,007,899)	(R24,451,518)

*Discrepancy

According to the AR²⁰¹⁰⁻¹¹ capital expenditure amounted to R236,804,825 which represented 92,91% of the approved capital budget. Of the amount spent, 38.59% was funded from own funds, 44.36% from external loans and 17.05% was funded from government grants and subsidies. This included an amount of R4m for waste management services. For both 2009/10 and 2010/11 the DLM derived 16% of its revenue from grants vis-à-vis 15% in 2008/09.

Table 25: Sources of Revenue (Source: AR²⁰¹⁰⁻¹¹)

Description of revenue	Amount received 2008/2009 (R/m)	Amount received 2009/2010 (R/m)	Amount received 2010/2011 (R/m)
Equitable share	39 374	52 658	59 707
Capital grants	64 465	80 850	41 645
Operating grants	19 917	20 037	65 820
Own revenue	701 032	789 337	858 321
Total revenue	824 788	942 882	1 025 493

The steady decline in under-spending on repairs and maintenance that is so evident in local government is also the case in Drakenstein given the steady decline in the amount spent on repairs and maintenance as a % of total operational expenditure as indicated in Table 26.

Table 26: Repairs and Maintenance Spending (Source: AR²⁰¹⁰⁻¹¹)

Description	2008/2009 (R/m)	2009/2010 (R/m)	2010/2011 (R/m)
Total Operating expenditure	777 306	948 509	1 043 510
Repairs and Maintenance	70 617	83 251	69 211
% of total OPEX	9.1	8.8	6.63

11.2.2 Waste Services Budget Analysis

According to the LGBER issued by National Treasury, municipal income from solid waste services has been growing very rapidly and so has expenditure. However, strikingly so, in the majority of municipalities budgeted revenues for solid waste do not cover budgeted expenditure. It points to an under-recovery of solid waste costs which municipalities must then subsidise from other revenue sources. Thus municipalities are in general under-pricing their solid waste services which sends inappropriate signals to households and other waste generators about the costs of their activities resulting in limited incentives for waste minimisation. NT mentioned that in addition to refuse removal charges, there are a range of other potential revenue streams in the management of solid waste that municipalities need to explore: landfill dumping fees, hazardous waste disposal fees, fines for littering and illegal dumping, recycling concessions, sale of compost produced from organic waste, revenues from using waste for electricity generation and the earning of carbon credits. Generally, municipalities need to pay more attention to optimising their revenues from these other sources. The comparative results for the last two financial years are as per Table 27.

Table 27: Revenue/Expenditure Comparison for Waste (Source: AR²⁰¹⁰⁻¹¹)

Description	2009/10	2010/11
Revenue	R59,916,323	R65,886,032
Expenditure	R47,297,809	R57,430,429
Surplus / (Deficit)	R12,618,514	R8,455,602

Table 28 provides the three year operating budget of the waste services which figures indicates a continuous trend of increased surpluses and Table 29 breaks the operating budget down in the waste activities which gives more insight in the costs applicable to each. Further analysis indicates that the operating deficit of the waste treatment and waste disposal services budgeted for in 2011-12 is R14,534,871 of which R2,915,436 is spend on hiring of vehicles and equipment and R2,662,451 on contractual services including security, cover material and transport, i.e. a total of 38% of the budget for insourcing of these services. The equitable share received by waste management services amounted to R14, 422, 589 for 2011-12.

Table 28: Waste Management: Operating Budget (Source: DLM)

Description	2011/12	2012/13	2013/14
Revenue	R74,295,865	R80,778,803	R87,684,250
Expenditure	R60,604,059	R65,524,970	R70,978,761
Surplus / (Deficit)	R13,691,806	R15,253,833	R16,705,489

Table 29: Waste Management: 3 Year Operating Budget (Source: DLM)

Description	2011/12	2012/13	2013/14
Cleansing administration	R33,013,947	R35,769,169	R38,948,784
Cleansing Gouda	R161,160	R14,561	R10,558
Cleansing	R1,421,741	R1,680,723	R1,814,421
Cleansing streets and pavements	(R981,331)	(R341,972)	(R379,490)

Cleansing scavenging sidewalks	(R19,973,803)	(R22,448,499)	(R24,473,320)
Cleansing refuse removal	(R1,662,376)	(R1,393,759)	(R1,482,365)
Cleansing refuse removal	R16,246,889	R17,921,798	R19,352,639
Cleansing refuse treatment	(R6,148,049)	(R6,732,576)	(R7,286,004)
Dumping sites	(R8,386,822)	(R9,215,612)	(R9,799,734)
Expenditure	R60,604,059	R65,524,970	R70,978,761
<i>Surplus</i>	<i>R13,691,806</i>	<i>R15,253,833</i>	<i>R16,705,489</i>

Below in Table 30 are the listed prioritised capital needs, the projects approved for 2011-12 and the provisionally budgeted capital expenditure for 2013 and 2014. Capital items that concern the infrastructure envisaged to be operated by the WTE operator could be part of the financial risk transfer to the private party as part of the WTE project if not implemented by the time the WTE project is fully operational and depending on the cost involved for the Municipality. These could include the installation of weighbridges at Paarl TS for R1,8m and the Wellington Landfill for R2,8m (current figures) to weigh the outgoing vehicles which now has to be weighed on the same weighbridge as the incoming vehicles thus causing one-way traffic and a bottleneck for both ways.

Table 30: Waste Management: Capital Budget (Source: DLM)

Area	Description	2010/11 Actual Spending	2011-2012	2012-2013	2013-2014	Total 3-year
Paarl	Refuse Containers (Wheely Bins Pole Bin)	R 85,000.00	R 100,000.00	R 150,000.00	R 165,000.00	R 415,000.00
Paarl	Upgrade and extension of transfer station and new office building	R 2,100,000.00	R 500,000.00	R 500,000.00	R 550,000.00	R 1,550,000.00
Paarl	Implementation of IWMP	R 457,000.00	R 200,000.00	R 300,000.00	R 1,000,000.00	R 1,500,000.00
Wellington	Refurbish Road to Wellington Dumpsite and Weigh Bridge					
Wellington	Extend Wellington Landfill : 225000m3 clay berm 4m high	R 60,000.00	R 100,000.00			R 100,000.00
Paarl	Equipment General	R 70,000.00	R 50,000.00	R 100,000.00	R 110,000.00	R 260,000.00
Paarl	Office Furniture And Equipment	R 14,000.00	R 1,000.00	R 8,000.00	R 10,000.00	R 19,000.00
Paarl	Investigate, and develop new/alternative landfill site or Waste Minimization Projects	R 239,000.00			R 100,000.00	R 100,000.00
Various	Mini Drop off		R 400,000.00	R 500,000.00	R 400,000.00	R 1,300,000.00
Wellington	Rehabilitation of the 5 sites	R 1,000,000.00	R 6,000,000.00	R 5,000,000.00	R 5,000,000.00	R 16,000,000.00
Wellington	Upgrade Wellington cleansing depot		R 200,000.00	R 100,000.00	R 100,000.00	R 400,000.00
Paarl	Refuse bin management system		R 200,000.00	R 200,000.00	R 20,000.00	R 420,000.00
Wellington	New access, rehab, public drop off. (Recycling Waste)		R 400,000.00	R 300,000.00	R 300,000.00	R 1,000,000.00
Paarl	Upgrading Transfer Station including Rehab of Roads, New Admin. Building, Washbay and Parking Facilities					
Paarl	Purchase new waste trucks					
Paarl	New mobile diesel 6' pump (2no.)					
Wellington	Wellington Landfill Leachate management				R 100,000.00	R 100,000.00
Paarl	Statutory Compliances					
Wellington	Waste to energy plant Section 78 Investigation		R 100,000.00			R 100,000.00
Wellington	Rehabilitation and closure of old site					
Wellington	Parking facilities : Wellington cleansing station					
Wellington	Fence for Landfill site		R 5,000,000.00		R 100,000.00	R 5,100,000.00
Wellington	Waste minimisation projects					
TOTAL	APPROVED / BUDGETED	R 4,025,000.00	R 13,251,000.00	R 7,158,000.00	R 7,955,000.00	R 28,364,000.00
	INITIALLY PROJECTED		R 33,817,500.00	R 45,007,500.00	R 7,955,000.00	R 86,780,000.00
	SHORTFALL ON INITIALLY PROJECTED		R 20,566,500.00	R 37,849,500.00	R -	R 58,416,000.00

It would be noted that a few items in the above list have no budgeted figures. It appears that new vehicles are bought through another vote managed by the Civil Engineering Department; the landfill site rehabilitation budget will only kick in later given the extension of its lifespan and others will be budgeted for when the finances of the DLM allow.

11.2.3 Waste Services Tariff Structure

A comprehensive tariff review of solid waste services taking all the required components, e.g. the often forgotten maintenance costs, into account every few years is essential. For instance to ensure the impact of the fuel price syndrome is accounted for. In comparing the waste tariffs of the Municipality with similar municipalities in the Western Cape, e.g. Overstrand and Swartland, the average annual percentage increase in the DLM tariffs (refer to Table 31) does appear in line with other municipalities but the waste tariffs are higher (refer to Table 32). It will not be correct to arrive at any assumptions without a proper tariff review and a comparative analysis with Municipalities of similar character and size that have done a similar tariff review. Moving forward with the WTE project requires the Municipality to have a good understanding of municipal costs in order to compare such with private sector costs – thus a good time to do a comprehensive tariff review.

Table 31: Tariff Increases (Source: DLM MTREF 2011-2014)

DESCRIPTION	2010/2011	2011/2012	2012/2013	2013/2014
Tariff Increases				
Rates	5.00%	5.00%	5.50%	5.50%
Refuse	7.00%	7.00%	7.50%	7.50%
Sanitation	7.00%	7.00%	7.50%	7.50%
Water	10.00%	10.00%	11.00%	11.50%
Water- Prepaid	0.00%	0.00%	11.00%	11.50%
Electricity -Prepaid	20.00%	17.00%	20.00%	21.50%
Electricity	20.00%	19.00%	21.00%	21.50%
Sundry Tariffs	7.50%	7.50%	7.50%	7.50%

Table 32: Solid Waste Tariffs 2011-2012 (Source: DLM)

SERVICE	Tariff Excl. Vat (R)	VAT (R)	Tariff Incl. Vat (R)
Refuse Removal Fees (240 litre bins)			
One removal per week per bin	1 553.37	217.47	1 770.84
Two removals per week per bin	4 234.01	592.76	4 826.77
Three removals per week per bin	7 161.49	1 002.61	8 164.10
Refuse Removal Fees (770 litre bins)			
One removal per week per bin	5 312.45	743.74	6 056.20
Two removals per week per bin	14 482.55	2 027.56	15 510.10
Three removals per week per bin	24 492.87	3 426.97	27 921.55
Availability Charges (vacant ervens) 20% rebate of the above iro schools	284.40	39.82	324.21
Special Services			
Skips for hire (515m ³ minimum rate of one service per month)	550.95	77.13	628.09
Woodchips (per m ³)	47.87	6.70	54.57
<i>Indigent subsidy: monthly R187.00 credited to registered indigent's account</i>			
Sundry Refuse Removal and Compost Tariffs			
Special refuse removal (large quantities) per load. Approved manageable garden refuse will be removed if it can be loaded onto truck (payment upfront)	292.32	40.93	333.25
Wellington Landfill			
All waste excl. Wellington's private residential waste. Contractors and non-Drakenstein residents per 100kg or part thereof.	11.32	1.58	12.90
Rejected foodstuff (per100kg or part thereof – incl. but not limited to, fishery waste, bad foodstuffs and other special waste	42.43	5.94	48.38
Builders' Rubble (all disposal sites)			
Clean (only contains sand, stone, half bricks, soil, small pieces of concrete, less than 100mm)			Free
Container with tree stumps and refuse and contains concrete pieces greater than 100mm (price per ton)	94.30	13.20	107.50
Paarl Transfer Station			

Per 100kg or part thereof but iro Paarl residents: if total load less than 1000kg, and the limit of 5 loads p/m not exceeded, dumping free of charge	12.73	1.78	14.51
Clean approved garden refuse will be received free of charge (only if it can be chipped) Per bag (blue bags)	12.73	1.78	14.51
Compost			
Fine compost per bag (supplied by municipality) when available	6.60	0.92	7.53
Fine compost per bag (supplied by purchaser)	4.71	0.66	5.38
Fine compost per m ³	44.79	6.27	51.06
Coarse compost per m ³	20.75	2.90	23.65
Provision of containers for special events			
240l / per container/service	30.55	4.28	34.83
770l / per container/service	115.52	16.17	131.69
5,5kl skip / per skip (minimum of one service/month)	485.64	67.99	553.63
Damaged bins – replacement costs			
240l / per container/service	509.21	71.29	580.50
770l / per container/service	3 041.12	425.76	3 466.88
Incinerator			
Formula C = 0,598 x GRE + 0,136			
GRE = Overall refuse equivalent value			

11.2.4 Additional Budget Requirements i.r.o. Waste Services

The costs to rehabilitate all identified sites in the Drakenstein is estimated at R54,475,239.36 (escalation excluded). Provision for R16m (escalation excluded) has been made for this programme over the next three years on the capital budget.

Table 33: Summary of Estimated Landfill Rehabilitation Costs (Source: DLM)

Solid Waste Site	30 June 2011
Wellington Existing Landfill	R20,665,031.68
Wellington Old Landfill	R14,111,251.50
Gouda Landfill	R1,074,784.94
Saron Landfill	R2,161,124.27
Hermon Landfill	R929,413.18
Dal Josafat Landfill	R2,932,476.71
Orleans Landfill	R6,859,453.31
Boy Louw Landfill	R5,741,703.77
Total	R54,475,239.36

11.3 FINANCIAL AND SERVICE DELIVERY REALITIES

The above discussion indicated that the Municipality is committed and financially able to render good waste collection and cleansing services, will be able to continue rendering the current standard of waste treatment and disposal services but does not have the current or foreseeable financial capacity to improve the operations of the Wellington Landfill to ensure further extension of its lifespan or to do large scale rehabilitation of closed sites within a short period. Within the context of its other priorities, e.g. water, sanitation, electricity, housing, sport and recreation, etc., extended or considerably improved waste services that require large capital investment in infrastructure and plant is not a short or medium term priority.

