



MINUTES

**CERTIFICATION OF CONFIRMATION OF
COMMITTEE MEETING MINUTES**

9 JUNE 2011

I, Cr Tony Cuccaro, hereby certify that the following minutes [pages 1 to 67] of the Meeting of **RESOURCE RECOVERY COMMITTEE** held on 9 June 2011 were confirmed at a meeting of the Committee held on 4 August 2011.

A handwritten signature in blue ink, appearing to be "Tony Cuccaro", is written over a horizontal line.

Signature

Cr Tony Cuccaro

Person presiding at the Committee Meeting held on 4 August 2011

RESOURCE RECOVERY COMMITTEE

MINUTES

9 June 2011

(REF: COMMITTEES-11994)

A meeting of the Resource Recovery Committee was held at the EMRC Administration Office, 1st Floor, 226 Great Eastern Highway, BELMONT WA 6104 on **Thursday, 9 June 2011**. The meeting commenced at **5.00pm**.

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1 DECLARATION OF OPENING AND ANNOUNCEMENT OF VISITORS

The Acting Chairman opened the meeting at 5.00pm.

2 ATTENDANCE, APOLOGIES AND LEAVE OF ABSENCE PREVIOUSLY APPROVED

Committee Members

Cr Frank Lindsey (Acting Chairman)	EMRC Member	Shire of Kalamunda
Cr Gerry Pule	EMRC Member	Town of Bassendean
Cr Alan Radford	EMRC Member	City of Bayswater
Cr Glenys Godfrey	EMRC Member	City of Belmont
Cr David Färdig	EMRC Member	City of Swan
Mr Doug Pearson	Director Technical Services	City of Bayswater
Mr Ric Lutey	Director Technical Services	City of Belmont
Mr Shane Purdy	Director Infrastructure Services	Shire of Mundaring
Mr Jim Coten	Executive Manager Operations	City of Swan
Mr Peter Schneider	Chief Executive Officer	EMRC

Apologies

Cr Tony Cuccaro (Chairman)	EMRC Member	Shire of Mundaring
Mr Simon Stewert-Dawkins	Director Operational Services	Town of Bassendean
Mr Mahesh Singh	Director Engineering Services	Shire of Kalamunda

Deputy Committee Members - Observers

Cr Graham Pittaway	EMRC Member	City of Bayswater
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EMRC Officers

Mr Stephen Fitzpatrick	Manager Project Development
Mr Brian Jones	Director Waste Services
Mr Hua Jer Liew	Director Corporate Services
Ms Mary-Ann Winnett	Personal Assistant to Director Corporate Services

Guests

Mr John King	Cardno
Ms Melanie Cave	Freehills

3 DISCLOSURE OF INTERESTS

Nil

4 ANNOUNCEMENT BY THE CHAIRMAN OR PERSON PRESIDING WITHOUT DISCUSSION

Nil



5 CONFIRMATION OF MINUTES OF PREVIOUS MEETINGS

5.1 MINUTES OF THE RESOURCE RECOVERY COMMITTEE MEETING HELD ON 7 APRIL 2011

That the Minutes of the Resource Recovery Committee meeting held on 7 April 2011, which have been distributed, be confirmed.

RRC RESOLUTION(S)

MOVED CR GODFREY SECONDED CR PULE

THAT THE MINUTES OF THE RESOURCE RECOVERY COMMITTEE MEETING HELD ON 7 APRIL 2011, WHICH HAVE BEEN DISTRIBUTED, BE CONFIRMED.

CARRIED UNANIMOUSLY

6 PRESENTATIONS

6.1 RESOURCE RECOVERY FACILITY – CONTRACT OWNERSHIP MODELS

This item was dealt with later in the meeting in conjunction with Item 9.3 Resource Recovery Facility – Contract Ownership Models

7 ANNOUNCEMENT OF CONFIDENTIAL MATTERS FOR WHICH THE MEETING MAY BE CLOSED TO THE PUBLIC

NOTE: Section 5.23(2) of the Local Government Act 1995, details a number of matters upon which Council may discuss and make decisions without members of the public being present. These matters include: matters affecting employees; personal affairs of any person; contractual matters; legal advice; commercial-in-confidence matters; security matters; among others.

The following report item is covered in section 10 of this agenda.

7.1 RESOURCE RECOVERY FACILITY - ACCEPTABLE TENDERERS

8 BUSINESS NOT DEALT WITH FROM A PREVIOUS MEETING

Nil



9 REPORTS OF OFFICERS

9.1 PROGRESS REPORT ON RESOURCE RECOVERY INITIATIVES

REFERENCE: COMMITTEES-12153

PURPOSE OF REPORT

The purpose of this report is to keep Council informed of continuing progress on resource recovery processing initiatives.

KEY ISSUES AND RECOMMENDATION(S)

- The EMRC and the City of Swan have supplied Ansac Pty Ltd of Bunbury with a 30 tonne batch of refuse derived fuel for a gasification trial at their Bunbury pilot plant.
- Murdoch University has commenced a pilot scale trial of anaerobic digestion with horse manure waste from the City of Belmont's Ascot precinct.

Recommendation(s)

That the report be received.

SOURCE OF REPORT

Manager Project Development

BACKGROUND

At the Council meeting of 24 August 2000, Council adopted the following resolutions:

- "1. THAT THE EMRC UNDERTAKE A STUDY TO DETERMINE THE RANGE OF COMMERCIAL AND FINANCING OPTIONS AVAILABLE TO THE EMRC FOR ITS INVOLVEMENT IN THE SECONDARY WASTE TREATMENT FACILITY.*
- 2. THAT THE EMRC REQUEST THE OPPORTUNITY FOR EACH MEMBER COUNCIL TO RECEIVE A PRESENTATION REGARDING THE TECHNOLOGIES, COSTS, NEED FOR STAGED COMMITMENTS ETC FOR THE INTRODUCTION OF A SECONDARY WASTE TREATMENT FACILITY.*
- 3. THAT AN OVERSEAS STUDY TOUR OF OPERATING SECONDARY WASTE TREATMENT FACILITIES BY OFFICERS AND COUNCILLORS OF THE EMRC, TO BE DETERMINED AT A LATER DATE, FOLLOWING A DESKTOP STUDY OF SUITABLE LOCATIONS AND PREFERABLY IN CONJUNCTION WITH AN INTERNATIONAL WASTE MANAGEMENT CONFERENCE.*
- 4. THAT SUBJECT TO THE PROVISION OF A COPY OF THE REPORT SECONDARY TREATMENT FEASIBILITY STUDY, AS COMMISSIONED BY MINDARIE REGIONAL COUNCIL, A REPORT ON ITS CONTENT AND APPLICATION TO THE EMRC'S PROPOSED ACTIVITIES BE PROVIDED.*
- 5. THAT A CONSULTANT BE ENGAGED TO PROCEED WITH THE RED HILL DEVELOPMENT 'MASTER PLAN' INCLUDING A REVIEW AND RECOMMENDATION FOR AN APPROPRIATE SITE FOR A SECONDARY WASTE PROCESSING FACILITY AND THE PROVISION OF A PROGRAM TO INTRODUCE SECONDARY WASTE TREATMENT.*
- 6. THAT A PROGRAMME BE DEVELOPED FOR THE COMMUNITY CONSULTATION NECESSARY FOR THE INTRODUCTION OF A SECONDARY WASTE TREATMENT FACILITY FOR THE EMRC.*



Item 9.1 continued

7. *THAT A DETAILED REPORT BE PREPARED ON THE CONTENT AND SIGNIFICANCE TO THE EMRC OF THE "REPORT OF THE ALTERNATIVE WASTE MANAGEMENT TECHNOLOGIES AND PRACTICES INQUIRY" FROM NEW SOUTH WALES.*
8. *THAT A SECONDARY WASTE PROCESSING RESERVE BE ESTABLISHED AND STAFF PROVIDE A RECOMMENDATION OF THE INITIAL AMOUNT TO BE TRANSFERRED TO THAT RESERVE TAKING INTO ACCOUNT THE ADDITIONAL TIPPING FEES IMPOSED EFFECTIVE FROM 1 JULY 1999.*
9. *THAT THE EMRC START PUBLIC EDUCATION AND CONSULTATION FOR ALL MEMBER COUNCIL RESIDENTS ON PLANS FOR SECONDARY WASTE TREATMENT AS SOON AS PRACTICABLE."*

The nine resolutions from the 24 August 2000 Council meeting have been reported on in all subsequent meetings of the SSWTC/RRC and are complete.

At the Council meeting of 26 April 2001, Council resolved the following:

"THAT THE REPORT BE RECEIVED AND THE ATTACHMENT BE UPDATED FOR EACH MEETING OF THE STRATEGIC AND SECONDARY WASTE TREATMENT COMMITTEE."

At the Council meeting of 20 May 2004, Council resolved the following:

"THAT A NUMBER OF INTERESTED EMRC COUNCILLORS WITH EMRC OFFICERS ATTEND GLOBAL RENEWABLES LIMITED, EASTERN CREEK, NSW FACILITY WITHIN SIX (6) MONTHS OF THE FACILITY OPENING."

Report item 9.3 of the SSWTC agenda for 8 June 2006 reported on the EMRC visit to GRL Eastern Creek and other resource recovery facilities in the eastern states, satisfying this resolution.

Council resolved at its meeting of 31 July 2008 to attend the second international conference on Energy from Biomass and Waste in Italy and to visit waste treatment plants in preparation for the EOI process. This visit was reported to RRC at its 12 February 2009 meeting.

Other Resource Recovery Facilities operating in Australia including the EarthPower, Camelia facility, the Rethmann Integrated Waste Management Facility at Port Macquarie and the Cairns Bedminster facility now owned and operated by SITA CEC Environmental Solutions were reported in agenda item 10.1 of the 14 June 2007 RRC meeting.

A pilot scale pyrolysis technology plant has been developed by Best Energies in Gosford, NSW and was reported in the RRC July 2007 agenda (report item 9.3).

A proposed waste to ethanol project by a consortium of Holden, the Victorian Government, Caltex, Veolia, Coskata and Mitsui was reported in the RRC 8 July 2010 agenda (item 9.1).

REPORT

Gasification trials at Ansac, Bunbury

The gasification trial at Ansac's Bunbury plant using 30 tonnes of refuse derived fuel (RDF) prepared by the City of Swan has recommenced after modifications to the pilot plant. A test run for a UK client is scheduled for the week of 13 June 2011 following which City of Swan and EMRC representatives will be invited to inspect the plant.

Ascot Horse Manure Project

Murdoch University has commenced a pilot scale trial of anaerobic digestion with horse manure waste from the City of Belmont's Ascot precinct. This is being funded by the City of Belmont and is of interest to Perth Racing and the EMRC.



Item 9.1 continued

The City of Belmont has also continued discussions with UWA regarding participation in a research trial being conducted by UWA Centre for Energy - An Innovative Two-Phase Anaerobic Process for Biogas Production from Green Waste and Animal Droppings.

Progress reports on resource recovery initiatives being undertaken elsewhere in Australia are attached (Attachment 1).

STRATEGIC/POLICY IMPLICATIONS

Key Result Area 1 – Environmental Sustainability

1.3 To provide resource recovery and recycling solutions in partnership with member Councils

MEMBER COUNCIL IMPLICATIONS

Member Council	Implication Details
Town of Bassendean	} Nil direct implication for member Councils
City of Bayswater	
City of Belmont	
Shire of Kalamunda	
Shire of Mundaring	
City of Swan	

FINANCIAL IMPLICATIONS

All Resource Recovery Project activities are accounted for in the annual budget approved by Council.

SUSTAINABILITY IMPLICATIONS

The Resource Recovery Project is aimed at reducing greenhouse gas emissions from the EMRC's waste disposal operations and State programmes for reduction of waste to landfill.

ATTACHMENTS

Progress on Resource Recovery Initiatives in Australia as at 26 May 2011 (Ref: Committees-12153)

VOTING REQUIREMENT

Simple Majority

RECOMMENDATION(S)

That the report be received.



Item 9.1 continued

Discussion ensued

Cr Godfrey referred to page 3 of the Agenda – Gasification Trials at Ansac, Bunbury and asked when the City of Swan and EMRC representatives would be visiting the Bunbury plant. The Manager Project Development advised that it was planned for the week commencing 13 June 2011 but he was waiting for confirmation from Ansac as they needed to complete a performance trial on refuse derived fuel before the visit.

RRC RECOMMENDATION(S)

MOVED CR FÄRDIG

SECONDED CR PULE

That the report be received.

CARRIED UNANIMOUSLY



Item 9.1 continued

Attachment 1 to RRC 9 June 2011 Item 9.1

PROGRESS REPORTS ON RESOURCE RECOVERY INITIATIVES IN AUSTRALIA AS AT 26 May 2011

Southern Metropolitan Regional Council (SMRC), Regional Resource Recovery Centre (RRRC) Project, Canning Vale

Technology: Bedminster aerobic composting. Contract model: D&C. Bin system: 2 bin system.

No further progress to report.

Rivers Regional Council, Resource Recovery Project

Technology: Undecided - aerobic composting or anaerobic digestion. Contract model: Most likely BOO. Bin system: 2 bin system.

No further progress to report.

Atlas Waste Treatment Facility, Mirrabooka

Technology: Dirty MRF and windrow aerobic composting. Contract model: BOO (for City of Stirling). Bin system: 2 bin system.

No further progress to report.

Mindarie Regional Council (MRC), Resource Recovery Project

Technology: Conporec aerobic composting. Contract model: BOO (SITA is the operator). Bin system: 2 bin system.

No further progress to report.

Ti Tree Bioenergy Project, Queensland

Technology: Landfill with methane extraction. Contract model: Privately owned. Bin system: N/A.

No further progress to report.

Veolia Woodlawn Bioreactor Project, NSW

Technology: Landfill with methane extraction. Contract model: Privately owned. Bin system: 2 bin system.

No further progress to report.

Emergent Capital, Eastern Creek, NSW

Technology: Anaerobic digestion (UR-3R process). Contract model: D&C. Bin system: 2 bin system.

The facility is believed to be operating only as an aerobic composting facility.

AnaeCo, Shenton Park

Technology: Anaerobic digestion (DiCom process). Contract model: BOO (for WMRC). Bin system: 2 bin system.

No further progress to report.

Coffs Harbour City Council, Alternative Waste Treatment (AWT) Plant

Technology: Aerobic composting. Contract model: BOO. Bin system: 3 bin system.

No further progress to report.

WSN Environmental Solutions, South Sydney, AWT Facility

Technology: Anaerobic digestion (ArrowBio process). Contract model: BOO. Bin system: 3 bin system.

SITA are now the owners of WSN's operations.



9.2 RESOURCE RECOVERY PROJECT UPDATE

REFERENCE: COMMITTEES-12156

PURPOSE OF REPORT

To update Council on the progress of the Resource Recovery Facility (RRF) project.