Similarly the Municipality does not have the financial resources to invest in an integrated solid waste solution through a WTE facility or, for time being, an added MRF at the Wellington Landfill although the project is possible and actually essential as highlighted in the discussion in paragraph 11.4.

Add to this scenario the looming necessity for the DLM to either develop a new landfill at a huge cost or dispose of its waste at another regional landfill or at a landfill belonging to the City of Cape Town including the additional transport and disposal costs this would involve and the DLM is definitely not in the running to finance, establish and operate a WTE facility or any one component of it.

11.4 EXPECTED FINANCIAL BENEFIT

JPCE used the proposed diversion rates, tipping charges and electricity generation figures of the bidders in the WTE RFP as well as a number of assumptions to arrive at the estimated costing of a WTE project to the Municipality and comparative costs in the event that the current status quo is maintained, i.e. no development of any of the WTE project components. Note: the figures in the following discussion will need to be verified and revisited and NT will request the calculations used to arrive at concluding figures to be included in the report.

The assumptions used by JPCE were the following:

- the cost assumptions as indicated in Table 34;
- an estimated contract duration of 20 years with a 2 year commissioning delay due to statutory approvals;
- inclusion of the Paarl TS, the Paarl MRF and the Wellington Landfill in the WTE project;
- that the disposal cost the DLM would need to pay at another landfill (Cape Town City or regional) when the Wellington Landfill is full would be equal to the current costs charged by the City;
- that the haulage of waste between the Paarl TS and the Wellington Landfill be regarded as a cost equal to all scenarios;
- that the transport cost to another landfill be based on private haulage contract costs.

Table 34: Assumptions i.r.o. Cost (Source: JPCE Evaluation Report of WTE Bids)

Description	(R) value	Unit
Municipality's cost to operate the landfill	6,988,800	R/a
Municipality's cost to operate the Transfer Station (excluding the existing haulage contract's cost since it is a common factor in all scenarios)	480,000	R/a
Municipality's cost for the operation of the Material Recovery Facility	823,545	R/a
The Nersa tariff for purchasing electricity ex Waste-to-Energy	0.98	R/kWh
Profit margin that the Municipality will add to Electricity sales	5	%
Mass of waste generated by Drakenstein Municipality	87,360	Tons/a
Remaining airspace at Drakenstein's Wellington landfill	865,500	m ³
Cost of disposal at remote landfill once Wellington landfill is full	270	R/ton
Cost of transport to remote landfill	120	R/ton
Escalation of costs	4	% per annum

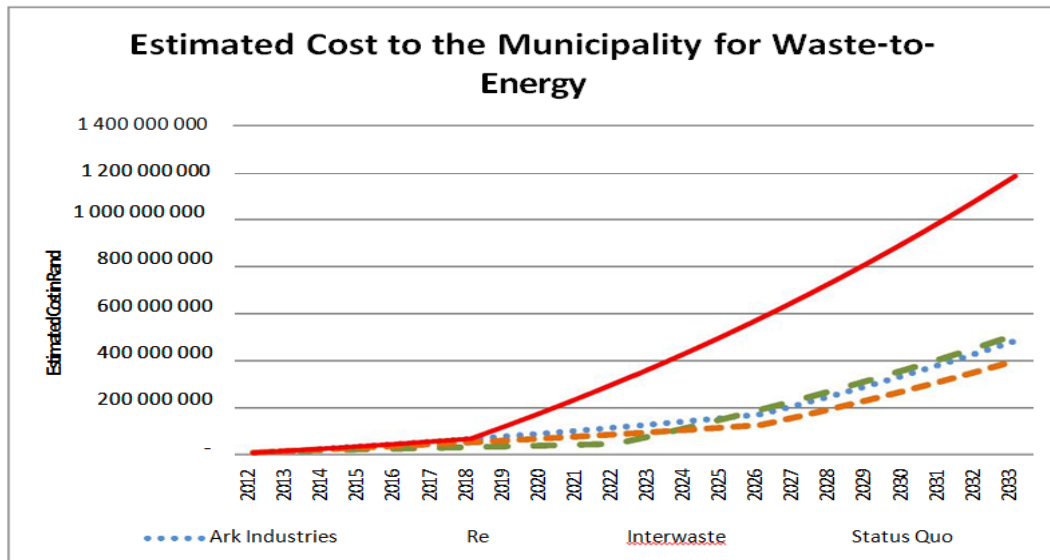
Should the Net Present Value of the above estimated cost to the Municipality for 20 years be calculated, using a discount rate of 6%, the following results (as a cost to the Municipality) are obtained:

Table 35: Total Estimated Cost to Municipality over 20 years and its Net Present Value ("NPV") (Source: JPCE Evaluation Report of WTE Bids)

Bidding Party	Total Estimated Cost to Municipality	Net Present Value (Cost)
ARK Industries	R 483,774,614	R 209,342,011
Re	R 508,757,900	R 205,800,678
Interwaste (preferred bidder)	R 398,905,516	R 169,661,227
Status Quo	R 1,184,028,080	R 514,220,075

Besides highlighting the private investment that will be involved, the concluding figures in Table 35 also show that the bidders who will divert more from landfill, are "penalised" initially since the Municipality effectively only pays for the waste that gets diverted, but once the waste has to be transported to a remote landfill, the more effective bidders obtain the advantage.

Graph 5: Costs and Impact of the WTE Project (Source: JPCE Evaluation Report of WTE Bids)



Graph 5 clearly indicates the increase in costs should the Municipality refrain from implementing the WTE project. These figures would have to be revisited and will only be verifiable once there is an updated waste volume dataset available and more clarity about the performance levels and criteria that will apply to the WTE operator. It also appears that the government is intent on introducing a carbon tax in the near future and a reduction in carbon tax liability will be a further financial incentive of the WTE Facility.

11.4.1 Cost Avoidance

The figures in Table 35 included a calculation of avoided costs. More specifically an evaluation of the bidders’ proposals listed the following types of avoided cost that will be the result of the WTE project in Table 36 (based on the costs of the preferred bidder) as well as the projected daily cost after taking the avoided costs into account.

Table 36: Avoided Costs (Source: JPCE Evaluation Report of WTE Bids)

Avoided Cost Item	Applicability	Avoidance Cost Measurement
Operation of Paarl MRF	Yes	R9.43 / tonne
Operation of Wellington Landfill	Yes	R80/ tonne
Operation of Paarl TS	Yes	R5.49 / tonne
% Waste Diverted from Landfill	Yes (lifespan extended)	61%
Cost Item		After avoidance taken into account
Additional Daily Cost to Municipality	Yes	R5,873.14 (±R1,55m/a)

12. INSTITUTIONAL COMMITMENT AND CAPACITY

12.1 PROJECT OFFICER AND TEAM

The Municipality’s project officer is Mr Ronald Brown, Engineer Waste in the Department of Civil Engineering. The project is overseen by Messrs Deon du Plessis, Head: Civil Engineering Services and Leon Coetzee, Executive Director: Infrastructure and Planning. The project does not have a dedicated team but involves personnel of the waste management services as and when needed.

The Municipality has not specifically budgeted for the internal project management of this project. Each member of the project team fulfils his role in terms of the project as part of general daily duties.

However, the Municipality has budgeted for the assistance of the transaction advisors and if project funding can be obtained from or through the PPP Unit of National Treasury their fees will mainly be covered by it.

12.2 TRANSACTION ADVISORS

Drakenstein Municipality appointed Jan Palm Consulting Engineers (JPCE) in 2008 as its solid waste management consultant for a five year period as per an open tender process. JPCE's primary role is to assist the Municipality with planning, budgeting and implementation of an integrated waste management strategy and plan including any studies that may be necessary. His scope of work in respect of the WTE project was outlined as follows:

- provide technical input for the MOA to be entered into with the preferred bidder;
- conduct an investigation in accordance with section 78 of the MSA; (*this report*)
- conduct an investigation in accordance with sections 120 and 33 of the MFMA;
- advise the municipality on technical matters as and when required whether by requests from the Municipality, the preferred bidder or the statutory licensing authorities; and
- assist the Municipality with the upgrade of its waste management policy and by-laws to accommodate the effects of the proposed WTE Facility.

Jan Palm has an intimate knowledge of the current set of circumstances concerning waste as well as the requirements of the Municipality to ensure future waste service delivery mechanisms that meet the needs of the Drakenstein community. Assisting JPCE is Anita Botha a municipal consultant specialising in institutional and legal matters and section 78 and 120 assessments as well as PPP contracting and legal/institutional contract management. The JPCE team will include expert legal and financial services if and when necessary to ensure the Municipality has the 'value-added' benefit of a wide area of knowledge and expertise.

12.3 CAPACITY AND CONTINUITY OF KEY ROLE PLAYERS

The project mainly concerns the relevant staff in the Directorate Infrastructure and Planning and the transaction advisors during the feasibility and contracting phases. During planning, construction, commissioning and the operation of the WTE project the involvement of municipal key role players will be consistent with the transaction advisors involved as determined by their contract terms. Due to the technology and expertise involved and the complex nature of the project, engineering, electricity or other required external expertise might be involved in the contract management and monitoring.

The CFO and Finance Department is involved concerning financial matters as the need arises and the Human Resources Department under the Directorate Corporate Governance manages the data of the levels, positions and salary scales of employees which would be required to determine employee costs and other relevant staff information should existing affected employees elect to be transferred to the WTE project rather than to be re-deployed within the Municipality.

Within the mentioned Directorates there are established lines of authority and communication between the ad hoc project team members. The transaction advisors deal with the project officer on a continuous basis with regular formal meetings and discussions forming part thereof. As the project proceeds Technical or WTE Transaction Steering Committee ("TSC") meetings will take place at shorter intervals. Skills transfer is not so much an objective but knowledge transfer and empowerment to all employees involved is a definite benefit.

A decision pertaining to the acceptance of this Section 78(1) report and proceeding with a Section 78(3)/120(4) feasibility study into the external service delivery mechanism options was delegated to the Municipal Manager who has an in-depth knowledge of section 78/120 studies. The final feasibility report with its recommendations on the appropriate internal/external service delivery mechanisms to be implemented would be submitted to the Mayoral Committee and be approved by the Council. If so

approved, a negotiation phase will ensue with assistance of the transaction advisors and oversight by the Directorate Infrastructure and Planning.

12.4 KEY STAKEHOLDERS

The role-players involved in section 78 and 120 processes are indicated in the table below. Some of these are involved from the start and continuously while others, e.g. the community and treasury departments are only involved if the study proceeds to the 2nd part of the feasibility exercise that deals specifically with the WTE PPP.

Table 37: Key Role-players in Section 78 Process

Persons/Structure	Function
Transaction Advisor/s	Person/team with appropriate skills and expertise to assist the Municipality with the Section 78/120/33 Processes
Head of Directorate	The head of the department/directorate (HOD) responsible for the service/s under investigation, or another senior person with good project management skills delegated by the HOD to champion the process
Project Officer	Person within the municipality who assists the HOD with the S.78 / 120 Process and, if the process leads to the conclusion of an outsourced contract, this person may assist with fulfilment of legal contract monitoring obligations, i.e: <ul style="list-style-type: none"> • Monthly performance monitoring • Enforcement of the contract • Day-to-day management of the contract • Reports to the Council or a Board of Directors (if an entity)
Other Managerial Staff	Senior managerial staff of other affected departments, e.g. the Finance and Management / Human Resources Services liaises with the Transaction Team and provide all required information.
Municipal Manager	As the municipality’s Accounting Officer, the municipal manager must oversee the process, e.g. ensure that Treasury and the community are consulted, and also has overall responsibility for the finalisation of the process and implementation and monitoring of the agreed option. In the case of Drakenstein the Municipal Manager approves the Section 78(1) report and submits the Section 78(3)/120(4) as well as the section 33 contract and reports to the Mayoral Committee (“Mayco”) and Council.
Employees	If any, employees in the service/s under investigation must be kept up to date with the process and their concerns addressed via their trade unions, or directly should the process require it.
Organised labour	From the inception of the process, the trade unions must be engaged in consultation and their views solicited and recorded in minutes.
Community & IAPs	From Phase 2 of the process, i.e. the Section 78(3) / 120(4) Feasibility Study into external service delivery mechanisms, the community and other interested and affected parties (I&APs) must be consulted. Their views must be solicited through meetings, notices, the media or as otherwise prescribed and recorded in minutes.
National and Provincial Treasury	Four times during Phases 2 and 3 of the process, the municipality must obtain the views and recommendations of Treasury, i.e. during the feasibility, pre-bidding, evaluation and contracting phases. National Treasury must also be approached with registration of the project and a funding application, if applicable.
Department concerned with Local Government Affairs and other State Departments	Twice during Phases 2 and 3 of the process, i.e. during the feasibility and contracting phases, the municipality must obtain the views and recommendations of the Department concerned with Local Government Affairs, i.e. Co-operative Governance and Traditional Affairs (CoGTA) and the relevant state department/s, e.g. Environmental Affairs (national and provincial) if the service investigated is solid waste services.
Portfolio Committee	The Portfolio Committee of the relevant service/department/directorate may act as the Steering Committee but irrespective it must receive and comment on documents before these are submitted to the Mayoral Committee/Council
Mayoral Committee /Council	The Mayco/Council receives and approves the Section 78/120 reports and any agreement or contract which results from the process.

12.5 CONSULTATION PLAN

The following consultations have taken place or will take place on the way forward.

12.5.1 Community

Section 78(1) of the MSA did not require community consultation therefore none took place.