KEY ISSUES AND RECOMMENDATION(S)

- The project team has amended and resubmitted the draft Environmental Scoping Document (ESD) after discussions with the Office of the EPA.
- Air quality baseline monitoring at Red Hill Waste Management Facility is continuing as part of the preparation for the Public Environmental Report (PER).
- Gathering of emissions data from acceptable tenderers for the PER modelling is continuing.
- The draft Community Partnership Agreement (CPA) was made available for public comment from 28 March until 16 May 2011 and feedback was received from 17 community members.
- The Community Task Force (CTF) has continued to meet and consider draft tender criteria as well as preliminary feedback on the CPA.
- Analysis of member Council financial statements for 2010 is underway in conjunction with the WA Treasury Corporation to update the analysis of member Council ability to guarantee a loan for the RRF.
- Planning is underway for a community presentation on anaerobic digestion technology.

Recommendation(s)

That the report be received.

SOURCE OF REPORT

Manager Project Development

BACKGROUND

On 30 April 2009, Council resolved to proceed with the Expression of Interest process.

At the 27 August 2009 meeting of Council it was resolved:

- "1. THE FOLLOWING RESPONDENTS TO THE EXPRESSION OF INTEREST ARE LISTED AS ACCEPTABLE TENDERERS:
 - A. ENERGOS AS;
 - B. EVERGREEN ENERGY CORPORATION PTY LTD;
 - C. GRD MINPROC LIMITED;
 - D. MOLTONI ENERGY PTY LTD;
 - E. SITA ENVIRONMENTAL SOLUTIONS;
 - F. TRANSPACIFIC CLEANAWAY LIMITED; AND
 - G. WSN ENVIRONMENTAL SOLUTIONS.
2. THE FOLLOWING RESPONDENTS TO THE EXPRESSION OF INTEREST ARE NOT LISTED AS ACCEPTABLE TENDERERS:
 - A. ANAECO LIMITED; AND
 - B. THIESS SERVICES PTY LTD.



Item 9.2 continued

3. *THE RESPONDENTS TO EXPRESSION OF INTEREST 2009-10 BE ADVISED OF THE OUTCOME OF THE ASSESSMENT.*
4. *THE ATTACHMENT REMAINS CONFIDENTIAL AND BE CERTIFIED BY THE ACTING CHIEF EXECUTIVE OFFICER AND THE EMRC CHAIRMAN.*
5. *THE TENDER EVALUATION COMMITTEE BE ACKNOWLEDGED FOR THE SIGNIFICANT EFFORT PUT INTO EVALUATING THE EOI SUBMISSIONS."*

On 24 September 2009, Council resolved that:

- "1. *THE FOLLOWING PRELIMINARY RECOMMENDATIONS OF THE RESOURCE RECOVERY COMMITTEE FORM THE BASIS OF CONSULTATION BETWEEN THE EMRC AND THE MEMBER COUNCILS AND THE COMMUNITY WITH THE INTENTION OF REPORTING BACK TO COUNCIL IN APPROXIMATELY MARCH 2010 WITH A FINAL RECOMMENDATION.*
 - A) *RED HILL WASTE MANAGEMENT FACILITY IS THE PREFERRED SITE FOR THE RRF BASED ON ENVIRONMENTAL, ECONOMIC AND PLANNING CONSIDERATIONS, COMMUNITY RESEARCH AND THE POTENTIAL VALUE OF THE EMRC HAZELMERE SITE AS A RESOURCE RECOVERY PARK.*
 - B) *THE DESIGN & CONSTRUCT CONTRACT OWNERSHIP MODEL IS PREFERRED TO A BUILD OWN OPERATE CONTRACT MODEL.*
 - C) *THE RRF TECHNOLOGY OPTIONS INCLUDING ANAEROBIC DIGESTION, GASIFICATION AND PYROLYSIS ARE RANKED HIGHER THAN COMBUSTION AND PLASMA AT THIS STAGE BUT MORE INFORMATION IS REQUIRED BEFORE A FINAL PREFERENCE CAN BE DETERMINED.*
 - D) *A THIRD BIN FOR HOUSEHOLD ORGANIC WASTE COLLECTION IS CONSIDERED IN CONJUNCTION WITH ANAEROBIC DIGESTION TECHNOLOGY."*

Further, on 4 December 2009, Council resolved that:

- "1. *COUNCIL APPROVE A VISIT TO EASTERN STATES AND OVERSEAS RESOURCE RECOVERY REFERENCE FACILITIES TO BE UNDERTAKEN BY THE CHAIRMAN, RESOURCE RECOVERY COMMITTEE, MR JOHN KING, PROJECT DIRECTOR FOR CARDNO LIMITED AND THE MANAGER PROJECT DEVELOPMENT.*
2. *INFORMATION GAINED FROM THE VISIT BE REPORTED TO THE RRC AND COUNCIL IN EARLY 2010 AS PART OF THE FINAL RECOMMENDATION ON THE PREFERRED RESOURCE RECOVERY FACILITY OPTIONS."*

On 22 April 2010, Council resolved in relation to the reference facility visits that:

- "1. *THE REPORT BE RECEIVED.*
2. *INFORMATION GAINED FROM THE RESOURCE RECOVERY FACILITY VISITS BE APPLIED TO THE ANALYSIS OF THE PROJECT OPTIONS ON TECHNOLOGY, CONTRACT MODEL AND BIN COLLECTION SYSTEM.*
3. *THAT THE ATTACHMENT TO THIS REPORT REMAIN CONFIDENTIAL AND BE CERTIFIED BY THE CHIEF EXECUTIVE OFFICER AND CHAIRMAN."*

On 20 May 2010, Council resolved that:

- "1. *THE FOLLOWING OPTIONS ARE CONFIRMED AS THE PREFERRED OPTIONS FOR THE RESOURCE RECOVERY FACILITY:*
 - A) *RED HILL WASTE MANAGEMENT FACILITY IS THE PREFERRED SITE FOR THE RRF.*
 - B) *THE DESIGN & CONSTRUCT CONTRACT OWNERSHIP MODEL IS PREFERRED TO A BUILD OWN OPERATE CONTRACT MODEL AT THIS STAGE OF THE PROJECT.*



Item 9.2 continued

- C) THE RRF TECHNOLOGY OPTIONS INCLUDE ANAEROBIC DIGESTION, GASIFICATION, PYROLYSIS AND COMBUSTION. PLASMA TECHNOLOGY WILL ONLY BE CONSIDERED IF IT IS AN INTEGRAL PART OF ONE OF THESE TECHNOLOGIES.
- D) A THIRD BIN FOR HOUSEHOLD ORGANIC WASTE COLLECTION BE CONSIDERED IN CONJUNCTION WITH ANAEROBIC DIGESTION TECHNOLOGY, OTHERWISE A TWO BIN SYSTEM IS RECOMMENDED FOR THE THERMAL TECHNOLOGY OPTIONS.
2. COUNCIL PROCEEDS WITH THE ENVIRONMENTAL AND PLANNING APPROVALS TASK FOR THE RESOURCE RECOVERY PROJECT BASED ON THE PREFERRED SITE AND TECHNOLOGY OPTIONS.”

On 21 October 2010, Council resolved to amend the Resource Recovery budget to allow for the predicted cost of baseline environmental monitoring and additional consultant costs as follows:

“THAT THE BUDGET FOR SEEK ENVIRONMENTAL APPROVALS (TASK 15) IN THE ANNUAL BUDGET UNDER RESOURCE RECOVERY BE INCREASED FROM \$220,000 TO \$525,000 AND THAT THIS INCREASE BE FUNDED FROM THE SECONDARY WASTE RESERVE.”

By way of explanation, the two contract ownership models being considered for the RRF are as follows:

Build Own Operate

Under a Build Own Operate (BOO) contract delivery model, the Contractor will be required to build, finance, own and operate the facility for a fixed period of time (the economical life of the facility and anticipated to be for 20 years). Under this contract model, some of the project risks, and in particular, the risks associated with the design, construction and performance of the RRF, are transferred to the Contractor.

Design and Construct

Under a Design and Construct (D&C) contract delivery model, the Contractor will design and construct a facility that conforms to agreed standards and performance requirements. If the D&C model was adopted by the EMRC, the Contractor will also be required to operate the facility for a minimum of 12 months and up to two years after the completion of wet commissioning. Under this contract model, the operational and ownership risks would be assumed by the EMRC, particularly following transfer of operational responsibilities to the EMRC and expiry of warranties and defects liability periods. The EMRC may operate the facility using its own staff or enter into a separate contract for the operation of the facility under this D&C contract delivery model.

Acceptable Tenderers and Technologies

Acceptable Tenderers as at 20 May 2010	Technology Offered at EOI Stage
Energos AS	Gasification
Evergreen Energy Corporation Pty Ltd	Anaerobic Digestion
Amec Minproc Limited	Anaerobic Digestion and Combustion
Moltoni Energy Pty Ltd	Combustion
SITA Environmental Solutions	Anaerobic Digestion and Combustion
Transpacific Cleanaway Limited	Anaerobic Digestion
WSN Environmental Solutions	Anaerobic Digestion

REPORT

Environmental Scoping Document (ESD)

Following a meeting with an EPA officer on 2 May 2011, the ESD was amended and resubmitted on 17 May 2011. The EPA is expected to sign off the content of the ESD in June 2011. Meanwhile Cardno are progressing with the drafting of the Public Environmental Report (PER).



Item 9.2 continued

Environmental Monitoring for the PER

A draft report on the background noise monitoring at Red Hill Waste Management Facility has been received from consultants Lloyd George Acoustics which indicated potential noise regulation non-compliances due to night-time noise emissions. This has been attributed to noise emissions from the Landfill Gas and Power (LGP) power station. The EMRC is liaising with LGP over this. Consultants Lloyd George Acoustics will complete noise modelling for the various technology options when noise data has been received from the Acceptable Tenderers.

A draft report on the baseline odour monitoring at Red Hill Waste Management Facility has been received from SLR Consulting Australia showing the results of odour emissions analysis by source including the LGP power station. This report highlighted that the LGP power station engine exhausts were the highest odour source, followed by the fresh green waste windrows. This information will be entered into the dispersion model to provide baseline odour contours and when the receipt of emissions data from the Acceptable Tenderers is complete, modelling of predicted emissions from the technology options will be completed.

Synergetics Environmental Engineering is conducting air quality monitoring and modelling at Red Hill Waste Management Facility. The monitoring programme commenced at the beginning of April 2011 for two months and has been extended to the end of July to gain additional data during winter months.

Emissions data on noise, odour and air quality from the acceptable tenderers for their respective technology options outlined in their Expressions of Interest has been received during May 2011 with some information still to be received. When fully received, the emissions data will be used during the modelling of predicted emissions from the different technology options to establish noise and air quality levels with and without the RRF.

Community Engagement

The CTF met on 3 May 2011 to consider preliminary feedback on the draft CPA and to consider the draft tender evaluation criteria (refer attachment 1). The draft CPA was issued for community comment for a 7 week period from 28 March 2011 to 16 May 2011 during which time 17 responses were received. Availability of the draft CPA was advertised in community newspapers, on the EMRC website, via a letterbox drop around Red Hill and the Gidgegannup Post Office and via the electronic database for the project. These 17 responses are being assessed by the EMRC and will be considered at the next meeting of the CTF. Once finalised, a report will be prepared for Council endorsement and inclusion of the CPA in the tender documentation.

The next meeting of the CTF is planned for 14 June 2011 to consider community feedback on the draft CPA and progress the draft tender evaluation criteria.

Member Council Loan Guarantee Analysis

Analysis of member Council financial statements for 2010 is underway in conjunction with the WA Treasury Corporation (WATC) to update the analysis of member Council capacity to guarantee a loan for the RRF. Previously this was done using the 2008/2009 financial statements, results of which were advised to the member Councils in the 2010 round of briefings. Discussions have been held with WATC on the current methodology of loans and credit assessment and this is being taken into account in the analysis by EMRC officers.

Community Forum on Anaerobic Digestion

Planning has been underway for a presentation on anaerobic digestion technology by a visiting overseas consultant. Mr Gerald Tetchner of Enertech in the UK will be in WA doing consulting work with Ansac in Bunbury during June 2011 and preliminary agreement has been reached to make Mr Tetchner available for a presentation to councillors and officers and to the community on anaerobic digestion technology, similar to the presentations held in April 2010 on waste to energy technologies. (Refer to attachment 2 for a copy of Mr Tetchner's Curriculum Vitae).

The likely dates for the presentations are on 23 June 2011 (for the Council presentation) and 24 June 2011 for the community presentation. Invitations will be issued as soon as this is confirmed.



Item 9.2 continued

STRATEGIC/POLICY IMPLICATIONS

Key Result Area 1 – Environmental Sustainability

- 1.3 To provide resource recovery and recycling solutions in partnership with member Councils

FINANCIAL IMPLICATIONS

The 2010/2011 budget for the Resource Recovery Project is \$1,272,030. All costs covered within this report are within budget parameters.

SUSTAINABILITY IMPLICATIONS

The Resource Recovery Facility and/or Resource Recovery Park will contribute toward minimising the environmental impact of waste by facilitating the sustainable use and development of resources.

MEMBER COUNCIL IMPLICATIONS

Member Council	Implication Details
Town of Bassendean	} Nil
City of Bayswater	
City of Belmont	
Shire of Kalamunda	
Shire of Mundaring	
City of Swan	

ATTACHMENT(S)

1. Unconfirmed minutes of Community Task Force Meeting of 3 May 2011 (Ref: Committees-12387)
2. Mr Gerald Tetchner's Curriculum Vitae (Ref: Committees-12386)

VOTING REQUIREMENT

Simple Majority

RECOMMENDATION(S)

That the report be received.

Discussion ensued

Cr Godfrey sought clarification on what the analysis of member Council financial statements would entail and what benefit would be gained by the analysis. The Manager Project Development advised that the EMRC had been using the published information from the member Councils, in particular the 2009/2010 financial statements and 2010/2011 budgets. The analysis is based on the WA Treasury Corporation's guidelines with a view to analysing the member Councils' ability to borrow and to repay debt. This would assess their ability to guarantee a loan to the EMRC for the construction of the Resource Recovery Facility.



Item 9.2 continued

The Manager Project Development advised that Mr Gerald Tetchner of Enertech Engineering Consultants would give a presentation on anaerobic digestion technologies at the Ordinary Meeting of Council being held on 23 June 2011 and at a forum being held at EMRC on 24 June 2011. Mr Tetchner's availability was dependent on the refuse derived fuel performance trial at Ansac's Bunbury plant.

In response to Cr Godfrey's query on whether the extension of the air quality monitoring and modelling at the Red Hill Waste Management Facility had been an additional cost, the Manager Project Development confirmed that there had been a variation to the contract for the additional monitoring and the additional cost was \$77,000 ex GST.

RRC RECOMMENDATION(S)

MOVED CR FÄRDIG

SECONDED CR LINDSEY

That the report be received.