As required by Section 78(3)(b) of the MSA, the views of the community must be solicited during the Section 78(3) Feasibility Study process. To comply, the Municipality will place a notice in the municipal newsletter and the local press (a newspaper of record) in representative languages, e.g. Afrikaans, English and Xhosa indicating its intention to explore external mechanisms in respect of waste-to-energy alternatives and including the particulars of the scheduled community meetings. JPCE in co-operation with the municipality will hold the following community/IAPs meetings:

- on ... July 2012 @ 19:00 at the, Paarl
- on ... July 2012 @ 19:00 at the, Wellington

At each of these meeting/s the Transaction Advisors will do a comprehensive presentation of the feasibility study process and the current details of the WTE project. Each of the meetings will be minuted and the minutes attached to the consolidated section 78/120 report including attendance registers. Public comments received will be taken into account and included in the Section 78/120 Feasibility Study Report to Council.

Furthermore, in accordance with Section 120 of the MFMA the community will be provided with the Section 78(3)/120(4) Feasibility Study Report 60 days prior to the Council meeting at which the Section 78(3)/120(4) report will be tabled. The manner in which the community consultation will be done is determined by Sections 21 and 21A of the MSA which require the following:

- Notices in municipal newsletter & local newspaper/s of record
- Radio broadcasts
- Document (e.g. report to be available at the municipal head office, applicable management area offices, applicable libraries and the municipal website)
- Notices etc. in English/Xhosa
- Notices to state the places where the documents are available, if a person needs transcribing, the place/person/time for assistance and brief particulars of the proposed outsourced contract with an invitation for comments/representations from the community.

After the Council meeting JPCE will in co-operation with the Municipality report to the community the decision taken in respect of the Section 78(3)/120(4) Feasibility Study, the timeframe of the WTE project and progress with the contracting and construction processes will also be reported to the community, e.g. through monthly notices in the municipal newsletter and the municipal website.

Lastly, the contract including 1) an information sheet and 2) a financial analysis of the contract obligations will be made available using the methods prescribed in Sections 21 and 21A of the MSA and in compliance with Section 33 of the MFMA. The latter will be done 60 days prior to the Council meeting where the contract is to be approved. Compliance with section 33 of the MFMA is required because the contract will impose financial obligations on the municipality beyond the 3 years covered in the annual budget.

12.5.2 Organised Labour

As required by Section 78(1)(a)(iv) of the MSA, the views of organised labour must be solicited during the section 78(1) Assessment process and, in terms of Section 78(3)(b)(v) of the MSA, also during the section 78(3)/120(4) Feasibility Study. The transaction advisor held a first meeting with representatives of IMATU and SAMWU respectively on 7 and 8 March 2012. A second round of meetings at which the respective provincial representatives of the trade unions will, upon their

request, be present will be scheduled to coincide with the first round of community consultation meetings in July 2012. These meetings are minuted, the minutes distributed to the relevant role-players and will be attached to the section 78(3)/120(4) Feasibility Study report to the Mayco and Council.

As also legally required this report will be available to organised labour 60 days prior to the Council meeting at which it will be tabled thus providing organised labour with a further opportunity to comment thereon. To be noted is that legislation does not dictate the number of consultative meetings to be held during the Feasibility Study and it is felt that the above constitute adequate consultation.

If any existing employees at the Paarl TS or the Wellington Landfill are to be transferred to the WTE facility such further meetings as necessary to ensure a fair and smooth transfer of the employee/s will be held by the transaction advisors with the trade union, transferring employees and the new employer.

12.5.3 National and Provincial Government

Section 120(6)(c) of the MFMA states that the municipality (specifically the Accounting Officer) must solicit the views and recommendations of NT, PT, CoGTA and the relevant state department/s, i.e. DEA and the provincial Department of Environmental Affairs and Development Planning (the “DEA&DP”) when the Section 78(3)/120(4) Feasibility Study Report has been completed. Based on these legal requirements the Municipality will submit the mentioned report to these departments in due time.

Further consultations with national and provincial government are also prescribed and these would be adhered to but with some deviations due to the pre-feasibility determination explained in the Introduction – refer to 2.3. The following will apply:

- the section 78(3)/120(4) Feasibility Study Report submission to Treasury and the other national and provincial departments to obtain TVRI will include the bid and bid evaluation documents thus leaving out the TVRIIA and TVRIIB solicitations as previously mentioned;
- solicitation of the views and recommendations of NT, PT and other state departments in respect of the PPP contract for the WTE Facility to obtain TVRIII before final approval thereof by the Council⁴⁵.

13. OUTPUT SPECIFICATIONS

This section deals with what is expected from the WTE project services and support activities. To continue with the holistic view taken by the study, the discussion deals briefly with the waste collection outputs.

13.1 SERVICE AND PERFORMANCE OUTPUTS

From a holistic perspective, the constitutional mandate of a municipality, as further detailed in local government legislation, guides all service delivery outputs. In terms of Clause 73 of the MSA, a municipality must give effect to the provisions of the Constitution and:

- give priority to the basic community needs; and
- promote development

Ensure that all community members have at least the minimum level of basic municipal services, which must in turn:

- be equitable and accessible to all;
- effectively use available resources and improve standards with time;

⁴⁵ Section 33 of the MFMA requires such consultation if a long term contract will impose financial obligations on a municipality beyond the 3 years covered in its annual budget.

- be financially and environmentally sustainable; and
- be regularly reviewed.

Key performance indicators are:

Landfills, Transfer Stations and Drop-off Facilities:

- Compliance with the permit requirements and contract conditions (the latter iro external contracts)
- Available landfill lifespan

Waste collection:

Table 38: List of Key Indicators and Unit Costs to be used to rate Waste Collection Performance

Performance Category or Relationship	Unit	Key Indicators
Cost	Rands	R/Service Point R/Tonne (if have weigh facilities) R/m ³ of waste removed R/unit of waste disposed (could be tonnes, m ³ or vehicle load etc.) R/worker R/vehicle etc.
Based on Service Points	Number of Service Points	Service Points / worker kg / Service Point Vehicles / Service point Service Points / Loader Cleaners / Service Point
Quantity of Waste handled in terms of mass or volume.	Tonnes or m ³ or truck load (for equally sized vehicles) or bags of waste etc.	T/worker per day (or week or month etc) kg/service point T/day T/vehicle T/collection round Bags/worker
Resources utilised	Vehicles, machines, supervision, management, depots or area divisions,	Loads/Refuse Collection Vehicle Bags/Refuse loader Service Points / Refuse loader Supervisors / Service Point Managers / Service Point

- Percentage of the population receiving a waste collection service;
- Improvement on level of service given per population;
- Percentage of the population receiving a door-to-door service;
- Number of complaints related to collection activities;
- Percentage of waste illegally dumped which is collected related to all waste collected;
- Number of people registered as indigent (related to expected numbers);
- Number of incidents of illegal dumping; and
- Amount (tonnes) of illegal dumping cleared by Drakenstein

13.2 COLLECTION OF WASTE AND WASTE SEPARATED AT SOURCE

Waste collection services are rendered in Drakenstein in accordance with the service levels stipulated in regulations and contained in its new ‘to be promulgated’ waste by-laws. It implies that all areas except rural areas where it is not possible, is receiving a refuse removal service.

However, there are areas for improvement. The current fleet includes a number of vehicles that has passed their economic lifespan and needs to be replaced. As the Municipality, by enforcement through its new Integrated Waste Management By-law, becomes the only waste collection service provider in Drakenstein, it will need more vehicles and human capacity to serve specifically business

consumers or appoint other service providers to do so on its behalf since the current vehicle planning schedule of replacing one vehicle every three to five years, does not present an ideal scenario. The Municipality should consider a quicker upgrading of the fleet if it wants to be the only service provider of solid waste removal services in the DLM area.

The figures included in the previous section indicate that the Municipality's workload in respect of the removal of 240l household bins once per week has increased with 41% as recorded over a 9 month period. If proven to be a trend, the increased number of collection points and the relationship between waste volumes and collection points must be factored into the Municipality's planning.

Thus currently focus areas of the waste collection service should inter alia include:

- the extent and impact of the increase in its workload and the average age of its the fleet on service rendering to do short, medium and long term planning in respect of its assets, liabilities and staff;
- how the WTE project could assist the Municipality to save on treatment and disposal costs, enable the deployment of more labour to the collection teams, enable it to prioritise the capital investment needs of the collection services, e.g. purchasing of more vehicles sooner, focus on rendering of a more effective collection service through the optimisation of the level of service, the type of containers and the type of vehicles.

Waste separated at source:

The collection of waste separated at source is part of the Paarl MRF contract but there is doubt about the financial viability of the activity albeit the potential positive impact of community education on waste minimisation is clear.

There is a need for the Municipality to determine:

- Which is the most feasible alternative i.r.o. affordability and VfM; 1) source separated material recovery or 2) post collection separation of recyclables taking into account:
 - the material, equipment and human resources' costs of rolling-out the collection of waste separated at source to all 31 wards of DLM; and
 - the difference in labour costs and process times between these methods.
- If the roll-out of waste separation at source is financially viable and continues, who should be responsible for the 'collection of waste separated at source' when the Paarl MRF contract ends in October 2012 or, if extended, October 2013, the alternatives being:
 - the Municipality which could include redeployed employees from the Paarl TS and the Wellington Landfill;
 - a private party by including it in the WTE contract;
 - Small, Medium and Micro Enterprises ("SMME") or Community Based Organisations ("CBO")⁴⁶ by the outsourcing thereof to anyone or both these parties; or
 - utilising and expanding the MCP contractor services to render the services.

In deciding on these options the Municipality will have to take into account that:

- The WTE business plan includes the management and operation of the Paarl MRF but not the collection of waste separated at source. The only commitment given was to do an assessment of the feasibility to include it. It is clearly not an essential component of the WTE project;
- The above is quite correct given that it is primarily a collection activity and not a waste treatment or disposal related activity;
- Collection of waste separated at source could empower entrepreneurs and stimulate job creation if linked to the MCP with the overhead costs of the project arguably lower than the Municipality's but taking care of not exploiting labour.

13.3 WASTE HAULAGE

Waste is transported from the Paarl TS to the Wellington Landfill by a contractor who won a three year competitive bidding contract. The contract includes the supply of all labour, plant, tools, equipment, management, co-ordination and liaison necessary to transport and offload the waste at the landfill site. Back-up vehicles for breakdowns must be available within six hours. These requirements imply the contractor must be company whose core business includes the transport of waste.

Quick and efficient transporting of waste from the Paarl TS to the Wellington Landfill is the service output needed. The Municipality must decide how to handle this support activity when the contract expires by August 2014 in order to ensure the service output it wants. The alternatives would be:

- An internal service provided by the Municipality;
- A competitive bidding tender as was the case with the current contract; or
- Including it in the WTE project and factoring the costs into the 'tipping fee'.

In deciding on these options the Municipality will have to take into account that:

- A transport operator that complies with the Municipality's competitive bidding criteria and has the benefit of economy of scale operations to support reasonable costing will from a value-for-money and affordability point of view be better suited to deliver this service than the Municipality given that the Municipality does not have the current capacity, or the vehicles or the financial resources to purchase the vehicles and these are the reasons why the contract was outsourced in 2011 and prior thereto;
- The WTE business plan did not mention the waste haulage; either because it is already outsourced or because of not regarding it as an essential component of the WTE project or not having the resources or skills to deliver the service;
- Given that the waste haulage from the Paarl TS to the Wellington Landfill is an important link in the WTE operations it might be a good thing to keep one operator, i.e. the WTE contractor responsible, i.e. a direct and single line of accountability;
- A contractor that does not include waste haulage in its core business portfolio, including the WTE operator, will have to do the same kind of capital and human resources investment than the Municipality.

From a legal point of view it is important for the Municipality to consider its options if this transport contract is bound to be included in the WTE project but comes to an end before the WTE project operations commence. It emphasizes the need for flexibility and for the WTE operations to be phased in such a manner that the phases link up with the Municipality's needs. The following are considerations:

- To amend the contract in terms of Section 81(4) of the MSA⁴⁷ to make provision for another year or 18 months' of operation or as required (but within limits) until the WTE project can take over the transport operation provided such arrangement is consistent with the SCM policy; or
- Including in a DLM-WTE contract the phasing of operations in order to accommodate the WTE operator taking over the transport support activity when needed albeit linked to the other components of the WTE operations in order to mitigate risks inherent in the phasing of operations.

13.4 WASTE TREATMENT AND DISPOSAL

The municipal services, i.e. the Wellington Landfill and the Paarl TS envisaged as part of the WTE project and the municipal support activities, i.e. the MRF operations and the WTE Facility that will be

⁴⁷

Section 81(4) of the MSA stipulates that a service delivery agreement concluded through competitive bidding may be amended by the parties (municipality and contractor) but only after the local community has been given notice of the amendment and the reasons for it and had sufficient opportunity to make representations thereon to the municipality.

part of the WTE project involve the waste treatment and disposal components of the municipal solid waste function.

13.4.1 Wellington Landfill

Since 2005 the Wellington Landfill operations have improved. However, a number of problem areas including inadequate equipment, leachate and storm water problems cause non-compliance with permit conditions. Of serious concern is the valuable airspace that is lost.

The last landfill survey done in December 2011 found that 62% of the total airspace had been used with an estimated lifespan until 2016. At the end of 2012 waste diverted from landfill was put at 3%. However, it is felt that with the latest recycling figures this percentage could be much higher and higher percentages of chipped and crushed materials diverted from the landfill has also been recorded. The transaction advisors believe that these waste-to-landfill reduction figures plus better compaction on site could easily increase the lifespan of the Wellington Landfill beyond 2016 but to address the problem areas will require expertise, the correct plant to properly compact the waste and financial capacity.

The Municipality has in principle agreed that the Wellington Landfill will form part of the WTE project and operations. Apart from the fact that the landfill is an essential part of the WTE solution, the transaction advisors believe this is the right decision. Experience has shown that landfills operated by the private sector are more efficient and meet higher environmental standards than those operated by the public sector. This is partly because landfill operations are so specialised and the private sector invest more in equipment and skilled human resources. But the main reason is accountability. An external contractor is normally awarded the operation and management of a landfill based on a tender with specific specifications and performance indicators based on the landfill's permit conditions. It enables strict regulation of the external contractor with penalties or non-payment if non-compliance occurs. On the other hand it is often difficult to hold the public sector accountable for its performance.