CARRIED UNANIMOUSLY



Attendee		Attendee		Attendee	
Martin Chape	✓	Peter Jensen	✓	Stephen Fitzpatrick	✓
Jan Foster-Hawkings	✓	Myles Harmer	✓	Prapti Mehta	x
Noel Hales	✓	Peter Pearson	✓	Joel Levin	✓
Max Jamieson	✓	Noelene Wigmore	✓	Other:	
Other:		Other:		Other:	
Present ✓ Apology = x Observer/Presenter = O					

Meeting Opened: 6:35pm

Meeting Chair: Joel Levin

Item	Issue/Topic	Discussion
1.	Previous Minutes	Past action items were reviewed. All Items completed.
2.	Future Meetings	The date for the July meeting was set for July 12 th It was also noted that there are only three more meetings of the CTF scheduled.
Action/Resolution 1.		Include succession planning into the next agenda Who 1 Joel

<p>3. EMRC Update</p>	<p>Stephen Fitzpatrick provide an overview of the various monitoring activities underway on and around the Red Hill site. These activities are designed to provide the EMRC with a benchmark for Air, Noise, Odour levels. These levels will be provided to any prospective Tenderers to model the potential impact of their proposed facility.</p> <p>Three forms of air quality monitoring has been occurring on and around the Red Hill site (neighbouring residence have given permission for monitoring stations to be placed on their property).</p> <ol style="list-style-type: none"> 1) Huts – comprehensive monitoring station for SO₂, NO_x, CO and particulates. 2) Passive Stations – testing for organic compounds (such as aldehydes and ketones, PAH's) 3) High Volume station – that capture air samples over a 24hr period <p>While cost is a significant factor, there was some discussion about ways to maximise the duration of the monitoring. Eg: retain the passive stations for longer if the 'huts' are booked to go elsewhere.</p> <p>A Weather station is now in place at Red Hill that will provide accurate data on the prevailing winds and weather conditions to more accurately respond to any complaints.</p> <p>Odour surveys and noise surveys have been completed. The power station was identified as a significant source of noise (especially in the evenings). EMRC will approach the company about this.</p> <p>The modelling for noise, air and odour is in progress,</p> <p>The number of tenderers has decreased from seven to six, due to an amalgamation of two companies.</p> <p>EPA has provided feedback in the environmental scoping documents. Some amendment will be made and resubmitted to EPA in June. This will then give the EMRC a clearer timeline for the PER (community comment period) process.</p>
<p>Action/Resolution 2.</p>	<p>Look at the timing of the PER to enable CTF members to access the document in line with the CTF meeting schedule. CTF members to have the document two weeks prior to the meeting</p> <p style="text-align: right;">Who 2 Stephen</p>
<p>Action/Resolution 3.</p>	<p>Next round of community feedback to be collated/ themed for the CTF to make discussion more efficient.</p> <p style="text-align: right;">Who 3 EMRC</p>
<p>4. Draft CPA Consultation feedback</p>	<p>There are still two weeks to run with the comment period and there have been 9 responses to date.</p> <p>There has been some feedback that the PDF feedback form made it difficult for people to provide a response. Overall the feedback for the CPA was positive and CTF members identified areas and suggestion from the feedback.</p> <p>These suggestions would be revisiting once all comments are in and reviewed at the next meeting to finalise the CPA.</p>
<p>Action/Resolution 4.</p>	<p>Create a online forum equivalent for the PDF form</p> <p style="text-align: right;">Who 4 Joel</p>
<p>Action/Resolution 5.</p>	<p>Circulate the link with an acknowledgment of the issue and a reminder that there is two weeks to go. Place link on CTF website</p> <p style="text-align: right;">Who 5 Stephen</p>
<p>Action/Resolution 6.</p>	<p>Follow up with CPA feedback where clarification is required and thank the contributors.</p> <p style="text-align: right;">Who 6 Stephen</p>

<p>5. TEC Drafting</p>	<p>The final task of the CTF is to input into the development of the Draft Tender Criteria (TEC). These criteria would be used by the EMRC to shape the Tender application. The CPA will also form part of the Tender Evaluation process</p> <p>The CTF members reviewed past drafts of the CPA to identified the elements that would be best suited for inclusion in the TEC.</p> <p>le: Looking for elements that were removed from the CPA, that CTF members felt where time limited to the tender process only and therefore not required for the CPA, however still relevant for the TEC.</p> <p>The focus for the CTF was to 'start' the process of refinement and not get into drafting until the CPA is finalised.</p>
<p>Action/Resolution 7.</p>	<p>CTF members to review past drafts and raw noted to contribute other ideas for inclusion in the TEC</p>
<p>Who 7 ALL</p>	

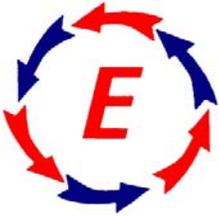
<p>6. Meeting Closed</p>	<p>8:05pm</p>	<p>7. Next meeting</p>	<p>June 14th 2011</p>
---------------------------------	---------------	-------------------------------	----------------------------------

These minutes have been ratified by ALL members of the CTF as a true and accurate record of the meeting

Signed on behalf of CTF Members: **Joel Levin (Independent Facilitator)** **Date: 5/05/2011**

ACTION LIST

Action/Resolution 1.	Include succession planning into the next agenda	Who 1	Joel
Action/Resolution 2.	Look at the timing of the PER to enable CTF members to access the document in line with the CTF meeting schedule. CTF members ot have the document two weeks prior to the meeting	Who 2	Stephen
Action/Resolution 3.	Next round of community feedback to be collated/ themed for the CTF to make discussion more efficient.	Who 3	EMRC
Action/Resolution 4.	Create a online forum equivalent for the PDF form	Who 4	Joel
Action/Resolution 5.	Circulate the link with an acknowledgment of the issue and a reminder that there is two weeks to go. Place link on CTF website	Who 5	Stephen
Action/Resolution 6.	Follow up with CPA feedback where clarification is required and thank the contributors.	Who 6	Stephen
Action/Resolution 7.	CTF members to review past drafts and raw noted to contribute other ideas for inclusion in the TEC	Who 7	ALL



Enertech (1983) Ltd.

ENGINEERING CONSULTANTS

GERALD TETCHNER

Professional Experience

Gerald Tetchner as MD of Enertech Engineering Consultants has been involved for over 25 years in Renewable Energy Projects, which have included Anaerobic Digestion, Landfill Gas, Biomass, Waste Resource Management Projects and a combination of the above. His professional life has extended over 40 years working initially in the Marine Engineering Industry building and operating ships then into the building and designing of Thermal Heat Exchangers and Boilers for the Power Station and Chemical Industries, World wide.

He has also been associated with and lectured at Leeds University in the Civil Engineering Department and Fuels & Energy Innovation Department for over 20 years as an experienced project development engineer working with UK Renewable Energy Government Programmes.

Summary of Projects/Experience

As an approved consultant working with the following UK Government Departments:

DTI, DECC, DEFRA and Future Energy Solutions for a number of years has been closely associated with the development of Anaerobic Digestion and its expansion in both the Sewage Industry and now the MSW/Organic Food Industries as a Bio Energy Resource.

Also as a DTI/DECC Assessor has been closely involved with the development of Gasification, Pyrolysis and Advanced Combustion Techniques with Multiple Biomass Feed Stocks.

- 1996 – 2000: Ran a Research Centre at Leeming North Yorkshire in AD Processes.
- May 2000: Carried out a DTI investigation and review of the Integrated Waste Management Service of one of the larger Southern Counties combined with a review of Integrating Anaerobic Digestion into this strategy.
- August 2000: At the invitation of the Chinese Government, investigated and reviewed two large Landfill Projects in Anshan, one of 4 million cubic metres and the other designed to go to 15 million cubic metres capacity. From this visit, a report was formulated so an integrated waste strategy could be proposed for both the site operation and gas utilisation.
- 2001: Review of Gasification / Pyrolysis technology for banks.
- August 2003: Technical support adviser on research into MBT/Thermal processing of MSW.
- November 2003: Reviewed Biomass Fuel Technology for DTi/Banks.
- 2005: Review of Gasification / Pyrolysis technology for banks – Updated.
- 2001 – 2005: Technical support and advisor on waste and environmental issues for the DTi project at Fairport Engineering to produce multi-fuel from MSW.
- 2006: Project Supervisor for the Green Fuel Challenge Project converting Landfill Gas into fuel for vehicle use.
- 2006: Resource Management for Guernsey Waste – ongoing.
- Involved in 18 Landfill Projects in the UK and China.
- Involved in 47 CHP Biogas projects.
- Working with the Portuguese Government Agency on Environmental issues in an advisory capacity.

- 2006: Various presentations on MBT for the CIWM and lectures conducted for Leeds University to 2nd year MSC Students.
- 2006: Carried out 2 Pyrolysis and 3 Gasification studies and researched a Hi Temperature Plasma project for the DTi.
- 2007: Carried out technical Due Diligence into Pyrolysis, Gasification and Anaerobic digestion for Matrix, Deutsche Bank, Nord LLB and the Co-operative Bank.
- 2007: Provided Bio-Diesel technical support for the Carlyle Group and Bio-Fuels technical support for Invest North East.
- 2007: On behalf of the DTi and BERR carried out a survey into alternative fuels and waste.
- 2008: Carried out a Waste survey in food and alternative waste streams suitable for digestion in Yorkshire and the North East.
- 2008: Carried out a Bio-Fuels review of facilities for Central Government.
- 2008: Reviewed 3 Gasifier projects, 2 Pyrolysis projects and 2 Anaerobic Digestion projects for W.M.D.C.
- 2008: Technical advisor on the utilisation of Landfill Gas for vehicle use on behalf of companies in the USA, Spain and the UK.
- 2008: Provided a Due Diligence on a Plasma Arc gas unit in Spain.
- 2008: Ongoing technical support on Pyrolysis and MBT for 3 companies in England and Wales and trialling new waste composition in light of new waste legislation.
- 2008 - 2009: Carried out Technical Due Diligence on 64 AD Process Suppliers World Wide for Enviroparks Project Wales.
- 2008 – 2009: Assess efficiency of conventional AD of MSW and food waste against Fast Liquid Digestion.
- 2010: Carried out cost/versus energy efficiency of 6 Advance Digestion Processes.
- 2010: Working with DECC, DEFRA, NNFCC on integration of Bio Feed Stocks as Bio Methane for vehicle fuel use.
- 2010: Member of REA Group on AD & Bio Feed Stocks.
- 2010: Is retained as an Advisor/Owners Engineer on the largest proposed AD Plant from Food/MSW Organic Waste Streams in the UK.

AUTHOR/CO-AUTHOR OF THE FOLLOWING REPORTS:

- Involved in rewriting Small Scale CHP guidance notes for Engines Running on Natural and Biogas fuels, plus visiting and researching over 80 CHP installations as part of review.
- Involved with F.E.C. on reviewing Wood Burning Boilers.
- Guidance notes on Centralised Anaerobic Digestion of Farm Wastes.
- Study into Renewable Energy in Southern England.
- Comparing the Environmental Impacts of Incineration to Landfill Disposal.
- Comparing ways of removing H₂S from Biogas.
- Survey of emissions from gas engines fuelled on Biogas from Sewage Works.
- Advisor on formation of Waste Guidance Notes for the I.W.M. series 27 with Mr. C. Welsh of West Yorkshire Waste Management.
- Good practice guidelines on Anaerobic Digestion of Farm and Food Processing Residues.
- DTi study and research project into producing a renewable energy / ROC able fuel from the bi-organic fraction of MSW.
- Research into Bio-organic fraction of MSW for co-firing in Power Stations.
- Researched different methods of cleaning landfill gas for vehicle fuel CNG and LNG then worked with client on operational plant for Green Fuel Challenge.
- Written several papers on MBT processes and fuel produced.
- Written with others Guidance Notes on the integration of multiple technologies for the processing and conversion of different waste streams to gain the greater efficiency of feed stocks to energy.

Appointments and References:

Memberships:

- Member of the Chartered Institute of Waste Management
- Member of the Institute of Plant Engineers
- Member of the Society of Operations Engineers
- Member of the Anaerobic Digestion Committee of Renewable Energy Association

Professional References:

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9.3 RESOURCE RECOVERY FACILITY - CONTRACT OWNERSHIP MODELS

REFERENCE: COMMITTEES-12157

PURPOSE OF REPORT

To advise Council of the outcome of a review of the contract ownership models for the Resource Recovery Facility.

KEY ISSUES AND RECOMMENDATION(S)

- The Design Build Operate and Maintain Contract (DBOM) model has been reviewed and compared to the Design and Construct (D&C) and Build Own Operate (BOO) contract models.
- The issue of ownership of the Resource Recovery Facility (RRF) is separate from the issue of operation and maintenance of the facility.
- There are advantages if the EMRC own the RRF.
- There potential advantages to the EMRC with the contractor operating and maintaining the RRF.

Recommendation(s)

That:

1. Council confirms the Design & Construct and the Design Build Operate and Maintain contract models are preferred to the Build Own Operate model at this stage of the project.
2. Council notes a final decision on the preferred contract model will be made prior to preparation of the Resource Recovery Facility tender documentation.

SOURCE OF REPORT

Manager Project Development

BACKGROUND

At the 9 April 2011 meeting of the Resource Recovery Committee (RRC), Mr John King of Cardno and Ms Melanie Cave of Freehills provided a presentation on the contract model options, the acceptable tenderer contract option preferences and the key features and issues of the models being considered.

The Committee requested that the EMRC investigate the DBOM model and provide a further report to Council.

REPORT

Cardno have prepared a report on the ownership and operation options for the RRF including Term Sheets developed by Freehills for a Design Build Operate and Maintain (DBOM) contract model (refer attachment).



Item 9.3 continued

The report compares the three contract models under consideration including the Design and Construct D&C model which is Council's current contract model preference, the BOO contract model and the recently suggested DBOM contract model. This comparison considers ownership issues, operation and maintenance issues and recommends the DBOM as the preferred contract model on the basis that:

1. The RRF is best financed and owned by the EMRC. This has advantages over private ownership under the BOO contract model in terms of being able to upgrade or expand the facility and as shown in previous analysis it provides lower costs in terms of the financing; and
2. There are potential advantages in having the preferred tenderer for the RRF not only undertake the design and construction of the facility as they would under the D&C model but also the operation and maintenance of the facility.

The key assumptions in this assessment are that:

1. The DBOM model brings an experienced operator into the project; and
2. The operator can better manage the interface issues between the various work packages, particularly the technology specification, engineering design, construction, commissioning, operation and maintenance, sales and marketing of products.

Officer Comment

The analysis by Cardno has included a preliminary update of the financial model to compare the DBOM contract model with both the D&C and BOO contract models. Previous analysis by Cardno showed that the D&C contract model provided better value to the member Councils than a BOO contract model. The updated analysis shows that for a two bin system, the DBOM contract model is comparable to the D&C option, both of which are more favourable than the BOO option. This is attributed to the reduction in the financing cost for the DBOM option and whilst there is a premium paid for the operations and maintenance, the risk cost is lower.

Following the visit to Perth in April 2010 by Professor Themelis and Ms Robin Davidov, Ms Davidov has confirmed that the preferred contract model used by the Northeast Maryland Waste Disposal Authority (the Authority) in procuring waste management facilities (including waste to energy plants) is the full service model, which is similar in most respects to the DBOM model under consideration by EMRC.

This means that the vendor selected by the Authority is responsible for the design, permitting, construction and operations for 20 years. There are typically two five year extensions, but only at the Authority's option (due to US State law). In Ms Davidov's experience this has resulted in more efficient and better operations, but the trade off is a higher capital cost because the vendor is taking the risk on the cost of construction. By getting competitive proposals and spending a lot of effort negotiating, they feel that they are able to receive a competitive price. Their other reason for adopting a full service model is that the vendor will not take shortcuts on construction if it is responsible for operations over a long term. One way they suggest to reduce the project cost is to share the construction cost risk. Due to the uncertainty with construction costs in the U.S. (labour and materials), they fix the construction price on the selection date, and then allow the cost to increase or decrease by a construction cost/labour cost index formula.

The Authority have adopted this strategy because they believe this is the best use of their expertise in managing the contract, ensuring the key performance indicators are met and leaving the business of running a large power station to those with appropriate expertise.



Item 9.3 continued

In comparison the D&C model provides for an initial operating period of up to two years to prove the performance of the facility and train personnel. This model also allows for the EMRC to offer an extended operation and maintenance contract beyond the initial operating period. This would preferably be detailed in the tender specification. This could potentially achieve the same objectives as a DBOM model but with less incentive for the tenderer because of the uncertainty of outcome.

In conclusion, EMRC's choice of the preferred contract model clearly needs to include the option of a DBOM contract model. A final choice does not necessarily need to be made now however it will need to be made before calling for tenders for the RRF in mid-2012 based on the current project schedule.

STRATEGIC/POLICY IMPLICATIONS

Key Result Area 1 – Environmental Sustainability

- 1.3 To provide resource recovery and recycling solutions in partnership with member Councils

FINANCIAL IMPLICATIONS

Nil

SUSTAINABILITY IMPLICATIONS

Key Result Area 1 – Environmental Sustainability

- 1.3 To provide resource recovery and recycling solutions in partnership with member Councils

MEMBER COUNCIL IMPLICATIONS

Member Council	Implication Details
Town of Bassendean	} Nil
City of Bayswater	
City of Belmont	
Shire of Kalamunda	
Shire of Mundaring	
City of Swan	

ATTACHMENT(S)

[Report – EMRC Resource Recovery Facility – Ownership and Operation Options \(Ref: Committees-12394\)](#)

VOTING REQUIREMENT

Simple Majority



Item 9.3 continued

RECOMMENDATION(S)

That:

1. Council confirms the Design & Construct and the Design Build Operate and Maintain contract models are preferred to the Build Own Operate model at this stage of the project.
2. Council notes a final decision on the preferred contract model will be made prior to preparation of the Resource Recovery Facility tender documentation.

Mr King of Cardno provided a presentation on the Resource Recovery Facility – Contract Ownership Models.

Discussion ensued

Cr Färdig queried whether the NPV figures for the D&C and DBOM options were correct. Mr King confirmed that the figures were correct and that the difference between them related mostly to the discount rate and that the figures were part of an economic or financial assessment of the options, not an accounting assessment.

In response to the CEO's query on whether the risk cost was recovered from the gate fee and put into the Reserve, Mr King advised that based on the SMRC experience it was advisable to put funds aside in case the unexpected happened rather than increase the gate fee when an unexpected event occurred. Therefore it was best to build a contingency amount into the gate fee, and for it to be monitored over the life of the RRF.

Cr Pule asked what would happen in the event a member Council withdrew which has the effect of reducing the amount of waste for processing and consequently the RRF operator suffered a loss. Ms Cave advised that under a DBOM if a member Council withdraws from the project leading to a reduction in total waste available to be delivered to the RRF that is a risk that rests with the EMRC. Risks associated with the supply of waste are seen to be more manageable with the EMRC than the contractor and so the EMRC will usually be required to guarantee waste supply under the contract. It would therefore be up to the EMRC to find another supply or pay a higher cost per tonne for the waste that is processed. The DBOM allows for a degree more flexibility than a BOO for the EMRC to terminate or vary the contract to manage on inability to deliver the required tonnage as the owner of the RRF. In comparison, under a BOO, the Contractor owns the RRF and the EMRC must continue to deliver waste at the specified tonnage for the duration of the contract or pay the contractor an equivalent sum.

Cr Färdig stated that on a practical level he felt that a DBOM would be the most practical particularly if a staged approach was adopted. This would be of more financial benefit to the EMRC and the size of plant could be increased later if needed. Cr Färdig asked if a staged approach was being taken into account. Mr King advised that one of Cardno's tasks was to consider staging and it would be brought back to Council for consideration.

Mr King confirmed Cr Godfrey's query that there was more risk to a contractor and less for the EMRC under a BOO model, but there would be a premium charged by the contractor to take on that risk. In terms of ownership risks, including financing risk which are the major differences between the DBOM and BOO contract models, the market will be charging a premium for the contractor to own and take the risk of the facility. This study has shown that the size of the premium to be paid for the contractor owning the facility is likely to be higher than the benefits.

In response to Cr Pule's query on whether the risk assessments under the various contract models took into account the risk of the operator defaulting, Mr King advised that the risk matrix had been developed based on earlier work undertaken by Worley Parsons and had been developed in terms of the D&C model.



Item 9.3 continued

The CEO referred to comments made by Ms Davidov that one of the advantages of a DBOM was that if an operator failed they could bring in another operator. Mr King confirmed that if EMRC owned the facility and the land it would be easier to terminate the contractor under a DBOM contract than with a BOO contract.

The Manager Project Development sought confirmation from Ms Cave that in the event of operator default that it had been considered in the DBOM term sheet. Ms Cave advised that under a DBOM if an operator defaults due to poor performance or insolvency there would be a period of identifying the default, providing an opportunity to rectify the default and period of discussion with the operator. Should the course of action fail to remedy the default, the EMRC would have the ability to terminate the contract and bring in another operator. Ms Cave advised that with a BOO the operator's banks will assume control of the event and have the choice of operator to put in.

Cr Godfrey referred to Mr Kings' earlier comments regarding the NPV values being an economic or financial assessment rather than an accounting assessment and asked what the rate of return was. Mr King advised that the internal rate of return for the D&C and DBOM options (EMRC owned) was zero and what was shown was a break-even cost per tonne to use the facility. This cost would be used as a basis for setting a member Council gate fee and would need to allow for a margin for future costs. If a BOO was adopted and the contractor financed the capital cost of the project, then the shareholders of the contracting company would seek an internal rate of return on the capital that it invested in the project. Mr King advised that since the global financial crisis (GFC) the amount of equity that the operator is required to contribute to the capital cost of the project has increased to approximately 25% of the total funding and the return on equity for the contractor is approximately 12.5%. These rates have been assumed in the modelling for the BOO option.

RRC RECOMMENDATION(S)

MOVED CR FÄRDIG

SECONDED CR RADFORD

That:

1. Council confirms the Design & Construct and the Design Build Operate and Maintain contract models are preferred to the Build Own Operate model at this stage of the project.
2. Council notes a final decision on the preferred contract model will be made prior to preparation of the Resource Recovery Facility tender documentation.

CARRIED UNANIMOUSLY



EMRC Resource Recovery Facility Project – Ownership and Operation Options

**Prepared for Eastern Metropolitan Regional Council
May 2011**

Project Number V9090



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Executive Summary

The Eastern Metropolitan Regional Council (EMRC) is currently undertaking a project to establish a Resource Recovery Facility (RRF) to process household waste from Perth's Eastern Region and to recover usable resources. In May 2010 the Council considered a report which addressed a number of key planning decisions associated with the project. Among these was the form of the contract that would be used in procuring the facility which included the question of who would own the facility.

A comprehensive report on the various forms of contract that are available to the EMRC (the *Planning Decision Summary Report*) was presented to Council. Of the various models presented, two were seen to be preferred. The choice between the two was seen to be determined by the issue of whether or not the EMRC would own and operate the RRF. These two options were the Build Own and Operate (BOO) model and the Design and Construct (D&C) model.

At its meeting in May 2010 the Council did not adopt a firm position on this question, but instead, stated that the D&C option was its preferred position at this stage of the project, based in part on that option being considered to provide better value for money. The final decision was deferred until closer to the time for calling tenders for the facility.

At its meeting on April 2011, the Resource Recovery Committee requested that the Design Build Operate and Maintain (DBOM) contract model be assessed together with the BOO and D&C contract models and reported on in the June 2011 round of meetings.

In determining the preferred project structure, the following project characteristics need to be noted:

- There are a number of key elements, or work packages of the project that are diverse and will need to be undertaken by different parties, as described in **Section 2** of this report;
- The interface between these packages is likely to be complex to manage in some instances. Examples are the interfaces between the provision of the technology, design and documentation and construction as well as the interface between operation and maintenance of the RRF and the marketing and sale of the products (particularly soil conditioners);
- The number of packages adds to the complexity of managing the interfaces; and
- Some of the packages require specialist skills and knowledge that are likely to be provided by specialist organisations.

There are a number of risks that reside with the owner of most assets, such as the RRF. These include the provision of capital funding, risks associated with unexpected events that are not the responsibility of either the owner or the Operator, insurance and dealing with the asset. Some of these risks can be partially transferred to the Operator of the facility, but most reside with the owner.

The current financial market has removed some of the advantages that existed for private ownership of these types of assets, through higher costs of financing and the introduction of significant refinancing costs.

If the EMRC was to own the RRF it would have greater flexibility to deal with it, for example by introducing upgrades such as improving the technology or increasing its capacity.

The effects on the Member Council's credit rating and ability to borrow due to guarantees from those Councils for the financial obligations of the EMRC under a BOO contract is now the same as for the

guarantees that would have to be provided for direct borrowing by the EMRC (such as under a D&C or a DBOM contract). This has removed an important point of differentiation between contractor ownership of the RRF (BOO contracts) and EMRC ownership (D&C or DBOM contracts).

This report has found that the preferred option relating to ownership is for the EMRC to finance and own the RRF and to have the design and construction undertaken by a competent contractor.

There are a number of risks associated with the operation and maintenance of the RRF that would reside predominantly with the Operator, be it the EMRC or a contractor. These include defects, whole of life operating costs, cost overruns, industrial relations and escalation risks.

The Operator of the RRF is normally responsible for defects that occur after the defects liability period has expired unless they can be proven to be a defect in the construction of the RRF or the RRF is not fit for the purpose for which it was constructed.

There are therefore advantages in the contractor being responsible for the design/construction of the RRF as well as its operation/maintenance. This eliminates a number of important project interfaces that, in themselves introduce risks to the project.

As noted in **Section 7.1** of this report, a competent and experienced Operator should also be better placed to operate and maintain the RRF than the EMRC due to their access to more experienced resources and their greater experience in undertaking these types of projects.

This report has found that the preferred option relating to operation and maintenance of the RRF is for the EMRC to contract this responsibility to the same contractor that undertakes the design and construction of the RRF.

The contract model that provides for the EMRC to own the RRF and then to contract out the design, construction, operation and maintenance of the RRF, as concluded above, is the DBOM model. This model provides for one party (the contractor) to be responsible for the most of the whole of life risks of the RRF, and so provides the EMRC and its Member Councils with greater certainty of future costs. It also minimises the interface risks borne by the EMRC and places them with the contractor, who is better placed to manage those risks. The contractor's greater ability to manage the project risks should ensure that the whole of life costs are also minimised.

A preliminary financial analysis of the DBOM contract model shows that it is comparable to the D&C option both of which are more favourable than the BOO option. This is attributed to the reduction in the financing cost for the DBOM option and whilst there is a premium paid for the operations and maintenance, the risk cost is lower.

It is recommended that the EMRC resolves to adopt the Design, Build Operate and Maintain contract model for the RR Project and that the term of the operating period of the contract be 10 years, with the option to extend the contract for a period or periods up to the end of the economic life of the RRF.

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Appendices

Appendix A Term Sheets for Contract Models

1 Background

The Eastern Metropolitan Regional Council (EMRC) is currently undertaking a project to establish a Resource Recovery Facility (RRF) to process household waste from Perth's Eastern Region and to recover usable resources. In May 2010 the Council considered a report which addressed a number of key planning decisions associated with the project. Among these was the form of contract that would be used in procuring the facility which included the question of who would own the facility.

A comprehensive report on the various forms of contract that are available to the EMRC (the *Planning Decision Summary Report*) was presented to Council. Of the various models presented, two were seen to be preferred. The choice between the two was seen to be determined by the issue of whether or not the EMRC would own the RRF. These two options were the Build Own and Operate (BOO) model and the Design and Construct (D&C) model.

The BOO model is characterised by the contractor owning, funding, designing, building, operating and maintaining the RRF. The EMRC would purchase the service of resource recovery and would pay a fee to the contractor for that service. The fee would incorporate the cost of financing, maintaining and operating the facility. The term of the contract would approximately equate to the economic life of the RRF (approximately 20 years). The EMRC would structure the contract so that it provided the site for the facility to the contractor under a lease agreement and the RRF would only process waste that was provided by or through the EMRC.

The D&C model is characterised by the EMRC owning the RRF, paying for its capital cost as it is built and then assuming responsibility for the operation and maintenance of the facility after an initial operating period. During the initial operating period the contractor will be obliged to demonstrate that the RRF performs to required standards prior to operating responsibility being transferred to the EMRC. It is expected that this will take approximately 2 years. The contractor will also be required to recruit and train staff to operate the RRF and to transfer the staff to the EMRC when operating responsibility transfers. Technical support will be provided to the EMRC by the technology provider under a licence agreement. In some cases the support would be provided through the D&C contractor if it holds the Australian licensing rights for the technology.

More details of the BOO and D&C contract models are contained in **Section 4**.

At its meeting in May 2010 the Council did not adopt a final position on the contract model issue, but instead, stated that the D&C option was its preferred position at this stage of the project. The final decision was deferred until closer to the time for calling tenders for the facility.

The D&C option was adopted as the preferred option on the basis of it offering the best value for money for the following reasons:

- The GFC has impacted on the attractiveness of BOO contracts for project at this stage – this mostly relates to the private financing and ownership of the facility.
- Cost of private financing has increased due to more risk aversion in the finance market – higher set up costs and interest rates.
- Lack of long term financing for private infrastructure investments now – banks lending up to 5 years and then requiring refinancing. Introduces a significant refinancing risk.
- BOO is a more complicated contract structure.
- D&C has greater flexibility to introduce changes to the design and operation of the RRF during its life
- Consideration of the operability and complexity of the different technology options and information gained from visits to acceptable tenderer reference facilities.

These issues are discussed in more details in the following sections.

Acceptable tenderer feedback on contract models from the EOI process was that two of the seven acceptable tenderers preferred only the BOO contract model and two others preferred a BOO but would consider other models. Since the May 2010 Council resolution, some of these tenderers have again raised the issue of the contract model and suggested that the EMRC should consider adopting an alternative contract option for the RRF.

The EMRC has also discussed the ownership model with Ms Robin Davidov of Northeast Maryland Waste Disposal Authority (NMWDA) following her visit to Perth in April 2010 with Professor Themelis. Ms Davidov advised that their contract model was for the Authority to own the facility and to contract out the operation and maintenance. They refer to this as full service, which means that the selected vendor is responsible for the design, permitting, construction and operations for 20 years. There are typically two five year extensions, but only at the Authority's option (this is due to State law). In Ms Davidov's experience this results in more efficient and better operations, but the trade off is a higher capital cost because the vendor is taking the risk on the cost of construction. By getting competitive proposals and spending a lot of effort negotiating, they feel that they get a competitive price. Their other reason for adopting a full service model is that the vendor will not take shortcuts on construction if it is responsible for operations over a long term.