Besides performance management and monitoring by the Municipality, the preferred bidder has ISO 9001 and ISO 14001 accreditations. It implies that both in terms of management practices and environmental practices, the firm has to comply with international standards that ensures the public of an effective service and gives the Municipality added peace of mind albeit not lessening the need for good contract management and monitoring.

When a municipality wants to involve the private sector in the operation of a landfill it normally follows the competitive bidding route with a Construction Industry Development Board⁴⁸ ("CIDB") contract including specific contract conditions and, if it is a PPP, the contract is amended to include the PPP contract requirements. Due to the nature of the RFP process that was followed for the WTE project, the foundation of a CIDB contract including the conditions and standard of services, performance parameters and penalties is lacking.

In taking the project forward the Municipality must have clarity on why the landfill is envisaged to be part of the WTE project; take note of the abovementioned realities and shortcomings and also get clarification for inadequate role definitions. Important points are:

- To enable the WTE project it would be essential to outsource the management and operation of the Wellington Landfill to the preferred bidder given the possible inclusion of Structured Landfill Cells ("SLFC") and inclusion of Landfill Gas ("LFG") extraction as part of the WTE combination of technical options;
- It is as essential for the WTE operator to stretch the lifespan of the Wellington Landfill as it is for the Municipality and the WTE operator is in a better technical and operational position to do it and able to acquire funding when necessary;

⁴⁸ The CIDB is a Schedule 3A public entity. The contracts of the CIDB are widely used in the construction and engineering industries.

- The Municipality pays a tipping fee on the waste that is off-loaded at the Wellington Landfill to the WTE contractor which tipping fee includes savings on the operating costs of the Wellington Landfill, the Paarl TS and the Paarl MRF;
- Since not included in the RFP financial modelling - further clarification is needed about what the WTE operator includes in the operation of the Wellington Landfill, Paarl TS and Paarl MRF, i.e. does it only include the transfer of technical and operational knowledge, capacity and risks with the Municipality still having to finance all capital items or would it also include the transfer of financial risk pertaining to the management and maintenance of the infrastructure and perhaps even capital investment in fixed assets such as the second weighbridge that is needed and offices;
- The RFP was a different process with no prescribed specifications, levels and standards of service or non-performance penalties as would normally be in a tender document. These specifications must still be determined and contractually entrenched and will have an impact on the operating costs and the tipping fee.

13.4.2 Paarl Transfer Station and MRF

The Paarl TS is well run and an upgrading and extension thereof including a new office building at a cost of R1,55m have been budgeted for. Essentially there are no operational deficiencies at the Paarl TS necessitating the outsourcing of its operation. However, the transaction advisers believe that including the operation of the Paarl TS with the Paarl MRF (which is adjacent thereto on the same premises) in the WTE project as envisaged, will enable the WTE contractor to consolidate its operations in an integrated business plan that will enable synergies and possibly savings and it will provide the Municipality with a single source of accountability for its solid waste treatment and disposal operations.

As applicable to the Wellington Landfill operation, there are gaps in terms of the service outputs that are expected from the external operation of the Paarl TS requiring the Municipality to:

- Determine what should be included in the operation of the Paarl TS to clarify technical, operational, financial and managerial roles and responsibilities including capital and operational expenditure requirements;
- Lay down the conditions and standard of service and non-performance penalties that will apply since these must form part of the contract management plan and criteria required in terms of legislation⁴⁹ preferably as part of the CIDB contract referred to under item 13.4.1.

The Paarl MRF contract comes to an end in October 2012 or, if extended as provided for in the contract, in October 2013. The Municipality does not have the capacity or knowledge to operate the MRF and enter the recyclables market. Besides, direct involvement of a municipality in the commercial activities that forms part of a recycling operation might be in contravention of Section 164 (Forbidden Activities) of the MFMA⁵⁰.

The long term sustainability of a single MRF is not as good as it forming part of an integrated waste management process including economy of scale and other supporting operations. The transaction advisers believe that it would not be feasible to exclude the Paarl MRF from the WTE operations and it has to form part of the WTE project as envisaged in order for the WTE operator to get the full recyclable waste stream as required. There is nothing withholding the current operator to endeavour being part of the WTE operations but the Municipality should not get involved in any arrangements of this nature.

Similar to the Wellington Landfill and Paarl TS, the RFP process did not allow for the determination of service conditions, standards, performance outputs and penalties as would have been the case with a competitive bidding tender. A 'what if' legal question also arises if the Paarl MRF contract comes to

49

Section 116 of the MFMA and the PPP Guidelines of NT

50

The matter will need to be clarified with NT. To knowledge there are no other municipalities operating a MRF and conducting commercial activities in the recyclables market.

end before the commencement of WTE operations. To enable it to get the outputs it want, i.e. effective and efficient management and operation of the Paarl MRF, the Municipality will need to pay attention to:

- Inclusion of the Paarl MRF in an envisaged CIDB based PPP contract in which all the matters previously mentioned are spelled out;
- Clarification if Section 81(4) of the MSA could be used to extend the current contract until the WTE operator can assume the operation of the Paarl MRF.

13.5 WASTE TO ENERGY FACILITY AND OPERATIONS

An outsourced municipal service or activity must provide VfM for it to be feasible. From a municipal point of view the potential **VfM outcomes** offered by the WTE project are primarily the following:

- the minimisation of waste to landfill;
- increasing the lifespan of the Wellington Landfill; and
- the socio-economic advancement of the community through job creation.

Linked thereto is its affordability for the Municipality; it not being a risk for the Municipality but the latter actually succeeding in transferring substantial risk to the private party and, in as far as possible, guaranteed long term financial viability. Secondary but equally important is the generation of electricity that the Municipality can purchase at a reasonable price and protection of the environment.

Outputs to be achieved through the WTE project are:

- A successful WTE project based on a reliable dataset and combining best suited technologies (**refer to Section 2, par. 2**) and processes to establish an integrated waste management system in partnership with the Municipality and to the long term benefit of both parties and the community;
- Minimisation of waste to landfill;
- An optimum lifespan for the Wellington Landfill;
- Maximisation of avoided costs;
- Generation of affordable electricity;
- Maximum recovery and recycling of waste products within the limits of the recyclables market;
- Cost-effective management and operation of the waste treatment and disposal activities linked to the WTE operations, e.g. the Paarl TS;
- Maximum local job creation;
- Maximum local content i.r.o. the WTE construction and operational requirements;
- Maximum environmental benefits outweighing environmental disadvantages (refer to Section 2); in the form of reduced GHG emissions; reduced leaching, reduced land contamination; reduced depletion of natural resources;
- Minimum noise generation.

To ensure the achievement of these outputs, it would be necessary to;

- Complete a project value assessment based on a reliable dataset and financial modelling taking into account all risks and liabilities;
- Contractual arrangements that allows for practical phasing of the project but with the built-in protection that the Municipality is not held ransom if the private party fails to affect any part of the contract including enforcement of penalties as a recourse to sub-standard performance thus meaning all risks and possible contingent liabilities must be identified and mitigated.

14. PROJECT SCOPE

Necessary or synergetic components of the WTE project include the less labour-intensive waste treatment and disposal services of the DLM and exclude the more labour-intensive waste collection

and cleaning services of the Municipality. However, the WTE project will turn the waste treatment and disposal services also into labour-intensive services through the large number of jobs, i.e. 130, involved in especially the MRF operations.

The WTE project has the ability to moderately or significantly upgrade municipal assets and broaden the DLM asset base depending on the contractual terms and conditions that the DLM and the WTE operator negotiate and conclude. The Municipality will need to strike a fine balance in respect of risk transfer in order for it to pass significant risk to the WTE operator without such risk transfer being too costly for one or the other party and making the project unaffordable for either the Municipality or the WTE operator.

Diversion of waste to landfill is projected to be 61% as per the preferred bidder's proposal with a predictable huge impact on the lifespan of the Wellington Landfill.

Allowing a contract of suitable duration will have a positive impact on the total cost for the Municipality and the ROI that the WTE operator can achieve. The minimum duration of the project will need to be 20 – 25 years.

There can be no doubt about the strategic, environmental, socio-economic, financial and technical importance of the WTE project for the community, the DLM and the Western Cape.

SECTION 2: PRELIMINARY SOLUTION OPTIONS ANALYSIS

1. MUNICIPAL SERVICES AND ACTIVITIES CONSIDERED

The existing municipal services and activities envisaged to form part of the WTE project are:

- the Wellington Landfill operation;
- the Paarl Transfer Station operation including the composting activity;
- the Paarl Material Recovery Facility operation (currently outsourced);
- the transport of waste from the Paarl TS to the Wellington Landfill (currently outsourced)

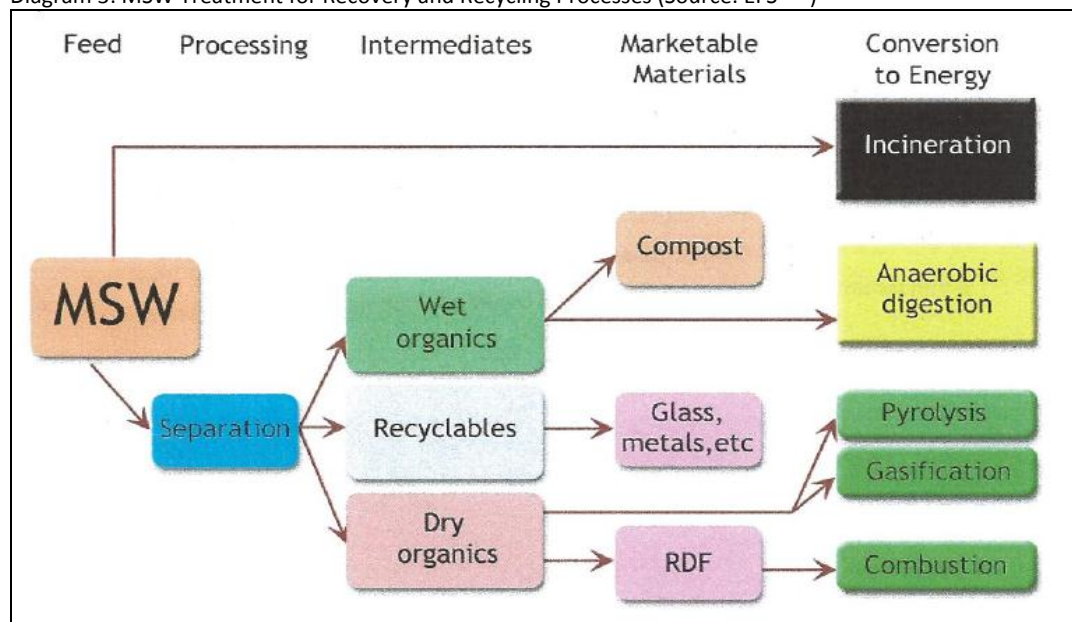
The new municipal activities envisaged to be added by the WTE project are:

- the WTE facility with its various technologies
- the MRF at the Wellington Landfill.

2. TECHNICAL OPTIONS ANALYSIS

There are a number of technologies available for the treatment of Municipal Solid Waste (“MSW”). These can be used as standalone systems or combined systems or all incorporated into a total integrated waste management solution – refer to Diagram 3. The DLM is in favour of an integrated solid waste solution which is made up of best suited technologies but it should be affordable and sustainable. The technologies considered by the preferred bidder included the MRF, gasification/pyrolysis; structured landfill cells/anaerobic digestion and LFG extraction.

Diagram 3: MSW Treatment for Recovery and Recycling Processes (Source: EFS²⁰¹⁰)



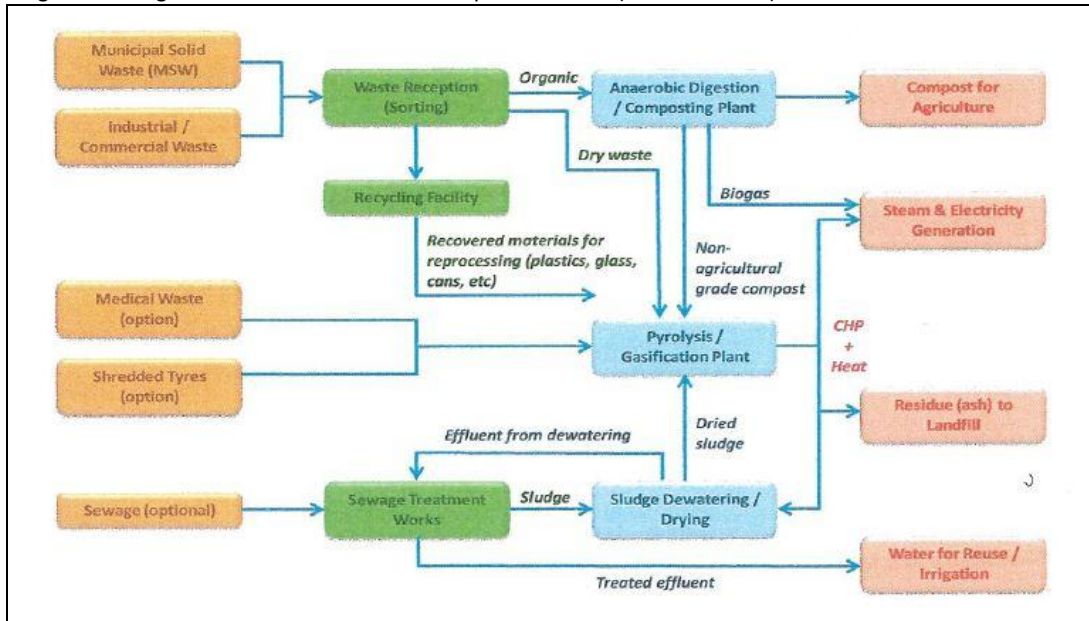
A number of factors influence the choice and integration of these technologies, namely:

- Waste quantities – a large waste stream works well with some technologies while a smaller waste stream is better suited to other technologies;
- Waste composition – e.g. anaerobic digestion is not recommended if only a small fraction of the waste stream is organic;
- Land availability and environmental impact;
- National, provincial and municipal legislation, strategies and objectives;
- Capital expenditure needed - availability and terms of loans and financing methods;
- Operational expenditure which if too high can render a project unfeasible;
- Social acceptance, i.e. public acceptance of the technologies involved;

- CDM & CER considerations – is it possible to register the project as a CDM and will the project generate enough CERs to ensure the feasibility of the technologies used;
- Technology support and skills being available;
- Recyclables market – this is a very volatile market and thus a risk element to be kept in mind;
- Tipping fees – these fees must be feasible and affordable and are influenced by the technologies chosen.