One way they suggest to reduce the project cost is to share the construction cost risk. Due to the uncertainty with construction costs in the U.S. (labour and materials), they fix the construction price on the selection date, and then allow the cost to increase or decrease by a construction cost/labour cost index formula.

So the contract model being assessed in this report would involve the EMRC owning the facility, as per the D&C option, but for the contractor to operate and maintain it for an extended period, up to the end of its economic life. The term of the contract would be in the range of 10 - 20 years. This option is known as the Design Build Operate and Maintain (DBOM) option. The RRC has requested that this alternative option to the BOO and D&C contract models be assessed and reported on in the June 2011 round of meetings.

Most of the concerns with the BOO (which led to the D&C option being preferred) relate to the private financing and ownership of the RRF and the whole of life costs, rather than private operation and maintenance. The DBOM option retains EMRC ownership of the RRF and therefore over comes most of the concerns with the BOO option, while having the whole of life responsibility for the RRF with the one party – the contractor.

Based on the initial assessment undertaken for the *Planning Decision Summary Report* (September 2009) it is desirable for the ownership of the RRF to be considered separately from the responsibility for operation and maintenance. This is done in this assessment of the BOO, DBOM and D&C contract options.

This report readdresses and updates the issues associated with the form of tender for procuring the RRF and recommends that the Council adopts a final position on the contract model. It addresses the issue of ownership separate to the issue of operation/maintenance.

2 Key Tasks in the RRF Project

In the context of considering the form of the contract for the EMRC RRF project, there is a number of key tasks of the project that may be undertaken by different parties. These are as follows:

Provision of a Site

A site is required for the facility that is suitable for use for the RRF. Among the site requirements, it will need to have appropriate land use classification (zoning) for this purpose and infrastructure such as road access and suitable utility services.

Environmental Approval

The RRF will be a Prescribed Premises under the *Environmental Protection Act 1986* ('the Act') and will need to be regulated under Part V of the Act by the Department of Environment and Conservation during construction and operation. The Environmental Protection Authority has determined that the required level of assessment needed to approve its development is a Public Environmental Review under Part IV of the Act.

Financing

The development of the RRF is expected to cost up to \$100M. Funding will need to be arranged by the EMRC, either from the Participating Councils, direct borrowing from a financial institution or by the contractor, through a Public Private Partnership. Reserve funds held by the EMRC are expected to be used to contribute towards the capital cost of the project.

Provision of the waste treatment technology

The core technology for the facility would normally be proprietary technology that has been successfully used for other similar facilities and which is provided to this project under a technology licence agreement. The technology provider would normally be responsible for the process design of the facility and is then involved in the development of the basic and detailed engineering design. They would also be likely to be involved in any Hazop analysis, development of operating manuals, operator training and the facility's commissioning.

Design and documentation

The design development and detailed design of all aspects of the facility would need to be undertaken, incorporating the process design requirements of the technology licensor. The design would normally be undertaken by an experienced design team and may involve one or more specialist teams or an engineering contractor in liaison with the technology licensor. The specialist teams may be needed to design particular components of the facility's mechanical equipment, including the odour management system and major processing vessels.

Construction

A main contractor would undertake the construction of the facility. There may be a need to have a specialist sub contractor involved in the fabrication and installation of key elements of the facility such as digesters or other vessels.

Commissioning

Following construction, it is necessary to undertake commissioning of the facility to ensure that it performs in accordance with the design and performance guarantees (e.g. kWh/tonne waste, volume biogas/tonne waste). 'Dry' commissioning is normally undertaken by the construction contractor to ensure that the machinery works as designed. 'Wet' commissioning involves processing waste through the facility and occurs after 'Dry' commissioning has been successful. 'Wet' commissioning is normally undertaken by the future Operator of the facility (usually in conjunction with or under the supervision of the technology licensor representatives) and leads into the commencement of full operation. It is needed to demonstrate that the facility is able to meet the specified performance standards during full operation.

Operation and Maintenance

The operation of the RRF throughout its economic life will need to be undertaken in compliance with DEC licence conditions, in a sensitive political environment and in a cost effective manner. A key objective of the facility will be to reduce waste to landfill and produce or generate products suitable for sale. The products are likely to include recyclables, compost, electricity and potentially, heat.

The facility will also need to be maintained throughout its economic life to enable it to perform reliably, safely and meet design and operational requirements.

Supply and Delivery of Waste

Waste from the member Councils will be delivered to the RRF for treatment. It will be necessary to ensure that there is certainty with the delivery of waste so that the RRF can operate continuously and economically. The delivery of the waste will also need to comply with agreed operational protocols.

Marketing and Sale of Products

Products generated from the RRF will need to meet market requirements. These products will need to be marketed and sold. Revenue from the sales is likely to form an important part of the project cash flow and economic viability. Close liaison will need to be maintained between the RRF Operator and the marketing and sales team, to ensure that sales contract commitments can be met in terms of quality, quantity and timeliness of delivery. This is particularly important for compost, and to a lesser degree, recyclables.

3 Allocation of Responsibility for Key Tasks

In determining the preferred project structure, the following project characteristics need to be noted:

- There are a number of key tasks of the project that are diverse and will need to be undertaken by different parties, as described in **Section 2**;
- The interface between these tasks is likely to be complex to manage in some instances. Examples are the interfaces between the provision of the technology, design and documentation and construction as well at the interface between operation and maintenance of the RRF and the marketing and sale of the products; and
- The number of tasks adds to the complexity of managing the interfaces.

Table 3-1: Preferred Organisation to Manage Project Work Packages

below, identifies the Key Tasks of the Project and whether the EMRC or a contractor is better able to manage each of these work packages. This is determined by their ability to manage the risks associated with the packages in the most cost effective manner.

Table 3-1: Preferred Organisation to Manage Project Work Packages

Work Package	Preferred Responsible Organisation		Comment
	EMRC	Contractor	
1. Provision of Site	✓		Political implications and Red Hill is available.
2. Environmental Approval	✓		Environmental conditions can be included in the contract if determined by the EMRC, prior to contract award.
3. Financing	✓		The market conditions for financing projects of this scale have changed significantly since the global financial crisis, making private financing less attractive.
4. Provision of Waste Treatment technology		✓	Highly specialised requirement. EMRC does not have access to its own suitable technology.
5. Design and Documentation		✓	EMRC does not have in house capability.
6. Construction		✓	EMRC does not have in house capability.
7. Commissioning		✓	EMRC does not have in house capability.
8. Operation and Maintenance	✓	✓	Specialised requirements. EMRC does not currently have all the necessary in house skills. May be able to develop the skills over time through recruitment and training (as provided for in the D&C contract)

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9. Supply and Delivery of Waste	✓		EMRC has access to the waste from the Member Councils.
10. Marketing and Sale of Products	✓	✓	Specialised requirements. EMRC has in house skill with limited capacity. Will be able to develop additional capacity over time.
11. Disposal of Residual Waste	✓		EMRC has the facilities (Red Hill Waste Management Facility) and the expertise to undertake this task.

Financing of the facility is a key component of ownership of the facility and **Table 3-1: Preferred Organisation to Manage Project Work Packages**

shows that is now best undertaken by the EMRC rather than the contractor. The provision of the site, environmental approvals, the supply of waste material and disposal of residual waste would also be best undertaken by the EMRC.

A large portion of the engineering risks of the project are addressed during the design, construction, commissioning and Initial Operating Periods of the project. **Table 3-1** shows that the contractor is better able to undertake these project elements than the EMRC. There are two components to this assessment. Firstly a competent contractor would be better able to manage each of these risks due to their skills and experience in undertaking these tasks on similar projects. The EMRC does not have the skills or experience in undertaking these tasks. Also, there is a strong case for one contractor having responsibility for these elements of the project due to the complex nature of the interfaces between the elements. If, for example, a problem arose with the performance of the RRF, then there is a high risk that a dispute would occur as to whether the cause was a design or construction defect, or if it was an operational failure. If one party was responsible for all of these phases of the project, then there would not be any grounds for a dispute over responsibility for a defect if it was to occur. So from the Planning Decisions Report, the D&C risk mitigation strategy was to employ an Owners Engineer amongst other things to manage the interfaces and ensure facility is fit for purpose.

If the EMRC chose to operate the RRF, then it should do so after the facility has been successfully commissioned and has been operating for a period (approximately 2 years) to demonstrate that it can meet the required performance standards. Following this initial period, the operating risks should have diminished significantly. However, the whole of life maintenance risks will not necessarily have diminished as most of the major refurbishment tasks will be required after this initial period. There is a complex contractual interface between operating and maintaining the facility. Disputes over responsibility for deficiencies in performance are likely to arise if these elements are undertaken by different parties. Therefore, if the EMRC was to take over the operation of the RRF after an Initial Operating Period, it should also take over responsibility for maintenance. This project structure could be achieved using a D&C contract, with the contractor also being responsible for operating the RRF for an initial period of approximately two years.

While the contractor is identified as being the party best positioned to operate the RRF (particularly in the early stages), either party could be responsible for marketing and sales of products. There is a strong relationship between these elements of the project, which favours having the one party (either the EMRC or the main contractor) responsible for them all. The EMRC currently has a capability to market products, such as mulch and compost that it produces at its Red Hill facility. This capability could be extended to market the products from the RRF, particularly if the EMRC chose to operate the RRF in a similar manner to that adopted by the Southern Metropolitan Regional Council (SMRC).

4 Summary of the Contract Models Under Consideration

As noted in **Section 1**, the issue of ownership of the RRF will be assessed separately to that of operation and maintenance. Prior to doing this assessment it is necessary to provide details of the contract options that are being considered. Other contract models were assessed in the *Planning Decision Summary Report* presented to Council in May 2010, but were found not to be appropriate for this project. Therefore they are not being discussed again in this report. The following discussion will be limited to consideration of the BOO, D&C and DBOM options.

The D&C and the BOO differ in two respects; which party owns the RRF and which party operates the RRF. The DBOM combines both, with EMRC owning the RRF, and the Contractor operating the RRF for an extended operating period (usually no less than 10 years).

4.1 Design and Construct (D&C)

In the case of the D&C, ownership and operation of the RRF is with the EMRC. Therefore, the EMRC will contract with the successful tenderer (the main contractor - who in turn will subcontract with a nominated partner) under this model and will pay the main contractor for the construction of the RRF. The EMRC is responsible for obtaining the necessary funds to construct the RRF.

Following practical completion of the RRF, the contractor's involvement is as follows:

- until the expiry of the defects liability period, correction of all defects that arise in respect of the construction of the RRF;
- until the expiry of the initial performance period (up to 2 years), all operation and maintenance of the RRF, together with training provided to the EMRC or its selected Operation and Maintenance (O&M) contractor; and
- if extended warranties are obtained (usually in respect of particular aspects of the technology), correction of a failure of the warranted technology during the warranty period, provided that the failure is not caused by the inappropriate operation and maintenance of the RRF by the EMRC.

4.2 Build Own and Operate (BOO)

In the case of the BOO, ownership and operation is with the private operator. Therefore, the EMRC will most likely contract with the successful tenderer and Operator), who will be responsible for subcontracting and managing the risk of a builder for the construction phase.

The BOO contract will specify the outputs that the RRF is required to produce, rather than how it is to be constructed. The Operator is then responsible for both building and operating the RRF to achieve those outputs. The EMRC's payment obligations only commence once the RRF is operational and waste is being processed. The service fee is calculated to cover the Operator's fixed costs (operational and funding) and its variable operation cost.

The Operator's involvement in the RRF continues until the expiry of the operation term which is usually aligned to the design life of the RRF. This is also usually a similar duration as the debt repayment obligations of the Operator to repay the amount borrowed to construct the RRF. The shorter the operating period, the larger the fixed component of the service payment, as there is less period of time over which to amortise the repayment of the debt.

4.3 Design, Build, Operate and Maintain (DBOM)

In the case of a DBOM, ownership of the RRF is with the EMRC but operation is with the Operator. Therefore, as with the BOO, the EMRC will contract with the main contractor, who is most likely to be an Operator or technology provider who will be responsible for subcontracting and managing the risk of a builder for the construction phase.

However, the DBOM differs from the BOO in that the EMRC will be required to obtain its own funding for the RRF. Under a DBOM, the EMRC will have two significant payment streams to make to the Operator:

- construction payments during the construction phase, usually by way of milestone and progress payments representing the capital cost of the RRF. These will be used by the Operator to pay the building subcontractor and to compensate the Operator for its own management costs; and
- service payments during the operation phase, usually by way of regular monthly payments linked to the amount of waste processed by the RRF.

The service payment is less than under a BOO as it does not have to cover the Operator's funding repayments for the construction cost of the RRF. However, the EMRC will have its own funding repayments to make (such as capital and interest repayments to make for any borrowings), depending on the source of its funds used to pay the Operator for the construction of the RRF.

As with the BOO, the Operator's involvement in the RRF continues until the expiry of the operation term. However, unlike the BOO, the operating period under a DBOM can be less than under a BOO as it does not have to match the duration of the debt repayments. This is because the debt repayments are made by the EMRC direct to its financier, rather than by the Operator to its financier.

Provisions could be included in the contract to allow the EMRC to take over responsibility for the operating and maintenance of the RRF prior to the end of the contract term if the facility has been proven to operate reliably and with minimal risk. This would be achieved by a break clause in the contract which would allow termination by the EMRC. However, this is likely to involve the payment of a break fee by the EMRC to the Contractor. Alternatively, or also, the EMRC could award a contract term of 10 years for the operation and maintenance phase of the project, with the option to extend the contract for a period or periods up to the end of the economic life of the RRF. This would provide some flexibility for the EMRC to take over operating and maintenance responsibilities without the need to pay break fees.

Term sheets for each contract model are contained in **Appendix A**.

5 Ownership of the RRF

Both the D&C and the DBOM have the ownership risk with the EMRC. Under the BOO, the ownership risk is with the Operator.

The ownership risks are the same as the risks of owning any asset. An outline of some of the risks of ownership and a comparison of the ownership options (EMRC owned or contractor owned) are as follows.

5.1 Capital funding

The owner must find sufficient funds to finance the RRF. If debt financing is used, the owner is responsible for repaying the debt over the term of the debt. If the EMRC own the RRF, they will make regular loan repayments in addition to paying for the operation and maintenance. If the RRF is owned by the contractor, they will pay the loan from their fee received from the EMRC.

Under a BOO, the term of the debt repayment will be closely linked to the operation period. The Operator takes the risk of not being able to make its repayments when due, but the EMRC is obliged to pay the fixed component of the service fee for the duration of the operation period in order that the Operator is able to repay its debt when due. The EMRC is only excused from its obligation to pay the fixed component of the service fee to the Operator in limited circumstances. The issue usually arises if the Operator defaults. The EMRC is usually required to continue paying for a period of time whilst waste is not being processed, in order to give the Operator and the bank opportunity to remedy. The duration of the payment is usually the subject of negotiation and can vary from two months to the full duration of the remedy period (which can be up to two years). Following the remedy period, the BOO can be terminated and the payment obligations of the EMRC cease. The Operator is then responsible for repaying the remaining debt.