An integrated technological approach including sewage sludge is depicted in Diagram 4.

Diagram 4: Integrated Waste Treatment and Disposal Solution (Source: EFS²⁰¹⁰)



Each of the technologies and the possible and preferred combination of options as put forth by the selected bidder, are discussed below.

2.1 MATERIAL RECOVERY FACILITY

A MRF forms the basis of a waste management system and can consist of manual and/or automated methods. It entails the separation of incoming waste into various streams, i.e. recyclables, organics, etc. The sorted waste is either collected for recycling, processed as an energy source or transported to the landfill to be landfilled.

Components of the MRF installation as envisaged by the preferred bidder are:

- pre-sorting area with bag opener and magnetic trommel;
- 13.5m sorting platform - 6m wide and 3m high for 20 sorters;
- x ISO shipping containers serve as structure and bays;
- x 3m wide bays for bulky products;
- ±17m sorting conveyor, 1.2m wide;
- single roll-on container for tailings;
- feed conveyor

According to estimates the MRF can create 101 unskilled jobs and 5 skilled positions; save approximately 15-20% landfill air space and render a substantial quantity of recyclables to be sold into the regional or national market.

2.2 STRUCTURED LANDFILL CELLS WITH ELECTRICITY GENERATION

Anaerobic Digestion (“AD”) represents the microbiological conversion of organic matter to methane in the absence of oxygen. The biogas resulting from anaerobic digestion is a renewable and carbon dioxide neutral fuel used to produce electricity and heat. Structured landfill cells can be designed to permit the collection of landfill gas (biogas) without extensive works and to enable good leachate drainage with as much as possible recycling thereof and the balance been treated at the WWT.

It appears that the technology needed for electricity generation is now well established in SA with the size of the landfill gas engines needed depending on the expected energy output. However, the wet organic fraction of the waste stream must be sufficient to justify the construction of SLFCs and at the time when the EFS²⁰¹⁰ was completed, the percentage of organic waste was too low. Due to the absence of a thorough investigation of the waste quantities and composition this scenario may change if a three month analysis is done as a first phase of the project. Alternatively, if the organic fraction still does not justify the construction of SLFCs, the organic waste can be utilised as feedstock for the pyrolysis plant and /or the production of compost as proposed in the preferred bid.

2.3 GASIFICATION/PYROLYSIS WITH ELECTRICITY GENERATION

Gasification is the process of converting biomass in combustible gases that ideally contain all the energy originally present in the biomass feedstock. Different from incineration, gasification occurs in an oxygen-deficient atmosphere giving limited formation opportunity to the hazardous by-products of combustion but since the gas from a gasifier may contain other unacceptable gases, the WTE project will need to include a specially designed pyrolysis/gasification process with a suitable gas clean-up to derive energy from the dry organic wastes.

The gasification process proposed by the preferred bidder combines the thermo-chemical processes of pyrolysis, gasification and high temperature oxidation followed by steam production and electricity generation. Solid wastes are converted into simple gases and used to generate heat and power. Since the plant is a closed system the only emissions are the exhaust gases which are well within the relevant emissions standards and the ash is typically high-quality bottom ash that may be suitable for uses in construction - a clean pyrolysis system.

The unit proposed for the DLM project has a capacity of up to 32,000 tonnes per annum and can generate up to 2.8MW of electricity and 10.4MW of reusable heat is designed to provide economies in operation and maintenance with features that minimise the risk of unscheduled stoppage. The combined effect of pyrolysis, gasification, high temperature oxidation and advanced NO_x treatment minimises pollution to such an extent that the process can offer one of the best environmental options for waste disposal.

Based on the EFS²⁰¹⁰ waste quantities, an estimated 3.5MW of electricity could be generated and exported from the gasification system.

2.4 LANDFILL GAS EXTRACTION

Landfill gas utilisation is an established and proven technology to produce renewable energy with a large number of such facilities all over the world. The large quantities of organic material that are deposited in landfills cause GHG emissions and leachate pollution thus creating a huge opportunity for LFG extraction and utilisation. However, the verification of the exact quantities and landfill gas being produced by a landfill site is problematic and for a LFG system to work the landfill must be of sufficient depth (i.e. 15 metres plus); the site should be capped with an impermeable seal and have adequate quantities of biodegradable waste in place. With these parameters in mind, the preferred bidder is not recommending the development of the Wellington Landfill site for LFG extraction, i.e.

the depth of the landfill is less than 10m; the WTE project components will see to it that only a small fraction of degradable material is taken to landfill thus not sufficient sources of LFG generation.

2.5 INTEGRATED WASTE MANAGEMENT SYSTEM

It would be most feasible to develop the WTE project in a few phases stretching over a number of years. In this regard, the preferred bidder proposed the following phases:

- Phase 1a:** a thorough (at least 3 months’) investigation of the incoming waste stream and its composition and, through an additional survey, other possible waste sources such as garden, abattoir, food and agricultural wastes that may enhance the financial viability of the project and may also require additional technology to be employed, e.g. AD in biodigester tanks, as well as the EIA;
- Phase 1b:** Installation and commissioning of the MRF;
- Phase 2:** Based on the updated dataset, the development of the suited technologies, i.e. the SLFCs and/or gasification and/or anaerobic digester tanks and/or LFG extraction as well as the electricity generation plant based on the net energy output until a situation depicted in Diagram 4 is reached.

2.5.1 Treated Wastewater Sludge

The preferred bidder took note of the approximately 10 000m³ of treated wastewater sludge annually discarded by the Wellington WWW at the Wellington Landfill during its dam clean-up operation. However, the EFS²⁰¹⁰ did not take this organic waste material into consideration for its project proposal due to the inconsistency of the supply. It also left out any possible sludge from the Paarl WWW due to the Municipality using such sludge itself to produce compost which is sold commercially.

2.6 PROJECT DELIVERABLES (OPTIONS)

Based on the technology combinations and phases highlighted above, the preferred bidder identified the options indicated in Table 39 and briefly discussed below.

Table 39: Project Deliverables (Source: EFS²⁰¹⁰)

Waste input - 317 t/day & 83 688 t/annum	Waste to activity t/day	Waste reduction %	Electricity export kWh p/a	CERs generated p/a	Jobs created	Land required sqm
Option 1: MRF	49	16%	0	0	103	35 000
Option 2: MRF & SLFC	149	47%	5 606 400	23 300	120	60 000
Option 3: MRF & Pyrolysis	193	61%	16 258 560	51 689	116	40 000
Option 4: Total Project	263	83%	21 864 960	74 989	130	65 000

These figures will be amended in accordance with an updated dataset derived from a thorough waste stream analysis during the initial Phase 1a as proposed and to be reflected in the section 78(3)/120(4) Feasibility Study.

2.6.1 Option 1: MRF with tailings to the Wellington Landfill

The waste is received at a reception area, pre-sorted, fed into the MRF with manual and automated separation and sorting waste. Extracted recyclables are baled into their categories, e.g. plastic, paper, metal, glass and stored for collection by recycling companies. All other waste is transported to the landfill.

2.6.2 Option 2: MRF with SLFC with Electricity generation

This option will be considered if the fraction of wet organic waste is sufficient (i.e. exceeding 80t/day). In addition to the MRF, SLFCs are constructed to receive all the wet organic waste extracted from the waste stream. AD processes takes place with the generated biogas been collected and taken through electricity generation units, engines and processes. For 80 tonnes per day of organic waste a 1MW electricity generation plant can be installed. The remainder of the waste stream is taken to the landfill and the digested remains is reworked and sold as compost.

2.6.3 Option 3: MRF and Clean Pyrolysis with Electricity generation

This option will include the MRF, exclude the SLFCs and rather than the latter include a Gasification/Pyrolysis plant where all the degradable waste is sent to generate steam. The steam is fed to a turbine which in turn generates electricity. The only waste that is taken to the landfill is inert material and the ash residue form the gasification process. The model assumes that 163 tonnes per day of the waste stream is fed into the Gasification Unit, which then converts it into sufficient heat energy to generate 1.7MW of electricity.

Based on the incoming waste stream that existed in 2010, this option seemed to be the most feasible.

2.6.4 Option 4: LFG Extraction with Electricity generation

As indicated under Section 2, item 2.4, the extraction of LFG from the Wellington Landfill was not considered to be a viable option but a reassessment as envisaged could change the scenario.

2.6.5 Option 5: Integrated Waste Management

This option integrates all the technologies, i.e. the MRF, SLFCs and Gasification into a complete system which could also include AD tanks and LFG extraction if deemed feasible.

2.7 ECONOMIC AND FINANCIAL FEASIBILITY

The economic feasibility of these options is depicted in Table 40 and a financial comparison of the options is set out in Table 41.

Table 40: Economic Feasibility – Assumed Data for Financial Modelling (Source: EFS²⁰¹⁰)

Data		2009-2010	2012
REFIT rates	biogas	R0.96 p/kWh	R0.80 p/kWh
	biomass	R1.18 p/kWh	R1.07 p/kWh
Recyclable rates	paper	R500 p/ton	
	plastics	R1 500 p/ton	
	glass	R350 p/t	
	metal	R1000 p/ton	
Price per CER		R180 p/t	R106 p/t
Compost price	For now not taken into account but can be an additional income		
Waste input	total	317 t/day	
	recyclables	49 t/day	
	to pyrolysis	144 t/day	
	to SLFC	80 t/day (if available)	

The preferred bidder did comprehensive financial modelling based on the waste and economic data available to it. Sources of revenue were identified as the:

- tipping charges paid by the DLM;
- tipping charges paid by private waste contractors;
- sale of recyclables and compost (where applicable);
- sale of electricity to the DLM; and
- sale of CERs either through forward selling (more secure) or on the spot marketing (high risk).

Table 41: Projected Financials (Source: EFS²⁰¹⁰)

Estimation of Deliverables - Option Comparisons						
Waste input - 317 t/day & 83 688 t/annum	Annual Financial Analysis					
	CAPEX ('000)	OPEX ('000)	Revenue ('000)	IRR (internal rate of return)	NPV (nett present value)	Payback period
Option 1: MRF	R 74,447	R 6,425	R 19,351	18.07%	R 116,101	8.56
Option 2: MRF & SLFC	R 141,753	R 9,548	R 30,273	15.91%	R 134,890	8.65
Option 3: MRF & Pyrolysis	R 146,053	R 8,741	R 52,637	31.00%	R 444,769	4.88
Option 4: Total Project	R 220,968	R 12,590	R 63,559	24.95%	R 441,597	5.76

Since the EFS²⁰¹⁰ was done a number of the economic and financial parameters have changed and need to be adjusted in accordance with the amended figures based on government policy changes, e.g. the REFIT tariff capping, international trends and more accurate data of the incoming waste stream of the DLM as well as the impact of a full risk assessment, e.g. taking into account the continuity of the CDM for more developed countries. Especially the Capital Expenditure (“**Capex**”) and Operational Expenditure (“**Opex**”) costs have been based on the waste quantities determined during the EFS²⁰¹⁰ and could change significantly depending on a new dataset. It follows that the financial modelling of the various options must be re-worked to arrive at reliable figures for a VfM assessment.

Of paramount importance in the VfM assessments that will be addressed in the full Section 78(3)/120(4) Feasibility Study is the specific municipal context within which the WTE project is developed since the context dictates the assessment criteria, i.e. ensuring an extended lifespan for the Wellington Landfill through maximum reduction of waste to landfill and quality, reliable and affordable landfill operations combined with maximum job creation to serve the socio-economic needs of the community and protect their environment by reducing the carbon footprint of the Municipality.

3. SERVICE DELIVERY MECHANISM OPTIONS

If a municipality assesses the service delivery of an existing municipal service, it is in terms of Section 78(1) of the MSA bound to assess internal service delivery mechanisms first to determine if current or other possible internal mechanisms could be sufficient to achieve the planning or development objectives of the municipality, e.g. significant upgrading or extension of the municipal service. If it is then found that the current or possible internal mechanisms will not be feasible for the achievement of objectives, e.g. enabling large capital investment or scarce expertise, the municipality can assess the feasibility of external service delivery mechanisms, e.g. PPPs and eventually compare the advantages and disadvantages of the internal and external service delivery mechanisms to reach a decision on the way to pursue.

If a municipality wishes to assess the upgrading or extension of a municipal support activity or a totally new municipal support activity it is not bound to the MSA but need to consider the feasibility of external mechanisms based on the criteria put forth by the MFMA and the PPP Regulations.

As discussed in the Introduction and throughout the document, this study concerns existing municipal services, i.e.:

- the operation of the Paarl TS;
- the operation of the Wellington Landfill;

- the collection of waste separated at source in 5 of the 31 wards in DLM (although outsourced);

and municipal support activities, i.e.:

- the current MRF operations at Paarl TS;
- the planned MRF operations at the Wellington Landfill site (related to the WTE);
- the transport of waste from Paarl TS to Wellington Landfill (outsourced / can also be regarded as part of the municipal treatment and disposal services);
- the WTE facility with its various technologies depending on the most feasible option pursued.