Under a D&C and a DBOM, the EMRC is responsible for repaying the debt to its financier. The obligation to repay the debt is not linked to the completion or operation of the RRF.

Since the Global Financial Crisis the cost of borrowing for a BOO has increased through higher interest rates and the requirement of the borrower to put in a higher proportion of equity (which has a higher cost to the project than debt). Also the availability for 20 year bank loans has disappeared as the private finance industry has become more risk averse.

Banks are now offering only 5 year loans which introduce significant refinancing risks into the project. The project is too small to be funded from bonds.

WA Treasury Corporation (WATC) still offers 20-year loans to local governments, including the EMRC (with guarantees from Member Councils). This option is available provided the WATC is able to attract the investors for those facilities. WATC only lends funds to government organisations including local governments. It is therefore only able to provide funding for D&C or DBOM contracts and not for BOO contracts.

These factors mean that the cost of private financing for projects, such as the RRF project, has increased to a greater degree than is currently available to local governments. This tends to improve the financial attractiveness of the D&C and DBOM contract models over the BOO contract model.

5.2 Unexpected events

Unexpected events which occur through no fault of either party can arise in both phases of the project. During construction, the unexpected event may delay the project and/or increase capital cost. During operation, the event may suspend operations and/or increase operating costs. Note that unexpected events are different from cost overruns, which are discussed in Section 6.3 below. Unexpected events are events such as tsunamis, unexplained power outages and explosions which are not due to the fault of either party.

The risk of unexpected events, both time and cost, is usually borne by the owner who would have appropriate insurance cover to cover most of these contingencies. However, some extreme events will be uninsurable. With reference to the specific contract models under consideration:

- Under the D&C, an unexpected event during the construction phase could lead to a variation claim being made for increased time and costs. The EMRC is obliged to bear the risk of both.

During the operation phase, as the EMRC is operating the RRF, the EMRC also bears the risk of unexpected events.

- Under the BOO, the risk of an unexpected event is shared. During the construction phase, the Operator would be entitled to claim an extension of time if it is delayed in performing its construction obligations. In addition, the EMRC may need to bear the risk of any adjustments to be made to the amount of debt required to be borrowed (which is usually the subject of negotiation), but the Operator will bear any increase in its own costs.

During the operation phase, the Operator is excused from processing waste, if the unexpected event prevents it from doing so. However, the EMRC must continue to pay the proportion of the service fee that is passed through to the financier to repay debt. The EMRC is entitled to terminate the contract if the unexpected event is prolonged, but must pay the outstanding debt amount if it does so. The Operator is not entitled to any other payment and bears all of its own costs.

- Under the DBOM, an unexpected event during the construction phase is treated in the same way as the D&C – that is, the Operator is entitled to make a variation claim to cover increased costs and delays. The EMRC bears the risk of both.

During the operation phase, the Operator is excused from performance to the extent that it cannot perform and the starting position is that it may not recover any costs from the EMRC. Generally, the costs lie where they fall. Sometimes the party in the position of EMRC will agree to bear the risk of some of the Operator's fixed costs during a period of non-performance arising out of an unexpected event, which is the subject of negotiation. If the event is prolonged, the EMRC is entitled to terminate the contract and the Operator loses the benefit of the remainder of the term.

5.3 Insurance

The party with the insurable interest is responsible for obtaining insurance. Therefore, the party who owns the RRF is usually responsible for insuring it.

Under a D&C, ownership of the RRF does not pass to the EMRC until there is a completed asset. Until that time, the builder is required to have contract works insurance for the partially completed RRF. The same applies for the DBOM. Once the operations phase commences, the EMRC will be responsible for insuring the RRF.

Under the BOO, the Operator is responsible for insuring the RRF at all times.

5.4 Dealing with the asset

This refers to the ability to sell, mortgage or otherwise deal with the asset, including upgrading the asset, improving technology or increasing capacity.

As the owner of the asset under the D&C and DBOM, the EMRC is entitled to deal with the asset in any way and is responsible for any costs associated with its actions. There are additional considerations under a DBOM. If the EMRC sells the asset and terminates the service agreement early, it may be required to pay the Operator compensation. In addition, before improving any technology or increasing capacity, the EMRC may need to vary the Operator's contract to operate the modified RRF and possibly the technology licence to (maintain warranties if they still existed at this time

Under a BOO, the Operator is the owner of the asset but is not entitled to sell or grant a mortgage over the asset without the EMRC's consent. The EMRC has no right to sell or encumber the asset at all. The EMRC can request an upgrade or increase in capacity of the RRF, but the Operator is not obliged to consent. Similarly, the Operator can upgrade the RRF, as long as it continues to meet the performance requirements of the contract. The Operator can increase the capacity of the RRF, but would need the EMRC's consent that the EMRC will deliver increased capacity or that the Operator can obtain additional tonnes from a third party.

5.5 Impact on Member Councils

Financing of an EMRC owned RRF or an Operator owned RRF will both require the Member Councils to provide guarantees on behalf of the EMRC.

If the EMRC was to own the RRF (with either a D&C or a DBOM contract model) then the Member Councils would each need to provide guarantees for a portion of money borrowed by the EMRC for the project. The proportions of the loan guaranteed by each Member Council is likely to be based on the relative populations of the Member Councils. The guarantee would require the guarantors (the Member Councils) to pay the financier (such as the WATC) their guaranteed portions of the loan in the event that the EMRC was in default of its loan conditions. As these obligations are direct guarantees for the loan, they would be treated as liabilities of the Member Councils. Any call on the guarantee of a Member Council is likely to be for the full amount of the outstanding loan that it has guaranteed. The amount guaranteed by a Member Council would be considered on an equal footing as a debt of the Council when determining its credit rating and its ability to borrow additional funds.

If the Operator was to own the RRF (with a BOO contract model) then the Member Councils would need to guarantee the EMRC's financial obligations under its contract with the RRF Operator. Again each Member Council would be responsible for guaranteeing a portion of the EMRC's financial obligations, based on their relative populations. These guarantees are not direct guarantees of the Operator's loan to finance the facility, but a guarantee of the ongoing financial obligations of the EMRC. The financial obligations of the EMRC relate to the payment of monthly invoices for the processing of waste, or other liabilities under the contract. The EMRC would only be liable to pay out the full amount of the outstanding loan if it was in default of its obligations under the RRF agreement or in events when it is obliged to share the liability of the capital costs of the RRF with the Operator. Default by the EMRC is likely to be limited substantially to the non payment of moneys due to the Operator. Under these circumstances, the Guarantors would be able to pay any outstanding amount to avoid the contract being terminated and the EMRC (and hence the guarantors) being liable to payout all outstanding loans and equity to the Operator. An event in which the EMRC would not be in default, but would be liable to contribute to the cost of the outstanding loans would be uninsurable

Unexpected Events (refer to **Section 5.2**). These are extreme events of low probability, in which the EMRC would be liable to pay all outstanding debt, even if it owned the facility.

Prior to the Global Financial Crisis the liability associated with the guarantees provided by the Member Councils under a BOO contract were considered to be of lower risk compared to direct guarantees of a loan. They were taken to be contingent liabilities and were not considered by most financiers when assessing the Member Council’s credit rating and ability to borrow. The effects of guarantees from Member Councils for the capital financing of BOO contracts is now the same as the guarantees that would have to be provided under a D&C or a DBOM contract. This has removed an important point of differentiation between BOO contracts and D&C and DBOM contracts.

5.6 Comparison of the Ownership Options

The following **Table 5-1** summarises the major differences between EMRC owning the RRF and the Operator owning it.

Table 5-1: Comparison of Ownership Options

Issue	Operator Owned (BOO)	EMRC Owned (D&C or DBOM)
Capital cost	Operator– higher cost of capital and refinancing risk due to shorter terms of loan.	Council– lower interest rates and longer terms of loans
Unexpected events	Risks Shared	Council (some risk passes to Operator as Operator loses the benefit of the contract)
Insurance	Operator	D&C – Builder for construction phase and Council for operation phase) DBOM – Shared - either party may obtain
Third party liability	Operator Risk – provided not Council caused	Council Risk – provided not Operator-caused
Dealing with asset	Restricted	Not restricted
Effect on Member Councils’ Ability to Borrow	Considered as a Liability	Considered as a Liability

Comparison of costs of contract model options

A preliminary financial analysis of the DBOM contract model shows that it is comparable to the D&C option both of which are more favourable than the BOO option. This is attributed to the reduction in the financing cost for the DBOM option and whilst there is a premium paid for the operations and maintenance, the risk cost is lower.

6 Operation and Maintenance of the RRF

With the contract models under consideration there are two options available to the EMRC for operating the RRF. The EMRC could assume the full responsibility for operating the RRF following the initial operating period during which the performance is demonstrated, through a D&C contract. Alternatively, the EMRC could assign operational responsibility to a private operator by combining the operating of the facility with the design and construction through either a BOO contract or a DBOM contract. The following sections comment on the risks that are associated with the operation of the RRF.

6.1 Defects

Under a D&C contract, if the performance of the RRF is defective and the defects liability period has expired (see section 4.1 above), the EMRC usually bears the risk of performance of the RRF. The exception is if the EMRC can prove that the defect was in the design or construction of the RRF and the RRF is not fit for the purpose for which it was constructed. However, it must also be shown that the defect did not arise as a result of the way in which the RRF has been operated or maintained. The EMRC would manage this risk by a number of means such as using an Owners Engineer, and employing appropriate staff training.

Under the DBOM and the BOO, the extended period of involvement of the Operator means that defective performance is the Operator's issue, whether the defect arose due to the construction or the operation of the RRF. An example of this is the performance issues that arose with the MRC RRF project when failures occurred in the large digesters. The responsibility for bearing the costs and determining if the failure resulted from a design or a construction flaw rests with the contractor, BioVision 2020 and not with the MRC.

This risk is also known as interface risk. If the same Operator is involved in construction and operation, it reduces the risk of transition from the construction phase to the operation phase, which is a high risk phase of the project. The Operator is responsible for ensuring that the transition is without incident.

6.2 Whole of life cost

Whole of life cost refers to the cost of construction and operation of the RRF, considered as a whole. Similar to defects, the builder or the Operator can be held responsible for the whole of life cost performance of the RRF for as long as the builder or Operator is involved in the project. Therefore, under a D&C, beyond the defects liability period, the only liability that is able to be passed from the EMRC is in respect of extended warranties that are obtained from the manufacturer of a particular component of the RRF. The warranty is limited to the performance of that component, rather than the whole of life cost of the construction and operation of the RRF as a whole. It is also obtained from the manufacturer of the component, rather than the builder and is subject to the EMRC complying with its maintenance obligations in respect of the component.

Whole of life warranties rely on both the manner of construction and the manner of operation and maintenance of the RRF. Under a DBOM, as the Operator is responsible for operating and maintaining the RRF as well as designing and constructing it, the Operator can be required to give a warranty as to the whole of life performance of the asset.

Under a BOO, the issue of whole of life cost does not arise, as the Operator is the owner of the asset and therefore bears the risk of it.

6.3 Cost overruns

Cost overruns occur in both the construction and operation phases. In this case, cost overruns are due to mismanagement or underestimated costs or an increase in input costs (such as the cost of steel increasing or labour costs), otherwise than due to an unexpected event described above in section 5.2.

Under the D&C, during the construction phase, the risk of cost overruns is with the builder. During the operation phase, it is with the EMRC as the Operator of the RRF.

Under both the BOO and the DBOM, the risk of cost overruns is always with the Operator. However, note that it is an area that is always the subject of negotiation as to what events leading to the cost overrun are risks borne by the Operator and what events are risks borne by the EMRC.

6.4 Industrial relations

The industrial relations risk during the operations phase of the facility's life is with whichever party is responsible for the workforce at the RRF. Industrial relations risk can arise in respect of shortages of resources, industrial unrest and safety (other than statutory liability which the EMRC, as principal, cannot contract out of).

Under the D&C model, the EMRC manages the operations workforce and therefore bears industrial relations risk (after the Initial Operating Period). Under the DBOM and the BOO, industrial relations risk is with the Operator.

6.5 Escalation risk

The EMRC can expect the input costs to escalate over the operations phase. Under the D&C, as the Operator of the RRF, the EMRC bears the actual risk of increased costs after it has assumed responsibility for operating and maintaining the facility.

Under the DBOM and the BOO, it is possible to negotiate the payment formula to obtain some sharing of the risk of escalation through the use of agreed indices. To the extent that an index increases less than actual cost, the risk of escalation is passed to the Operator and to the extent that an index increases more than actual cost, the risk of escalation is passed to the EMRC. Movement away from market is managed by periodic market resets, which can be capped so that the percentage increase or decrease is not disproportionately large. It is also possible to agree bands within which the Operator will take the risk of positive and negative escalation and for the EMRC to take the risk of escalation outside of those bands. All of these mechanisms are aimed at providing greater certainty around cost increases in line with escalation.

6.6 Comparison of the Operation and Maintenance Options

The following **Table 6-1** summarises the major differences between EMRC operating and maintaining the RRF and it being operated and maintained by a contractor.

Table 6-1: Comparison of Operation and Maintenance Options

Issue	EMRC Operate and Maintain (D&C)	Contractor Operate and Maintain (DBOM and BOO)
Defects	Council	Operator
Operation	Council	Operator
Whole of life cost	Council	Operator
Industrial relations	Council/Contractor	Operator
Escalation	Council	Council, within boundaries, then Operator

7 Summary and Conclusions

The following are the key findings of this study of the ownership and operating / maintenance options for the RRF project.

7.1 Characteristics of the Project

In determining the preferred project structure, the following project characteristics need to be noted:

- There are a number of key elements, or work packages of the project that are diverse and will need to be undertaken by different parties, as described in **Section 2**;
- The interface between these packages is likely to be complex to manage in some instances. Examples are the interfaces between the provision of the technology, design and documentation and construction as well as the interface between operation and maintenance of the RRF and the marketing and sale of the products (particularly compost);
- The number of packages adds to the complexity of managing the interfaces; and
- Some of the packages require specialist skills and knowledge that are likely to be provided by specialist organisations.

Financing of the facility is a key component of ownership of the facility and is now (post GFC) best undertaken by the EMRC rather than the contractor.

A large portion of the engineering risks of the project are addressed during the design, construction, commissioning and Initial Operating Periods of the project. A competent and experienced contractor would be better able to undertake these project elements than the EMRC due to their skills and experience in managing the risks associated with these tasks on similar projects. Also, there is a strong case for one contractor having responsibility for all of these elements of the project due to the complex nature of the interfaces between the elements.

A competent and experienced Operator should also be better placed to operate and maintain the RRF than the EMRC. This would particularly be the case if the contractor was also the Operator of other facilities for other clients. This would provide a pool of experienced staff and expertise that could potentially be called upon as of required by the Contractor.