The study has discussed but discarded the idea of the DLM developing the WTE facility and its related components as an internal support activity due to financial, technical and operational reasons.

More attention was paid to the feasibility of including the internal municipal services (as mentioned above) with the WTE project for operation thereof by a private party and this discussion is again pursued below to consider it in accordance with prescribed criteria.

Another facet of the service delivery options analysis includes the assessment of the possible internal and the possible external service delivery mechanisms. The internal mechanisms allowed for in the MSA are:

- a department or other administrative unit within the Municipality's structures;
- a business unit operating within the administration and under Council's control;
- another component of the administration

External mechanisms allowed for in the MSA consist of service delivery agreements with any of the following:

- a municipal entity including a private company, service utility or multi-jurisdictional service utility;
- another municipality, i.e. a public-public partnership through non-competitive bidding and a service delivery agreement;
- a national or provincial organ of state, i.e. a public-public partnership through non-competitive bidding and a service delivery agreement;
- a private institution, entity or person with relevant skills and experience, i.e. a public-private partnership through a competitive bidding process and a service delivery agreement or whichever legal contractual arrangement is necessary.

An overview of these external service delivery options are provided in Diagram 4 and Table 42.

4. ASSESSMENT OF MECHANISMS AND PROJECT IMPACT

4.1 DIRECT AND INDIRECT COSTS AND BENEFITS

It is not of any importance to this study to consider the different internal mechanisms separately. If any of the internal municipal services envisaged for inclusion in the WTE project, i.e. the operation of the Paarl TS, the operation of the Wellington Landfill and the collection of waste separated at source is to remain within the DLM, no changes need to be made with regards to the internal mechanism implemented. It is feasible to be managed by the current waste division although the method used, may differ.

The MSA provides certain criteria in terms of which an internal mechanism in respect of municipal waste services must be assessed. A primary consideration is whether the Municipality can commit and budgeted for adequate human and financial resources to implement and sustainably manage and operate the service components and facilities forming part of the project and in accordance with the MSA.

The clear cost benefits of implementing the WTE project was indicated in Section 1, Item 11.4. Specifically Tables 34, 35 and Graph 5 provided an overview of the negative cost consequences should the Municipality not embark on the WTE project, i.e. expenditure on landfill development and/or transport of waste to other landfills, etc. which adds up to more than R514m at net present cost (2010 figures) due to the short lifespan of the Wellington Landfill if waste to landfill is not reduced and none of the other positive objectives such as recycling, electricity generation savings, etc. is realised. The costs of the various WTE options are indicated in Table 41, with the best suited option estimated to involve a capital investment of R146m at 2009 figures. There is no doubt that the Municipality does not have the financial resources to carry, what should turn out to be, avoided cost and WTE development costs.

Being able to operate the Wellington landfill in an efficient and cost-effective manner is an integral part of the WTE solution to maximise the lifespan of the landfill. Operating the Paarl TS and the Paarl MRF adds to the synergy of consolidating the waste treatment and waste disposal activities and the Municipality will share in the cost benefits to be derived from these integrated operations albeit having to ensure such benefits are optimised through contract negotiations.

The in/direct costs and benefits of the current collection of waste separated at source must be further investigated inter alia through a comparative analysis with similar practices in comparable towns and a decision taken on the feasibility of collection of source separated vis-à-vis post collection separated waste before the mechanism and/or method of collection is further considered. Such a study must also look at ways to improve the quality of recyclable materials and include the feasibility of community recycling pickup points or centres within the broader context of the NWMS.

4.2 IMPACT ON THE ENVIRONMENT, HEALTH AND SAFETY AND HUMAN WELL-BEING

The DLM and its officials are very aware of the importance of environmental matters. The reduction of waste to landfill is one of the primary reasons for embarking on the WTE project. The current calculations show that only 3% of waste is diverted from the Wellington Landfill while the WTE project predicts a 61% reduction of waste to landfill. Two fully operational MRFs, i.e. at the Paarl TS and the Wellington Landfill will imply substantial growth in recycling activities which it is hoped will be met by a sustainable financial viable recyclables market.

Specifically a landfill site is potentially harmful to the environment if not operated correctly with the necessary expertise and in accordance with its permit stipulations. The last audit of the Wellington Landfill did indicate a number of permit transgressions which need either capital or operational expenditure to address and more effective operational management. By excluding the operation of the landfill from the WTE project these objectives will not be achieved but by including it, the Municipality will transfer financial, technical and operational risk to the preferred bidder who has the expertise and resources to execute the necessary action within a negotiated framework that spells out performance targets and the penalties linked to performance failure.

The benefits to be gained from MSW energy recovery are:

- reduced GHG emissions;
- reduced acid gas emissions;
- reduced depletion of natural resources (fossil fuels and materials);
- reduced impact on water (leaching); and
- reduced land contamination.

MSW energy supply is limited by the availability of raw material given the latter being a finite resource but MSW is a major contributor to renewable energy. It appears that the carbon dioxide emissions from renewable energy projects are not considered as harmful due to the overwhelming net benefit gained. However, the construction of the WTE project will have a limited impact on the environment. There will be three sources of emissions to air, i.e. exhaust gases from the gas engines, the gasifier and the standby flare but the nitrogen oxides (“NO_x”) and carbon monoxide (“CO”) emissions will be minimum, i.e. well below the 500mg/m³ limit.

No additional contamination of land is expected to be generated since the oil and fuel used by the plant will be stored in concrete bunkers. The removal of leachate from the landfill site (a major current problem) will add leachate to be treated at the Wellington WWTW but the positive benefits thereof by far exceeds the municipal cost involved.

At a national and international level, the WTE project is expected to produce a net benefit meaning that for each MW of power capacity installed the potential is to destroy approximately 1,850 tonnes of methane per annum. In terms of GHG or CO₂ equivalent, this is equal to 38,850 tonnes per annum. In terms of fossil fuel consumption displaced, this is equivalent to approximately 2,250 tonnes of oil.

Another risk factor linked to the handling of waste is occupational health and safety. On a practical level, improved waste practices arrived at through the more effective operations would advance the health and safety of the workers fulfilling these activities. The result should be that respiratory problems and the continuous inhalation of carcinogenic trace components of landfill gas are reduced; odours resulting from landfill gas and the potential for lateral gas migration from the site should be significantly reduced and safety improved through the reduction of explosion hazards from gas accumulation in structures on or near the landfill.

Furthermore, the Municipality, under the constant scrutiny of organized labour and its own human resources policies, is obliged to implement the correct health and safety measures and provide agreed on PPE to all staff. Similarly, any external service provider would have to implement work practices and procedures that enhance the health and safety of employees and would perhaps even more so than internally be monitored to ensure it happens.

Noise generation could be a negative impact of the WTE plant but is not expected to be a real issue given the location of the site, i.e. in an industrial area and near the railway line. However, if noise has to be contained there are a number of ways in which it can be done, e.g. a brick wall.

It could be expected that the WTE project will have a positive impact on communities' environmental responsibility specifically if it is used to increase community awareness and the community being made proud of the fact that they will receive a portion of electricity from a renewable energy source rather than been generated through the conventional coal-fire method.

4.3 SKILLS, EXPERTISE AND RESOURCES

A specific compliance condition stipulated in the MSA iro internal service delivery mechanisms, is that substantial human and financial resources must be committed to the services/facilities – not only in the form of numbers/figures but also in respect of expertise. The development and operation of a WTE facility and its various components require scarce skills and expertise that is not readily available in SA and definitely not in municipalities where WTE generation is completely new. The lack of municipal financial resources to develop only another MRF at the Wellington Landfill or a full WTE facility has been pointed out.

The Municipality does not have the trucks or truck drivers needed for the transport of waste from the Paarl TS to the Wellington Landfill and has not budgeted for these plant and resources. In the absence of the WTE project and the waste haulage becoming part thereof, the Municipality's course of action would be a further competitive bidding waste haulage tender. Similarly the Municipality has an external hiring contract for the plant, machinery and drivers it need for the Wellington Landfill operations and has not budgeted the at least R5m to purchase at least a compactor and a front end loader. The DLM's first priority is continuous upgrading of its own collection fleet.

4.4 DEVELOPMENT, JOB CREATION AND EMPLOYMENT

Although DLM is committed to the training of new and existing staff members and could finance it through LGSETA monies, equally so is an external service provider able to do it and the track record of the private sector is normally very good in respect of the training and development of staff.

The WTE project will create at least 116 jobs, i.e. 107 unskilled and 9 skilled jobs and will recruit the unskilled staff and as many as possible of the skilled staff, locally. If the waste stream (according to an updated analysis) allows the implementation of the identified technologies, a total number of 130 new jobs are possible. These jobs are in addition to the employment generated during the construction phase.

Downstream economic activities established as a result of rendering support services to the WTE facility, will also create a number of sustainable jobs and all of these will include a training component. Specifically the WTE and its related operations will ensure significant skills transfer.

However, it must be noted that the project will developed over two to three years with the MRF (largest job creator) possibly not been commissioned before the latter half of 2014.

4.5 ORGANISED LABOUR

Organised labour was consulted about this process and it was explained in sufficient detail. An undertaking was given that the unions will have an opportunity to comment on this report, i.e. the Section 78(3)/120(4) report will be available to organised labour 60 days prior to the Council meeting at which it will be tabled.

In essence, organised labour is not pro-outsourcing and it can thus be expected that organised labour will thoroughly interrogate the outcome of the Section 78 process. However, the information given in this report and further reports will be adequate to support the findings and recommendations arrived at and the views of organised labour will be captured and conveyed therein.

4.6 SOME TRENDS IN THE PROVISION OF MUNICIPAL SERVICES

A few distinctive trends are visible in the municipal sphere of governance. These are the outsourcing of services to private contractors – 1) some large companies which can take considerable risk if it is an extensive system that must be operated and maintained; 2) especially management contracts for water and waste services if MIG or own funds are adequate for the capital works or when limited capital investment is needed but specifically required expertise is lacking within a municipality; and 3) some rather small contracts focused on creating opportunities for SMME development, e.g. waste collection in peri-urban and rural areas.

The principle of providing free basic services is being applied in most municipalities and tariff structures have been introduced to support this. Use is being made of the basic services component of the equitable share to help offset the cost of the “free” basic services but in many municipalities the practice to use such funding for other purposes is still rife or the indigents’ register is not reflective of the real number of indigent persons thus not enabling municipalities to claim their rightful share from the national fiscus.

Based on the 2007 Local Government Waste Capacity Assessment, the overall trend in municipalities is to under-spend iro waste services delivery in comparison with the other basic services due to waste services not being recognised as a priority service and typically getting the left over budget after water, electricity, roads, etc. Furthermore, budget increases do not mirror the waste volumes handled - in other words, allocated budgets are not representative of actual costs. Nationally it appears that solid waste services to all residents in a municipal area could be sustainable but only on condition that they

are allocated an adequate portion of the equitable share grant since the household charges required to raise the required revenue for the service are not affordable to significant numbers of households.

The introduction of GAMAP (Generally Accepted Municipal Accounting Practice) and GRAP (Generally Recognised Accounting Practices) has been forcing municipalities to look at a cash accounting approach as opposed to the accrual method. This is of particular importance to the municipal trading services, such as water, in that the level of payment received from the provision of the service is more important in the accounting process. A further trend in this regard is the “ring fencing” of accounts so that the actual surplus or deficit of a particular service is identified without any cross subsidisation and reported on a regular basis.

The promulgation of municipal financial legislation has promoted more stringent financial practices which are assisting National Treasury and the Auditor-General to enforce principles to address the current financial dire straits of many municipalities. However, on the other hand it creates a situation of certain non-compliance for many municipalities given the demands of the MFMA. The Auditor General is increasingly playing a stronger role.

Integrated development planning has outgrown its infancy phase with the majority of municipalities properly implementing the process as envisaged by legislation and the IDP including its sectoral plans being largely the identifier and initiator of new or upgraded services. Performance management as the other side of service delivery is still not implemented fully by municipalities but progress has been made. Also here the Auditor General is playing a stronger role in the evaluation of municipalities.

The public-private partnership arm of National Treasury is flexing its muscle in respect of PPPs and, besides much expanded legal regulations that should be complied with, municipalities need to solicit Treasury’s views before entering into PPPs. It has in effect become quite difficult for a municipality to proceed through all prescribed legislative phases to the point of concluding a PPP.

Although the majority of ‘new’ legislative processes that municipalities must implement provide for improved management if implemented correctly, these stipulations represent an overregulation of local government that has an inhibiting impact on service delivery due to the cumbersome and often expensive processes involved, including this section 78 process and the supply chain management processes.

5. WTE SUITABLE EXTERNAL DELIVERY MECHANISM

The EFS²⁰¹⁰ referred to the establishment of a Special Purpose Vehicle (“SPV”) for the WTE facility that will act as the Operational Entity and be registered as a separate company of which the final composition or structure will be determined by the funding mechanism employed and the levels of equity taken up by the various partners. The idea, as put forth by the EFS²⁰¹⁰, is to determine the involvement of the DLM and its potential shareholding in the Operational Entity through negotiation upon award of the contract.

Within the context of the external service delivery mechanisms allowed for municipalities there are only two options that could be applicable to the EFS²⁰¹⁰ reference above, i.e. the various forms of a municipal entity and a PPP since there is clearly no role to be played by any other municipality or organ of state. An overview of these external service delivery options are provided in Diagram 4 and Table 42.

It is possible to rule out a service utility and a multi-jurisdictional service utility as these would be owned by a municipality or municipalities. If the idea was for the DLM to take up any shares in the SPV for the WTE facility the external option available would be a private company. However, the Municipality is not allowed to acquire shares in a private company unless the majority of such shares are owned by the municipality and/or other organs of state but not by the investor/operator.

Diagram 4: External Service Delivery Mechanism Options

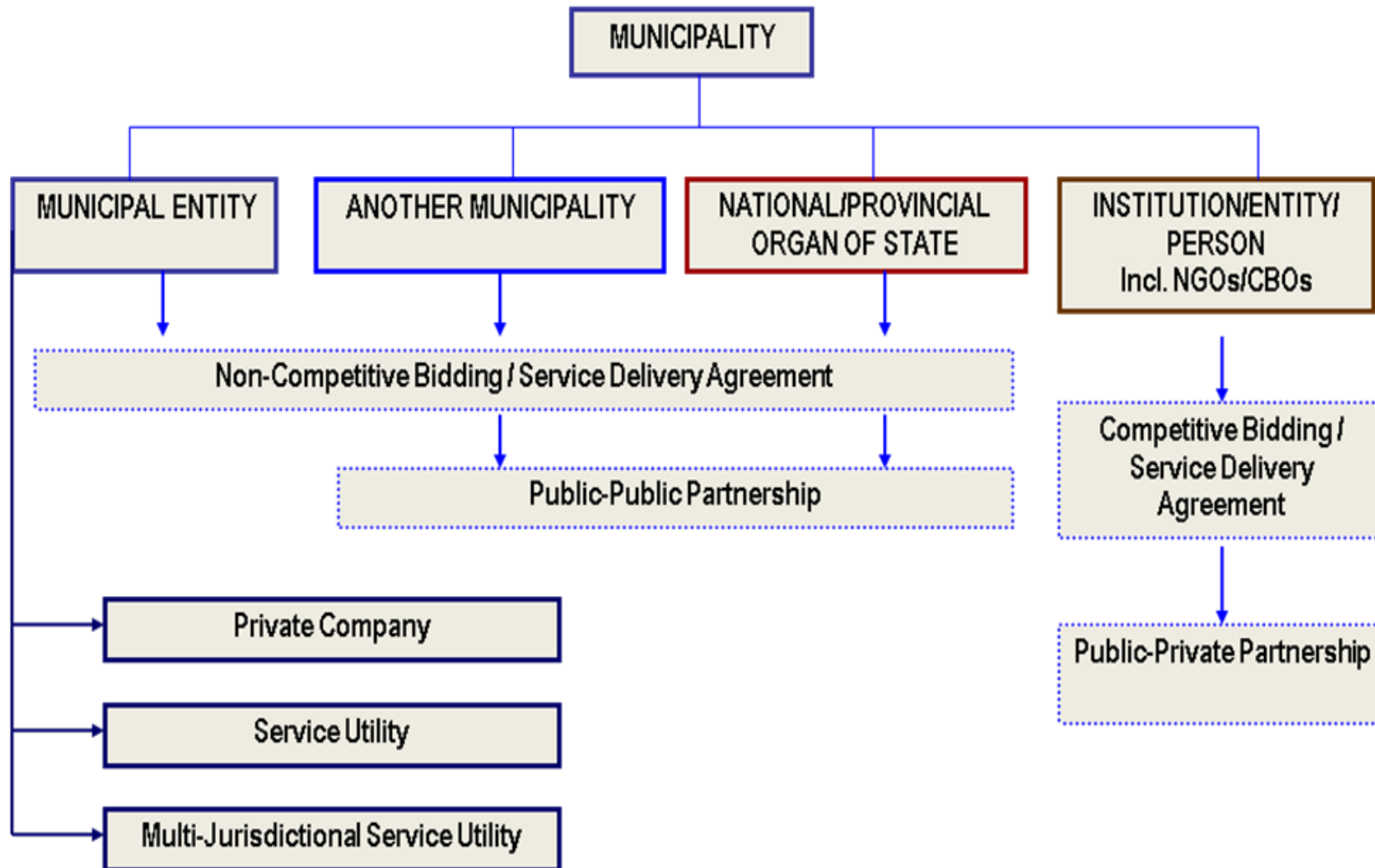


Table 42: Characteristics of External Service Delivery Mechanisms

CHARACTERISTICS OF THE SERVICE DELIVERY OPTIONS					
	MUNICIPAL ENTITY			NATIONAL / PROVINCIAL ORGAN OF STATE	OTHER INSTITUTION/ ENTITY/PERSON
	PRIVATE COMPANY	SERVICE UTILITY	MULTI-JURISDICTIONAL SERVICE UTILITY		
PARTIES	Single municipality – full ownership + interests Municipality share o/ship with other municipality, municipalities or National / Provincial organ of state Municipality/municipalities + Investor BUT ...	Single municipality	Two or more municipalities	Municipality and organ of state, e.g. ito. water it could be a Water Board in a public-public partnership	Municipality and private partner
CONTROL	Effective control in Municipality or municipalities or both not in investor Effective Control = May appoint / remove majority of Board of Directors + Control majority of voting rights at general meeting	Sole control of establishing municipality	Shared control of municipalities	Municipality exercises control through SDA, e.g. performance as well as applicable by-laws, policies	Municipality exercises control through the contract which must be in compliance with and cover all relevant legislation – national, provincial and municipal (bylaws) Type of contract determines level of control
LEGAL STATUS	Juristic person Must be established ito. and comply with Companies Act BUT not a S21 Company or a trust or any other corporate body	Juristic person Bylaw for establishment and governance Not a S21 or a trust	Juristic person /Not a S21 or a trust Legal agreement for establishment, governance, regulating shared ownership, responsibilities, duties, obligations, etc.	Each partner is a juristic person – no new juristic body	Each partner is a juristic person – no new juristic body, unless private partner establishes such with community
POWERS & FUNCTIONS	Only for powers and functions applicable to parent municipality/ties and specifically those for which this company is established	Only for powers and functions applicable to parent municipality and solely for purpose which utility is established	Only for powers and functions applicable to parent municipalities and for specific purpose for which utility is established Must indicate area of service delivery	Only for powers and functions applicable to municipality and solely for purpose which partnership is established. Organ of state must have capacity and expertise ito. specific function and be in area	Only for powers and functions applicable to municipality and solely for purpose which partnership is established. Organ of state must have capacity and expertise ito. specific function
MANAGEMENT & MUNICIPAL REPRESENTATIVITY	Board of Directors No councillor or official on Board of Directors Board appointed by Municipal Council/s from a list – widely solicited Councillor or official or both as representatives of municipality/ties on Board of Directors (3-15) Non-participating observers at meetings of Board			SDA regulates all matters Functional management vests in partner No municipal representatives on partner's board Could perhaps accommodate observer status	Contract regulates all matters No municipal representatives on partner's board
RATIONALE / REASONS	Must be to perform specific power / function Demonstrate need business principles to achieve strategic objectives (if more than one municipality – all must comply with these) Demonstrate will benefit the local community			In compliance with and as a result of S78 process	In compliance with and as a result of S78 process
CRITERIA	Value for money Needs of the poor catered for Affordability Risk transfer Impact on staff, assets, liabilities, Impact on IDP Impact on revenue, expenditure, borrowing, budget, debts, tariffs			As laid down for S78 process	As laid down for S78 process
RESOURCES/ CAPACITY	Hybrid of municipal (state) and private resources and capacity Expertise of Board of Directors	Own municipal resources and capacity Expertise of Board of Directors	Shared municipal resources and capacity Expertise of Board of Directors	Mostly of public partner since lack of municipal resources and capacity led to the partnership Government funding	Mostly of private partner since lack of municipal resources and capacity led to the partnership Private funding and channelling of government grants applicable to function

The effective external delivery mechanism is a non-shareholding, contractual PPP with the Operational Entity developing the WTE facility. In other words, the partnership between the DLM and the WTE Operational Entity does not involve shareholding but is regulated through a PPP agreement or more than one PPP type agreement depending on how the WTE project unfolds. The DLM would not dictate the shareholding of the various parties in the WTE Operational Entity apart from needing the assurance and proof that Black Economic Empowerment (“BEE”) requirements are met and the Operational Entity has the financial security, the technical expertise and the operational know-how to fulfil the project objectives.

5.1 LONG TERM SCENARIO

Depending on the measure of success achieved with the reduction of waste to landfill and effective operation of the landfill, the Municipality will need to secure additional landfill capacity, i.e. expanding the current landfill or developing a new landfill on the preferred candidate site or committing with other municipalities to share in a new regional landfill probably developed by Winelands DM or transport its waste to the nearest landfill of the City of Cape Town if such an agreement with the City is the more feasible alternative. The risk of the landfill filling up quicker than anticipated and thus the impact of these options on the viability, sustainability and affordability of the WTE project need to be taken into account.

5.2 PRIVATE INSTITUTION, ENTITY OR PERSON

Depending on the type of PPP contract, as further discussed in item 6, the municipality would make its existing fixed assets necessary for the provision of the defined municipal service or support activity available to the private service provider (but still retain full ownership of these fixed assets) and the service provider would be required to perform to agreed standards providing the capital investment, staff, expertise and other resources, e.g. movable assets, to do so.

There is often confusion in respect of when a contract constitutes a PPP and when not. In this regard it is useful to refer to the definition of a PPP as extracted from the PPP Regulations – refer to Section 1, item 3.2.3. The WTE project would be a PPP because it answers to the criteria of the PPP definition, namely:

- the external service provider would both perform a municipal services and/or function on behalf of the Municipality and in the process acquire the management and use of municipal property, for its own commercial purposes;
- the service provider would assume substantial financial, technical and operational risks; and
- the service provider would receive a benefit from performing the municipal service and/or function and from utilizing the municipal property.

From the start the conditions and terms of a PPP contract/s have to be clear since changes to the requirements can lead to a re-negotiation of the contract. However, it is not always possible to tightly package the project especially where complex technical solutions are sought. Besides the variation orders from time to time necessary to accommodate for instance expansion of the infrastructure applicable to the project, it is a legal obligation to Section 116 of the MFMA to review a PPP contract at least every three years.

A private sector service provider can bring flexibility to the approach to service provision, will normally be able to achieve higher efficiencies, can generally access operating and investment capital - if this is the requirement - and a substantial percentage of risk can be transferred to the contractor.

6 EXTERNAL SERVICE DELIVERY AGREEMENTS

The forms of contract discussed below can technically be applied to any outsourced service but some of these contracts are, within the context of the arrangements agreed to, not suitable for a PPP unless it is used for a specific short term, limited risk element of the PPP project.

6.1 SERVICE CONTRACT

This contract form is generally used to outsource specific elements of a service such as meter reading, equipment maintenance, transport, etc. It is normally a short-term contract, between 1 and 3 years, and the requirements of the contract can be very clearly defined. Minimal or no risk transfer takes place and while it does not comply to the PPP criteria it could be part of a PPP arrangement.

6.2 MANAGEMENT CONTRACT

A management contract is used when there is a need to bring management, technical and/or operational expertise into the service provision function. Such contracts are generally of 3 to 8 year duration and the contractor is responsible for providing the defined service as well for taking management responsibility for such provision. These contracts normally do not require capital investment in the fixed assets of the Municipality but, especially in respect of waste related contracts including the operation and maintenance of a landfill site, the contract would require from the contractor to provide the machinery and plant needed for optimum functionality. There are situations where the landfill site to be operated require special expertise and large capital investment in machinery and plant thus leading to a contract duration of up to 15 years in order to make it financially affordable and sustainable. Although not the general rule, a long term management contract could include various components focused on transferring financial risk to the private service provider, e.g. a capital investment component, fixed staff costs and a component making provision for the replacement of assets where the cost thereof exceed a specific amount per event or alternatively fixed maintenance costs.

The management and operation of the Wellington Landfill will include many aspects of a management contract albeit with increased risk transfer. Such a contract will be based on the CIDB format with built-in PPP clauses to ensure legal and contract management requirements are met.

6.3 LEASE CONTRACT

A municipality may wish to make a particular facility or group of facilities available to a contractor against payment of a lease fee and a contract for the supply of a particular service. Such a contract would be for a period in excess of 3 years and the contractor would be responsible for providing all the operating capital including maintenance and possible upgrade costs while the authority would remain responsible for any capital investment required for extension or rehabilitation.

As part of the WTE PPP arrangements the private service provider will acquire the right to use, control and manage the 6,5 hectares needed for the construction of the WTE facility. It could be in terms of a separate but linked lease agreement or with the other components of the WTE project addressed in a primary or secondary PPP agreement regulating the complete WTE project. The land will be leased at a nominal amount to the private party.

6.4 CONCESSION

A concession contract is normally for a period of 25 to 30 years and the private service provider is responsible for providing the specified service as well as for providing all funding required for the necessary upgrades and extensions to the system. The requirements of a concession contract would be for the private service provider to provide the predetermined service to the standards defined in the contract. The private service provider would also be responsible for obtaining the revenue from the customers supplied and taking full risk on his ability to generate the required income. This approach is the only one in which the entire financial responsibility for the funding of the upgrading of the system is placed with the private partner. By clearly defining the service levels to be achieved in each area linked to specified time frames,

an accelerated delivery programme can be achieved. There are no waste concessions in SA, only two water concessions, i.e. Mbombela and Dolphin Coast.

Except for the duration of a concession which might appear more applicable to the WTE PPP arrangement than any of the other contract types, the WTE project does not fit the criteria of a concession since the private service provider is not taking over the whole waste function but only selected components thereof.

6.5 PRIVATISATION / DIVESTITURE

National policy in South Africa does not support the privatisation of basic services. It may, however, be appropriate for non-core elements of a service where such a service can also be provided to the private sector or to other authorities. A water laboratory is an example.

7 WTE CONTRACTUAL ARRANGEMENTS

The WTE PPP contractual arrangements of 20-25 years between the DLM and the WTE Operational Entity could either take the form of one contract with different phases of implementation or an overarching primary agreement of 20-25 years with two or more secondary contracts addressing different aspects and of different durations depending on the circumstances but not involving any third parties unless it is enforced by legislation. A primary agreement could for instance stipulate all the contractual arrangements to follow and the important terms and conditions to be met by these contracts thus providing the security that the WTE Operational Entity needs to conclude its technology supply contracts while at the same time leaving space for these contracts to be finalised at a more opportune time, e.g. the CIDB based O&M contract for existing municipal services and support activities during the 1st Phase of implementation and the PPA during the 2nd phase of implementation of the WTE project, e.g. in 2014/5.