If the EMRC chose to operate the RRF, then it should do so after the facility has been successfully commissioned and has been operating for a period (approximately 2 years) to demonstrate that it can meet the required performance standards. Following this initial period, the operating risks should have diminished significantly. However, the whole of life maintenance risks will not necessarily have diminished as most of the major refurbishment tasks will be required after this initial period.

7.2 Ownership of the RRF

There are a number of risks that reside with the owner of most assets, such as the RRF. These include the provision of capital funding, risks associated with unexpected events that are not the responsibility of either the owner or the Operator, insurance and dealing with the asset. Some of these risks can be partially transferred to the Operator of the facility, but most reside with the owner.

The current financial market has removed some of the advantages that existed for private ownership of these types of assets, through higher costs of financing and the introduction of significant refinancing costs.

If the EMRC was to own the RRF it would have greater flexibility to deal with it, for example by introducing upgrades such as improving the technology or increasing its capacity.

The effects on the Member Council's credit rating and ability to borrow due to guarantees from those Councils for the financial obligations of the EMRC under a BOO contract is now the same as for the guarantees that would have to be provided for direct borrowing by the EMRC (such as under a D&C or a DBOM contract). This has removed an important point of differentiation between contractor ownership of the RRF (BOO contracts) and EMRC ownership (D&C or DBOM contracts).

This report has found that the preferred option relating to ownership is for the EMRC to finance and own the RRF and to have the design and construction undertaken by a competent contractor.

7.3 Operation and Maintenance of the RRF

There are a number of risks associated with the operation and maintenance of the RRF that would reside predominantly with the Operator, be it the EMRC or a contractor. These include defects, whole of life operating costs, cost overruns, industrial relations and escalation risks.

The Operator of the RRF is normally responsible for defects that occur after the defects liability period has expired unless they can be proven to be a defect in the construction of the RRF and the RRF is not fit for the purpose for which it was constructed. If the EMRC was to operate the RRF, then once it took on this responsibility, it would be difficult to attribute responsibility as between design/construction and operation/maintenance.

There are therefore advantages in the contractor being responsible for the design/construction of the RRF as well as its operation/maintenance. This eliminates a number of important project interfaces that, in themselves introduce risks to the project. The NMWDA experience is that the DBOM model leads to more efficient and better operations, but the trade off is a higher capital cost.

As noted in Section 7.1 above, a competent and experienced Operator should also be better placed to operate and maintain the RRF than the EMRC due to their access to more experienced resources and their greater experience in undertaking these types of projects. Under a D&C the EMRC experience would be gained from the training provided by the licensor and experience gained by working alongside the licensor/contractor during the initial operating period.

This report has found that the preferred option relating to operation and maintenance of the RRF is for the EMRC to contract this responsibility to the same contractor that undertakes the design and construction of the RRF.

7.4 Preferred Contract Model

The contract model that provides for the EMRC to own the RRF and then to contract out the design, construction, operation and maintenance of the RRF, as concluded above, is the DBOM model. This model provides for one party (the contractor) to be responsible for the most of the whole of life risks of the RRF, and so provides the EMRC and its Member Councils with greater certainty of future costs. It also minimises the interface risks borne by the EMRC and places them with the contractor, who is

better placed to manage those risks. The contractor's greater ability to manage the project risks should ensure that the whole of life costs are also minimised.

This report has found that the preferred contract model for the EMRC RRF project is the Design, Build Operate and Maintain model.

8 Recommendation

It is recommended that the EMRC resolves to adopt the Design, Build Operate and Maintain contract model for the RRF Project and that the term of the operating period of the contract be 10 years, with the option to extend the contract for a period or periods up to the end of the economic life of the RRF.

Appendix A

Term Sheets for Contract Models

Term Sheet – Design, Build, Operate and Maintain Contract Model

1 Introduction

1.1 Form of Contract

The Design, Build, Operate and Maintain Contract (**Contract**) to be entered into between the parties in respect of the design, construction, operation and maintenance of the waste processing facility (**RRF**) to be located at Red Hill, Lot 12, 1204 Toodyay Road, Red Hill, Western Australia¹ (**Project**) will comprise provisions which apply during:

- (a) the design and construction phase of the Project (**D&C Phase**) as set out in section 2.1 below, during which the Contractor will design and construct the RRF (by itself entering into a subcontract with a builder); and
- (b) the operation and maintenance phase of the Project (**O&M Phase**) as set out in section 2.2 below, during which the Contractor will operate and maintenance the RRF.

This term sheet is a summary of the key contractual terms of the Contract and is not a complete summary of all of the contractual terms of the Contract.

1.2 Parties

The Contract will be entered into by the following parties:

- (a) the Eastern Metropolitan Regional Council (**Principal**); and
- (b) the successful proponent for the Project (**Contractor**).

It is the Principal's preference that the Contractor that enters into the Contract is a company of substance. However, this is not mandated by the Request for Proposals. If the Contractor is a special purpose vehicle, certain additional requirements will be imposed on the Contractor as set out in this term sheet below.

2 Contractual Terms

The following is a list of the key contractual terms of the Contract.

2.1 D&C Phase

The following key contractual terms will apply during the D&C Phase of the Project.

¹ The Principal's preferred site is Red Hill, Lot 12, 1204 Toodyay Road, Red Hill, Western Australia.

No.	Section	Contractual term
1	Conditions precedent	<p>The Contractor must satisfy the following conditions precedent prior to the Contract coming into operation:</p> <ul style="list-style-type: none"> • evidence that all insurance required during the D&C Phase are in place; • evidence that all authorisations necessary for the construction of the RRF have been obtained (except for the environmental approval required under Part IV of the <i>Environmental Protection Act 1986 (WA)</i> and all zoning approvals for the Project, which will be obtained by the Principal); • execution of the project agreements; • (if the Contractor is a special purpose vehicle) evidence that the company structure of the Contractor is in a form and substance satisfactory to the Principal; • evidence that key subcontracts (including the building subcontract to be entered into by the Contractor) have been executed and are in full force and effect and conform to the terms sheets provided by the Contractor with the proposal; and • evidence that all arrangements in respect of intellectual property for the Project (including the technology licence for the Project) are in place, to the satisfaction of the Principal. <p>The Principal must obtain the approval of the WA Treasury in respect of the Principal's financing arrangements for the Project as a condition precedent to the Contract coming into operation.</p>
2	Design and construction obligations	<p>The Contractor will be solely responsible for:</p> <ul style="list-style-type: none"> • the design, engineering, procurement, construction, testing and commissioning of the RRF; • the supply of all things necessary to undertake the Works and to perform the Contractor's obligations during the D&C Phase; • achieving Practical Completion of the RRF on or before the Date for Practical Completion; and • the operation of the RRF for an initial operating period of a minimum of one year during which it must be shown that the RRF operates in accordance with the minimum requirements and KPIs set out in the Contract. <p>The RRF must have an effective treatment capacity of:</p> <ul style="list-style-type: none"> • 60,000 tonnes per year for Anaerobic Digestion technologies; and • 100,000 tonnes per year for Gasification, Pyrolysis,

No.	Section	Contractual term
		<p>Plasma and Incineration / Combustion technologies, (Effective Treatment Capacity).²</p> <p>The Contractor must undertake the Contractor's design obligations and produce the design documents to comply with the Principal's requirements for the design and construction of the RRF (Principal's Requirements).</p> <p>The Superintendent must have a right of approval of the design documents.</p> <p>The Superintendent may direct the Contractor to vary the design documents. Any direction to vary the design documents will constitute a variation to the Works, unless the design documents, prior to the variation being directed, do not comply with the Principal's Requirements.</p>
3	Payment	<p>The Contract Sum for the design and construction of the Works during the D&C Phase will be a fixed lump sum amount.</p> <p>The Contractor will be paid by:</p> <ul style="list-style-type: none"> • monthly progress payments for the work performed by the Contractor during each month; and • milestone payments for completion of specified components of the Works in accordance with the Contractor's Program. <p>The Contract Sum will only be adjusted for variations to the Works. There will be no adjustments to the Contract Sum for any other reason, including cost escalation or rise and fall. There are no provisional sums.</p>
4	Security	<p>The Principal will retain part of the Contract Sum as retention moneys to secure the performance of the Contractor's obligations during the D&C Phase (including as part of the Initial Operating Period (refer to Item 19 below)). Any interest earned on the retention moneys will be owned by the Contractor (less the amount of any insurance premiums paid by the Principal in respect of the bank account for the retention monies).</p> <p>In addition, the Contractor will be required to provide the Principal with a performance security in the form of an unconditional and irrevocable bank guarantee for the duration of the D&C Phase. The amount of the performance security required to be provided by the Contractor during the D&C Phase will increase at the commencement of the Initial Operating Period.</p> <p>The value of the performance security must be maintained by the Contractor at its full amount as required by the Contract and must be reinstated by the Contractor upon the making of any call by the Principal on the performance security.</p>

² Proponents are to base pricing of their proposed RRFs on the initial Effective Treatment Capacity (i.e. 60,000 tonnes per year for Anaerobic Digestion technologies and 100,000 tonnes per year for Gasification, Pyrolysis, Plasma and Incineration / Combustion technologies).

No.	Section	Contractual term
		The Contractor will be required to provide the Principal with a parent company guarantee for the performance of its obligations during the D&C Phase. This will only be required if the Contractor is a special purpose vehicle.
5	Assignment and subcontracting	<p>Each party must obtain the other party's prior approval to any assignment of its rights, benefits or interest under the Contract to a third party.</p> <p>The Contractor must obtain the Superintendent's approval prior to entering into any key subcontracts in respect of the Works except for those key subcontracts executed in satisfaction of the conditions precedent.</p> <p>The Contractor must not terminate or amend key subcontracts without the Principal's consent.</p>
6	Conditions of Site	<p>All risks associated with the pre-existing conditions of the Site (as identified in the baseline study of the Site to be procured by the Principal and provided to the Contractor prior to the date of the Contract) and native title will be the responsibility of the Principal under the Contract. During the D&C Phase, the Contractor is entitled to extensions of time as the Superintendent deems appropriate and any delay costs reasonably incurred by the Contractor if those risks occur.</p> <p>The Contractor will be responsible for the risks associated with all of the other physical conditions and characteristics of the Site during the D&C Phase and will not be entitled to any adjustment to the Contract Sum or extension of time if those risks occur.</p>
7	Compliance	<p>The Principal must obtain the environment approval under Part IV of the <i>Environmental Protection Act 1986 (WA)</i> and all zoning approvals for the Project.</p> <p>The Contractor must obtain and maintain all other authorisations for the Project, including the development approval, the building licence, the works approval and the operating licence for the Project, for as long as is necessary to undertake the Contractor's obligations under the Contract.</p> <p>Upon any early termination of the Contract, the Contractor must do all things necessary to transfer any authorisations for the Project to the Principal (including the operating licence for the Project).</p> <p>The Contractor must comply with occupational health and safety laws and requirements of the Principal.</p>
8	Change in Law	During the D&C Phase, the Contractor will not be entitled to an adjustment to the Contract Sum or extension of time as a result of a Change in Law after the date of the Contract or any discrepancy between the Contract and a Law.
9	Intellectual property rights	The intellectual property rights in respect of the design documents must be transferred to the Principal and the Principal will grant to the Contractor an irrevocable licence to use the design documents for the Project.

No.	Section	Contractual term
10	Water / Power / Utilities	The required utility services will be made available by the Principal to the boundary of the chosen site for the RRF. The Contractor is solely responsible for the design and construction (and operation and maintenance) of all of the interfaces with the utility services.
11	Care of Works and excepted risk	<p>The Contractor will be responsible for the care of the Works up to the Date of Practical Completion.</p> <p>Up to the Date of Practical Completion, the Principal will accept responsibility for certain categories of risks which are beyond the control of the Contractor and which have caused loss or damage to the Works, being:</p> <ul style="list-style-type: none"> • breach of Contract by the Principal or any negligent act or omission of the Principal, the Superintendent or the employees, consultants or agents of the Principal; and • any force majeure event.
12	Appointment of Superintendent	<p>The Principal will appoint a Superintendent to administer the Contract and supervise and inspect the Works.</p> <p>The Superintendent's role will include representing the Principal in respect of certain matters during the D&C Phase and performing independent certifying functions under the Contract, including assessing the Contractor's entitlement to any extension of time under the Contract and assessing payment claims made by the Contractor during the D&C Phase.</p>
13	Indemnity and limits on liability	<p>The Contractor will provide the usual indemnities to the Principal.</p> <p>Each party's liability to the other party under the Contract will be limited.</p> <p>The recovery of consequential loss under the Contract will be excluded except to the extent recoverable under insurance.</p> <p>This position will apply during both the D&C Phase and the O&M Phase.</p>
14	Insurances	<p>The Contractor must maintain such insurance policies and coverage for the design and construction of the Works as is required by law and good utility practice. The insurance requirements will be set out in more detail in the Contract.</p> <p>Insurance proceeds received must be applied to repair damage caused to the Works by the event for which insurance was claimed.</p>
15	Site and inspection	<p>The Principal will own the Site.</p> <p>The Principal will grant the Contractor a licence to access the Site for such use and control as is necessary to enable the Contractor to execute the Works during the D&C Phase, and, subsequently, to operate and maintain the RRF during the O&M Phase. The Contractor will have control of the Site during both the D&C Phase and the O&M Phase.</p> <p>The Principal is entitled to inspect the construction of the</p>

No.	Section	Contractual term
		<p>Works at any time on notice to the Contractor.</p> <p>The Contractor will be responsible for making arrangements for any access to or use of any adjoining site or property which the Contractor may require in the performance of the Works (including obtaining any necessary easements). If required by the Site, permanent site access arrangements must be made by the Contractor.</p>
16	Suspension of the Works	<p>The Superintendent will be entitled to suspend the Works:</p> <ul style="list-style-type: none"> • because of an act or omission of either party; • for the protection or safety of any person or property; or • to comply with an order of a Court. <p>The Contractor will not be entitled to suspend the Works without the prior approval of the Principal.</p> <p>All costs incurred by the Contractor during a period of suspension (other than those costs reasonably and actually incurred by the Contractor when the works are suspended due to an excepted risk referred to in Item 11 above) will be borne by the Contractor.</p>
17	Practical Completion and extensions of time	<p>When the Superintendent is of the opinion that Practical Completion of the RRF has been achieved, the Superintendent may issue a Certificate of Practical Completion to the Contractor.</p> <p>During the D&C Phase, the Contractor will be entitled to an extension of time to the Date for Practical Completion in respect of the following causes of delay:</p> <ul style="list-style-type: none"> • breach of Contract by the Principal or any negligent act or omission of the Principal, the Superintendent or the employees, consultants or agents of the Principal; • any native title issues in respect of the Project; • any pre-existing contamination on the Site which is identified in the baseline study; • any force majeure event under the Contract; and • any variation requested by the Principal which the Superintendent determines necessitates an extension of time. <p>In addition, the Principal will be responsible for the delay costs reasonably incurred by the Contractor for any cause of delay which entitles the Contractor to an extension of time, except for delays arising from any force majeure event or a variation requested by the Contractor, which will be at the Contractor's cost.</p> <p>Following Practical Completion:</p> <ul style="list-style-type: none"> • the Initial Operating Period will commence (refer to Item 19 below); and • the Contractor must complete any punch-list items in respect of the Works.
18	Liquidated damages and	Liquidated damages will be payable by the Contractor if the