7.1 CAPITAL AND OPERATIONAL CONTRACTS

These contracts will include regulation of:

1. operation of the Paarl TS – typical management contract based on CIDB principles but, within the context of the WTE project, a longer term contract;
2. operation of the Paarl MRF – ditto as above;
3. transport of waste between Paarl TS and the Wellington Landfill – within the context of the WTE project more of a management type contract than a service contract and of a duration appropriate to the WTE operations;
4. management and operation of the Wellington Landfill – a CIDB based PPP contract with significant risk transfer and accordingly appropriate checks and balances and penalties built into the contract which contract will include any manner in which the Wellington WWW may be involved in the WTE project, e.g. sludge provision and/or leachate to be treated at the WWW;
5. financing, construction, ownership, management and operation of the WTE facility including the Wellington MRF – a Build, Own and Operate (“**BOO**”) or Build, Own, Operate and Transfer (“**BOOT**”) type contract, as negotiated, including the lease of the land needed for the WTE.

Irrespective of the contractual arrangements the DLM will need to commit its entire waste stream to the WTE operations and effectively make sure that there are no other recycling type operations that cause diversion of important waste stream categories away from the Paarl or Wellington operations.

7.2 ENERGY RELATED CONTRACTS

Energy related contracts will include:

1. the purchasing of electricity by the DLM from the WTE Operational Entity through a PPA (although Eskom has been designated as the ‘buyer’ of electricity under the REFIT programme it appears a

- municipality can with the authorisation of NERSA, enter into a PPA with an IPP (the WTE Operational Entity) as eThekweni is currently doing));
2. possibly a connection agreement between the WTE Operational Entity and the DLM unless the above agreement takes care of all connection issues;
 3. an Implementation Agreement between die IPP (WTE Operational Entity) and the DoE.

7.3 CARBON CREDIT TRADING AGREEMENTS

A carbon credit trading agreement - a CDM based agreement between the WTE Operational Entity and an international trading partner or, if so required by the realities of the carbon trading market, more than one trading partner.

7.4 PRIMARY CRITERIA AND OBJECTIVES

The various contractual arrangements have to comply with certain criteria and achieve specific objectives to be acceptable and sustainable.

The **WTE PPP agreement/s** between the DLM and the WTE Operational Entity must deliver a set of arrangements that:

- is affordable
- transfer significant technical, operational and financial risk; and
- will provide value for money

and the PPP guidelines to be followed for the Section 78(3)/120(4) feasibility study will ensure a thorough investigation and evaluation of the project to ascertain these objectives are met.

According to the **procurement and selection rules of IPP selection** a bidder's price will only be considered once it has met the other criteria which include environmental acceptability (the EIA^{ROD} must be in place), land security, commercial robustness, economic development, financial viability, technical competence and capacity. The economic development criteria relate to job creation, the involvement of historically disadvantaged individuals, community development and economic spinoffs such as the localisation of components and solutions.

Section 34 of the ERA sets out the requirements to be met by a PPA and related activities as:

- value for money;
- appropriate technical, operational and financial risk transfer to the generator;
- effective mechanisms for implementation, management, enforcement and monitoring of the PPA;
- satisfactory due diligence in respect of the buyer's representative and the proposed generator in relation to matters of their respective competence and capacity to enter into the PPA;
- the buyer (DLM) to ensure legislative compliance and ring-fencing of the revenue approved or allocated by Nersa or its successor, i.e. ISMO.

An **Implementation Agreement between die IPP (WTE Operational Entity) and the DoE** need to have aspects such as Black Economic Empowerment (BEE) and risk management hard-wired into the agreement.

A **priority for the DNA is to ascertain that the potential CDM project** will assist in achieving sustainable development goals which in SA have broadly been determined as:

- Economic – the economic impact of the project on: foreign exchange requirements; foreign direct investment; cost of energy; existing economic activity in the area; enabling appropriate technology transfer; local skills development and the replication potential of the project.
- Social – the alignment with national, provincial and local development priorities; its contribution to sectoral objectives, e.g. the NCCR Waste Management Flagship Programme; its impact on social equity and poverty alleviation including basic service delivery and access, the provision of social amenities, employment levels, etc.

- General – project acceptability, i.e. are the distribution of the project benefits must be reasonable and fair.

All **CDM projects** are required to use an approved baseline methodology for estimating carbon emission reductions or to propose a new baseline methodology if an appropriate one is not available and have such approved. The baseline refers to ‘what would have happened in the absence of the CDM project’ to enable additionality, i.e. reduction of GHG that can specifically be ascribed to the presence of the CDM project to be measured.

7.5 PROJECT IMPLEMENTATION

This Section 78(1) assessment has served the purpose of pinpointing the aspects that must still receive attention to establish the feasibility of the different WTE project options; pointed out the roles and responsibilities of the DLM and the WTE preferred bidder in order to comply with prescribed processes and criteria and set the stage for project implementation planning and contracts mapping.

The possible phasing of the WTE project is as follows with specific timeframes to be determined:

1. Inception:

- Clarification and establishment of project implementation structures, phases and procedures including contract requirements and mapping;
- Establishment of a more reliable waste dataset; confirmed suitable methodologies and completed financial modelling of the selected options by the preferred bidder;
- The DLM to complete its Section 78(3)/120(4) feasibility study of the WTE project;
- The preferred bidder to proceed with the EIA and waste licence application; and
- The preferred bidder to proceed with its other processes directed at selection as an IPP in SA and a CDM registered carbon trading partner internationally.

2. WTE Contracting

- Negotiation and conclusion of the primary contractual arrangements between the DLM and the WTE Operational Entity with clear suspensive conditions to safeguard the parties against identified establishment risks.

3. Implementation of 1st Phase

- The conclusion of secondary agreement/s, if applicable;
- The construction and commissioning of the Wellington MRF and at that stage the WTE Operational Entity possibly taking over the operation of the Paarl TS, the Paarl MRF, the waste haulage between the Paarl TS and the Wellington Landfill and the operation of the Wellington Landfill;
- The WTE Operational Entity to proceed towards finalisation of other processes directed at selection as an IPP and CDM registration

4. Implementation of 2nd Phase

- The conclusion of secondary agreement/s, if applicable, e.g. the power producer, power purchasing agreements and CDM related contractual arrangements by the WTE Operational Entity;
- The development of the suitable technologies, i.e. the SLFC and/or gasification and/or anaerobic digester tanks and/or LFG extraction and the electricity generation plant based on the net energy output.

8 PRINCIPLES APPLICABLE TO ALL EXTERNAL SERVICE DELIVERY MECHANISM AGREEMENTS

Irrespective of which form of partnership or which form of contract is adopted there are certain principles that have to be applied to external mechanisms.

8.1 LEGAL COMPLIANCE

All financial matters must be dealt with in detail. In doing so, terms and conditions must take cognisance of relevant sections of the MFMA and largely be in accordance with it. Risk transfer, i.e. stating the specific risks to be transferred, ownership of risks and mitigating factors should on a macro level be dealt with and more specifically in an annexure to the contract/s.

It is essential to make sure that an agreement meets the requirements of National Treasury. Since the PPP regulations in terms of the MFMA require provincial and national treasury approval of these types of agreements, it would be feasible to meet all criteria set by these departments to avoid time-delays.

8.2 SELECTION AND PROCUREMENT PROCESS

Most municipalities have compliant preferential procurement policies and supply chain management policies and the majority ensure that correct procurement procedures are followed. Furthermore, the way in which the bidding and adjudication processes are now structured has minimised political interference.

8.3 CONTRACT MANAGEMENT AND MONITORING

The foundation of good contract management and monitoring is a well written contract including all the stipulations previously referred to. Secondly, it requires the existence of contract monitoring skills within the Municipality and thirdly, adequate dedication of time to enable a hands-on approach to the matter.

Outsourced contracts, especially longer term PPPs often have to deal with harsh scrutiny, e.g. from the unions that might in principle be against outsourcing or politicians, the public and officials, each group based on its own set of criteria and reasons. Whichever, it is to the detriment of a private party and the Municipality if contract management and monitoring does not take place. It should always be remembered that any contract is a partnership. In the large, municipalities tend to withdraw from their obligations when the contract is signed thus abdicating their responsibilities.

A service provider must get feedback on a continuous basis for synergy to be cultivated between the needs of the Municipality, the service provider and the community. Effective monitoring comprises of technical, financial, institutional and legal components to coincide with the compliance matters in a contract. Especially legal aspects, which normally link up directly or indirectly with 100% of all contract risks, must not be neglected. More technically oriented service providers (and municipal officials) are not too concerned about being legally correct but if anything goes wrong, it is the contract which has the ultimate say.

Ideally for a contract for facilities such as these addressed herein to be properly managed it must include an asset management plan, an operational plan, a maintenance plan and a health and safety plan based on an pre-contractual audit of all facilities, equipment and protective clothing of employees. Following thereon should be a risk profile of the services/facilities. Such a profile would be an advantage whether the Municipality renders services internally or externally. In the latter case, it assists to quantify the risks included in the contract.

8.4 SUPPORT FOR POLICIES OF COUNCIL

All policies of the Municipality have to be an integral part of contract requirements.

SECTION 3: PRELIMINARY SERVICE DELIVERY MECHANISM CONCLUSION & RECOMMENDATIONS

1. CONCLUSION

Based on the contents of the Section 78(1) assessment, it can be concluded:

1. That the WTE project was aligned with national, provincial and local strategies and plans (including the IDP and IWMP of the Municipality) to minimise waste to landfill, ensuring current landfills are operated in accordance with permit requirements and reducing the carbon footprint of municipalities.
2. That the WTE project would be specifically beneficial to the Municipality given that it has the potential to maximise the already limited lifespan of its Wellington Landfill by reducing waste to landfill with more than 60%; generate an estimated 20,176MWh/annum of net energy which will be available to the Municipality through the REFIT programme; create at least 116 permanent jobs and substantially boost the recycling activities of the DLM.
3. That the Municipality did not have the current capital resources nor the human expertise, skills or capacity to establish a WTE facility based on an estimated R146m capital investment cost for the current best suited technology option; did not budget for the required plant and machinery for the WTE facility or for the more effective operation of the Wellington Landfill and thus cannot commit the required human or financial investment needed for the WTE project to succeed.
4. That the preferred bidder for the WTE facility had the necessary financial credibility, technical expertise and operational skills to finance, construct, commission, own and operate the WTE plant and also operate the existing waste treatment and disposal services of the Municipality in a PPP with the Municipality.
5. That the operation of the Wellington Landfill, the Paarl TS, the Paarl MRF and possibly also the waste haulage from the Paarl TS to the Wellington Landfill be included with the WTE project for the following reasons:
 - enabling the WTE operator to implement a combination of technologies best suited to achieve an integrated waste management solution;
 - upgrading of the operation of the landfill to ensure a maximisation of its lifespan;
 - enabling synergy in respect of waste treatment and disposal activities; and
 - establishing a one-stop contractual accountability which is easier to manage.
6. That there was sufficient uncertainty about the in/direct costs vis-a-vis benefits of the current collection of waste separated at source to further investigate the impact of this method inter alia by doing a comparative analysis with other practices, e.g. post collection separation, in similar Western Cape towns' enabling a decision to be taken on the feasibility of source separated vis-à-vis post collection separated waste before the mechanism and/or method of collection of recyclables is further considered. The feasibility of community recycling pickup points or centres should be included in this assessment.
7. That the WTE preferred bidder must complete a thorough analysis of the waste volumes, composition and calorific values to arrive at a more reliable and accurate dataset, final best suited technology decision and detailed financial modelling to proceed with the WTE project and enable the Municipality to establish the feasibility of the WTE project from its perspective.
8. That organised labour preferred deployment of the plus minus 14 affected employees rather than to see them transferred to the WTE Operational Entity. This should not be a problem but

individual employees must be allowed to decide between deployment and transfer and if the latter was chosen be assisted by the Municipality in accordance with labour legislation.

2. **RECOMMENDATIONS**

The following recommendations are made:

1. That the Municipal Manager authorise the transaction advisers to proceed with a Section 78(3)/120(4) Feasibility Study in accordance with the provisions of section 78(3)(b) of the MSA and following the prescribed procedure as provided for in the MSA, Section 120(4) of the MFMA and the PPP Regulations inclusive of the prescribed consultation processes and to submit for Council approval a Consolidated Feasibility Study Report including specific recommendations regarding the preferred WTE technologies, contractual arrangements and timeframes of the WTE project.
2. That the transaction advisers be authorised to proceed with a funding application to National Treasury including a waste tariff review; a comparative analysis of the feasibility of source separated vis-à-vis post collection separated recyclable waste including the feasibility of community recycling pickup points or centres and the transaction advisor cost for all phases of the project.
3. That the preferred bidder be instructed to immediately proceed with its processes including a waste licence application, an EIA, a full waste volume and composition assessment and a calorific analysis to have a reliable and accurate dataset as basis for the WTE project and the preferred bidder further be requested to submit a revised technology option analysis including detailed financial modelling and proposed timeframes to the Municipality.
4. That the Directorate Infrastructure and Planning establishes a Project or Process Steering Committee ("PSC") representative of all legally designated and relevant role-players, e.g. NT, PT, the DEA&DP, COGTA, Eskom, etc., which PSC would meet on a quarterly basis with its terms of reference being to observe, advise and facilitate, e.g. funding of the project and speeding up statutory authorisation processes.
5. That the Directorate Infrastructure and Planning establishes a Transaction Steering Committee ("TSC") consisting of key role-players of the Municipality, the preferred WTE bidder / WTE Operational Entity and the transaction advisers which TSC would meet on a bi-monthly basis and commence its task by agreeing on an Implementation Plan for the WTE project including an Authorisations' Map and a Contracts' Map to enable it to systematically champion the project through an updated feasibility study; the statutory approval processes (both parties responsible for its own but assisting each other where necessary); contract negotiations; contracts' conclusion; the roll-out of the project and initial contracts' monitoring and management.