No.	Section	Contractual term
	early completion bonus	<p>Contractor fails to achieve Practical Completion of the RRF on or before the Date for Practical Completion and the delay is not otherwise excused under the Contract.</p> <p>A failure by the Contractor to achieve Practical Completion of the RRF within a specified period of time after the Date for Practical Completion will constitute a default by the Contractor under the Contract.</p> <p>The Contractor will not be entitled to an early completion bonus payment for early achievement of Practical Completion of the RRF.</p>
19	Initial Operating Period	<p>Following Practical Completion, there will be an initial operating period of a minimum of one year (Initial Operating Period), during which it must be shown that the RRF operates in accordance with the minimum requirements and KPIs set out in the Contract.</p> <p>The requirements of the Initial Operating Period (including the KPIs) and the fee payable during the Initial Operating Period will be set out in the Contract. Failure to achieve the requirements of the Initial Operating Period within the timeframe set out in the Contract will constitute a default by the Contractor under the Contract.</p>
20	Variations	<p>The Principal has the right to direct variations and the Contractor must comply with any direction for a variation.</p> <p>Variations to the Works will be valued in accordance with a schedule of rates set out in the Contract.</p>
21	Force majeure	<p>A party is excused from performance of its obligations under the Contract during the D&C Phase to the extent that it is unable to perform due to a force majeure event.</p> <p>In addition, if the Contractor is delayed in achieving Practical Completion as a result of the force majeure event, the Contractor will be entitled to an extension of time (but not delay costs).</p>
22	Default and termination	<p>The events of default of the Contractor during the D&C Phase will be set out in the Contract and will include events of default in respect of:</p> <ul style="list-style-type: none"> • failing to achieve a milestone in the Contractor's Program by an agreed date (including failing to achieve Practical Completion within a specified period of time after the Date for Practical Completion); • failing to achieve the requirements of the Initial Operating Period within the timeframe set out in the Contract; • failure to comply with intellectual property and confidentiality obligations; failure to obtain and maintain all necessary authorisations and • the Contractor's improper use of the Site. <p>If the Contractor commits a default, the Principal will be entitled to take the whole or any part of the Works out of the hands of the Contractor, terminate the Contract or</p>

No.	Section	Contractual term
		<p>suspend payments to the Contractor.</p> <p>The events of default of the Principal during the D&C Phase will be set out in the Contract. Failure by the Principal to make a payment due during the D&C Phase will only constitute a default of the Principal if the payment is not the subject of a dispute between the parties.</p> <p>If the Principal commits a default, the Contractor will be entitled to suspend the whole or any part of the Works for as long as the default continues and recover from the Principal any damages incurred by the Contractor by reason of the suspension. The Contractor will not be entitled to terminate the Contract.</p> <p>During the D&C Phase, the Contract may be terminated due to:</p> <ul style="list-style-type: none"> • a default of the Principal; • a default of the Contractor; • exercise of the Principal's right to terminate for convenience; or • a prolonged force majeure event.
23	Warranties	<p>The Contractor must give the usual warranties, including a warranty as to its and its subcontractors' skill and experience.</p> <p>In addition, the Contractor must give the Principal a 'whole of design life' warranty in respect of the RRF.</p>
24	Technology licence	<p>The technology licence for the Project (including operation of the RRF during the Initial Operating Period and the O&M Phase) must include technical support from the licensor to the Contractor during the period of the licence.</p>
25	Project committee	<p>There will be a project committee to oversee the Project consisting of an independent chairperson and an equal number of senior representatives of the Principal and the Contractor.</p> <p>Decisions of the project committee are recommendations to the parties, but are non-binding.</p>
26	Dispute resolution	<p>Each party must notify the other party of any matter which may amount to or result in an issue between the parties in relation to the Contract or the Project or which may potentially lead to a dispute under the Contract and, prior to either party giving a notice of dispute under the Contract, the project committee must discuss the matter and provide a recommendation to the parties in respect of the matter.</p> <p>The dispute resolution procedure under the Contract will be as follows:</p> <ul style="list-style-type: none"> • following the giving of a notice of dispute under the Contract, the parties must confer and attempt to resolve the dispute; • if the dispute is not resolved by the conferral of the parties, either party may refer the dispute to mediation;

No.	Section	Contractual term
		<p>and</p> <ul style="list-style-type: none"> if the dispute is not resolved by mediation, the Principal may elect to either refer the dispute to arbitration or commence legal proceedings in respect of the dispute.

2.2 O&M Phase

The following additional key contractual terms will apply during the O&M Phase of the Project.

No.	Subject	Contractual Term
1	Operation and maintenance	<p>The Contractor is solely responsible for the operation and maintenance of the RRF until the end of the O&M Phase.</p> <p>The RRF must be operated and maintained in accordance with:</p> <ul style="list-style-type: none"> good utility practice; all laws and authorisations; the KPIs; all plans prepared by the Contractor for the operation and maintenance of the RRF (and approved by the Principal); the requirements of third party providers of utilities; and an agreed operations and maintenance manual. <p>With the exception of processible waste, the Contractor must acquire all inputs for the operation and maintenance of the RRF.</p>
2	Duration of O&M Phase	<p>The initial duration of the O&M Phase of the Project will be 10 years, with options to the Principal to extend the O&M Phase by 5 year intervals up to the expiration of the design life of the RRF.</p> <p>The Contract will include a performance assessment mechanism under which the Contractor's performance during the O&M Phase will be assessed. This will be taken into account by the Principal in exercising its right to extend the O&M Phase.</p>
3	Payment	<p>The Contractor will be paid a service fee, which comprise:</p> <ul style="list-style-type: none"> a fixed operating cost component; and a variable operating cost component, <p>(Fee).</p> <p>Payment will be monthly. The method of calculation of the Fee will be set out in the Contract.</p> <p>The Fee is the Contractor's only entitlement to payment for the services performed by the Contractor during the O&M Phase.</p>
4	Security	<p>The Contractor must provide the Principal with a performance security for the duration of the O&M Phase in the form of an unconditional and irrevocable bank guarantee.</p>

No.	Subject	Contractual Term
		<p>The amount of the performance security must be reinstated by the Contractor upon the making of any call by the Principal on the performance security.</p> <p>The Contractor must provide the Principal with a parent company guarantee in respect of the performance by the Contractor of its obligations during the O&M Phase. This will only be required if the Contractor is a special purpose vehicle.</p>
5	Assignment and subcontracting	<p>Each party must obtain the other party's prior approval to any assignment of its rights, benefits or interest under the Contract to a third party.</p> <p>The Contractor must obtain the Principal's approval prior to entering into any key subcontracts in respect of its obligations under the O&M Phase.</p> <p>The Contractor must not terminate or amend key subcontracts without the Principal's consent.</p>
6	Change in Law	<p>Change in Law does not excuse the Contractor from performing its obligations during the O&M Phase.</p> <p>The parties will discuss any amendments required to the Contract due to a significant Change in Law that occurs during the O&M Phase.</p>
7	Title to RRF	<p>The Principal has title to the RRF at all times during the O&M Phase (including title to any Products as described in Item 16 below).</p>
8	Insurances	<p>The Principal must maintain insurance in respect of any loss or damage to the RRF. The Contractor must maintain such other insurance policies and coverage for the operation and maintenance of the RRF as is required by law and good utility practice. The insurance requirements will be set out in more detail in the Contract.</p>
9	KPIs	<p>The performance of the Contractor during the O&M Phase will be measured against the KPIs.</p> <p>The Fee will be abated if the Contractor fails to achieve any or all of the KPIs.</p> <p>If the Contractor persistently fails to achieve any or all of the KPIs, it is a default of the Contractor under the Contract.</p>
10	Testing	<p>The Contractor must test the RRF in accordance with the monitoring and testing plan (prepared by the Contractor for the Project and approved by the Principal).</p>
11	Community engagement	<p>The Contractor must comply with the Principal's obligations to the community for the Project (which will be further described in the Contract).</p>
12	Delivery of processible waste	<p>The Principal will deliver processible waste to the RRF up to the Effective Treatment Capacity (refer to item 2 in section 2.1 above).</p> <p>Waste will be weighed on a weighbridge which will be conclusive evidence of the waste delivered.</p> <p>The Contractor must ensure that the RRF is able to receive</p>

No.	Subject	Contractual Term
		<p>processable waste at the specified hours of operation.</p> <p>The Contractor must ensure that the Effective Treatment Capacity of the RRF is made available to the Principal each year of the O&M Phase.</p> <p>The waste that will be delivered to the RRF (i.e. processible waste) is waste which is collected by or on behalf of the Principal or its constituent councils from bins placed by occupiers of residential premises situated within the districts of the constituent councils from time to time, but not including:</p> <ul style="list-style-type: none"> • waste which is collected from those occupiers as part of a recycling service; or • bulk waste which is collected from those occupiers (not in bins) on a semi-annual or annual basis.
13	Quality of processible waste	<p>The Principal gives no representation or guarantee in respect of the quality, constitution or level of compaction of processible waste. However, if there is a material and permanent change in waste composition that can be demonstrated and it prevents the Contractor from meeting the KPIs, the Contractor may request a variation.</p> <p>Treatment and disposal of processible waste is at the Contractor's risk.</p> <p>The Contractor is responsible for disposing of any hazardous waste delivered to the RRF in accordance with all laws. The Contractor must separate the hazardous waste from the processible waste and dispose of it at the Principal's waste management facility at Red Hill, Lot 12, 1204 Toodyay Road, Red Hill, Western Australia. Disposal of hazardous waste will be at no cost to the Contractor.</p>
14	Treatment of processible waste	<p>The Contractor must accept and dispose of all processible waste delivered to the RRF by or on behalf of the Principal up to a maximum daily amount of processible waste of 260 tonnes per day (for an RRF with an Effective Treatment Capacity of 60,000 tonnes per year) and 430 tonnes per day (for an RRF with an Effective Treatment Capacity of 100,000 tonnes per year).</p> <p>The Contractor must not accept waste from third parties for processing at the RRF.</p> <p>The Contractor must process processible waste in accordance with the Contract.</p>
15	Ownership and title in the waste	<p>Ownership and title in the processible waste (and any residue and Products from the processible waste) will remain with the Principal.</p>
16	Products	<p>The Contractor is required to recover products from processible waste processed at the RRF (Products) in accordance with the Contract. An agreed quantity of Products must be recovered per annum and must meet KPIs as to quality.</p>
17	Disposal of residue	<p>Any residue produced as part of the treatment process and waste received at the RRF which is not processed in</p>

No.	Subject	Contractual Term
		accordance with the Contract must be disposed of by the Contractor at the Principal's waste management facility at Red Hill, Lot 12, 1204 Toodyay Road, Red Hill, Western Australia at member council rates. Any residue will be taken into account when measuring the Contractor's performance against the KPI for waste diversion from landfill.
18	Variations	<p>The Principal has the right to direct variations and the Contractor must comply with any direction for a variation.</p> <p>There will be an agreed process for adjusting the Fee following a variation directed by the Principal or a variation agreed between the parties.</p>
19	Force majeure	A party is excused from performance of its obligations under the Contract during the O&M Phase to the extent that it is unable to perform due to a force majeure event.
20	Monitoring and records	<p>The Contract will be based on an open book policy.</p> <p>The Contractor must maintain the records required by the Contract and provide the Principal with the documents in the manner described in the Contract.</p>
21	Default and termination	<p>The events of default of the Contractor during the O&M Phase will be set out in the Contract.</p> <p>If the Contractor commits a default, the Principal will be entitled to step in and operate and maintain the RRF itself (refer to Item 22 below), terminate the Contract or suspend payments to the Contractor.</p> <p>The events of default of the Principal during the O&M Phase will be set out in the Contract. Failure by the Principal to make a payment due during the O&M Phase will only constitute a default of the Principal if the payment is not the subject of a dispute between the parties.</p> <p>If the Principal commits a default, the Contractor will be entitled to suspend the whole or any part of the services performed during the O&M Phase for as long as the default continues and recover from the Principal any damages incurred by the Contractor by reason of the suspension. The Contractor will not be entitled to terminate the Contract.</p> <p>During the O&M Phase, the Contract may be terminated due to:</p> <ul style="list-style-type: none"> • a default of the Principal; • a default of the Contractor; • exercise of the Principal's right to terminate for convenience; • a prolonged force majeure event; or • expiration of the 20 year O&M phase.
22	Step in	<p>During the O&M Phase, the Principal requires step in rights for the Project where, in the Principal's reasonable opinion, a default of the Contractor (including an insolvency event) has occurred or there is a real and immediate risk that:</p> <ul style="list-style-type: none"> • the operating licence for the RRF will be revoked or not

No.	Subject	Contractual Term
		<p>granted;</p> <ul style="list-style-type: none"> • action will be taken by a governmental agency to require the RRF to cease operation; • public health or public safety associated with the RRF or the premises on which it is situated will be threatened; or • an event will occur that may damage the RRF so that there would be a substantial reduction of the capacity of the RRF.
23	Handover arrangements	At the expiration of the O&M Phase, the Contractor must hand over the RRF to the Principal in accordance with the handover condition set out in the Contract.



Item 10 continued

Recording of the recommendations passed behind closed doors, namely:

10.1 RESOURCE RECOVERY FACILITY - ACCEPTABLE TENDERERS

REFERENCE: COMMITTEES-12150

RRC RECOMMENDATION(S)

MOVED CR PULE

SECONDED CR LINDSEY

That:

1. Council notes the advice from SITA Environmental Solutions and WSN Environmental Solutions of their intention to withdraw from the tender process for the EMRC Resource Recovery Facility.
2. The list of Acceptable Tenderers be amended to remove SITA Environmental Solutions and WSN Environmental Solutions.
3. SITA Environmental Solutions be advised of Council's acknowledgement of both SITA Environmental Solutions and WSN Environmental Solution's withdrawal from the EMRC Resource Recovery Facility tender process.
4. The report and attachments remain confidential and be certified by the Chairman and the Chief Executive Officer.

CARRIED UNANIMOUSLY

11 GENERAL BUSINESS

The Manager Project Development advised that the Waste & Recycle Conference 2011 would be held in September so a report item would be submitted to the next RRC meeting.

12 FUTURE MEETINGS OF THE RESOURCE RECOVERY COMMITTEE

The next meeting of the Resource Recovery Committee will be held on **Thursday, 7 July 2011 (if required)** at the EMRC Administration Office, 1st Floor, Ascot Place, 226 Great Eastern Highway, Belmont WA 6104 commencing at 5.00pm.

Future Meetings 2011

Thursday	7 July (if required)	at	EMRC Administration Office
Thursday	4 August	at	EMRC Administration Office
Thursday	8 September (if required)	at	EMRC Administration Office
Thursday	6 October	at	EMRC Administration Office
Thursday	17 November (if required)	at	EMRC Administration Office

13 DECLARATION OF CLOSURE OF MEETING

There being no further business, the Chairman closed the meeting at 6.30pm.