



MINUTES

CERTIFICATION OF CONFIRMATION OF COMMITTEE MEETING MINUTES

6 OCTOBER 2011

I, Cr Cuccaro, hereby certify that the following minutes pages 1 to 24 of the Meeting of **RESOURCE RECOVERY COMMITTEE** held on 6 October 2011 were confirmed at a meeting of the Committee held on 17 November 2011.

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

Signature

Cr Tony Cuccaro

Person presiding at the Committee Meeting held on 17 November 2011

RESOURCE RECOVERY COMMITTEE

MINUTES

6 October 2011

(REF: COMMITTEES-13010)

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, 6 October 2011**. The meeting commenced at 5.00pm.

TABLE OF CONTENTS

1	DECLARATION OF OPENING AND ANNOUNCEMENT OF VISITORS	1
2	ATTENDANCE, APOLOGIES AND LEAVE OF ABSENCE PREVIOUSLY APPROVED	1
3	DISCLOSURE OF INTERESTS	1
4	ANNOUNCEMENT BY THE CHAIRMAN OR PERSON PRESIDING WITHOUT DISCUSSION	1
5	CONFIRMATION OF MINUTES OF PREVIOUS MEETINGS	2
	<i>5.1 MINUTES OF THE RESOURCE RECOVERY COMMITTEE MEETING HELD ON 4 AUGUST 2011 (Ref: Committees-12738)</i>	
6	PRESENTATIONS	2
7	ANNOUNCEMENT OF CONFIDENTIAL MATTERS FOR WHICH THE MEETING MAY BE CLOSED TO THE PUBLIC	2
8	BUSINESS NOT DEALT WITH FROM A PREVIOUS MEETING	2
9	REPORTS OF OFFICERS	3
	<i>9.1 RESOURCE RECOVERY PROJECT UPDATE (Ref: Committees-13114)</i>	3
	<i>9.2 REPORT ON WASTE AND RECYCLE CONFERENCE 2011 (Ref: Committees-13142)</i>	15
10	CONFIDENTIAL MATTERS FOR WHICH THE MEETING MAY BE CLOSED TO THE PUBLIC	24
11	GENERAL BUSINESS	24
12	FUTURE MEETINGS OF THE RESOURCE RECOVERY COMMITTEE	24
13	DECLARATION OF CLOSURE OF MEETING	24



1 DECLARATION OF OPENING AND ANNOUNCEMENT OF VISITORS

The Chairman opened the meeting at 5.00pm.

2 ATTENDANCE, APOLOGIES AND LEAVE OF ABSENCE PREVIOUSLY APPROVED

Committee Members

Cr Tony Cuccaro (Chairman)	EMRC Member	Shire of Mundaring
Cr Gerry Pule	EMRC Member	Town of Bassendean
Cr Alan Radford (<i>from 5.39pm</i>)	EMRC Member	City of Bayswater
Cr Glenys Godfrey	EMRC Member	City of Belmont
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 David Färdig	EMRC Member	City of Swan
Cr Frank Lindsey (Deputy Chairman)	EMRC Member	Shire of Kalamunda
Cr Charlie Zannino	EMRC Member	City of Swan

Deputy Committee Members - Observers

Cr Graham Pittaway	EMRC Member	City of Bayswater
--------------------	-------------	-------------------

EMRC Officers

Mr Stephen Fitzpatrick	Manager Project Development
Mr Hua Jer Liew	Director Corporate Services
Ms Annie Hughes-d'Aeth	Administration Support Officer (Minutes)

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 4 AUGUST 2011

That the Minutes of the Resource Recovery Committee meeting held on 4 August 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 4 AUGUST 2011, WHICH HAVE BEEN DISTRIBUTED, BE CONFIRMED.

CARRIED UNANIMOUSLY

6 PRESENTATIONS

Nil

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

Nil

8 BUSINESS NOT DEALT WITH FROM A PREVIOUS MEETING

Nil



9 REPORTS OF OFFICERS

9.1 RESOURCE RECOVERY PROJECT UPDATE

REFERENCE: COMMITTEES-13114

PURPOSE OF REPORT

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

KEY ISSUES AND RECOMMENDATION(S)

- The draft Environmental Scoping Document (ESD) has been amended and resubmitted following the meeting with the EPA and discussions with the Office of the EPA.
- Air quality baseline monitoring at Red Hill Waste Management Facility concluded on 31 July 2011 and a draft report has been received.
- Gathering of emissions data from acceptable tenderers for the Public Environmental Review (PER) modelling is mostly completed.
- Modelling of emissions from the technology options has progressed and draft results are being reviewed.
- The PER timeline has been revised with a target date of release for public comment on 6 February 2012.
- Moltoni Energy have advised of a corporate restructure and change of company name to Phoenix Energy Australia Pty Ltd.
- Clarification is provided on gasification technology and what this class of thermal waste treatment technology includes.
- The Community Task Force (CTF) had its last formal meeting on 16 August 2011 to consider the draft Tender Evaluation Criteria and then on 30 August 2011 for a thank you dinner.
- An amendment to the Terms of Reference for the CTF is proposed to allow their continued input into the environmental approval phase of the project.

Recommendation(s)

That the:

1. Report be received.
2. The term of the Community Task Force be extended until December 2012 and the Terms of Reference for the EMRC Community Task Force be amended to reflect their role as a reference group during the environmental approval phase for the project and in the lead up to the calling of tenders for the Resource Recovery Facility.

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;



Item 9.1 continued

- 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.*
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."*



Item 9.1 continued

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.*
 - 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."

On 23 June 2011, Council resolved 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."*

On 18 August 2011, Council resolved:

"THAT COUNCIL CONFIRMS THE TECHNOLOGY OPTIONS FOR THE RESOURCE RECOVERY FACILITY AT RED HILL WASTE MANAGEMENT FACILITY AS ANAEROBIC DIGESTION AND GASIFICATION."



Item 9.1 continued

By way of explanation, the three 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.

Design, Build Operate and Maintain

Under a Design, Build Operate and Maintain (DBOM) contract delivery model, ownership of the RRF is with the EMRC but operation and maintenance is with the Operator. 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. The EMRC will be required to obtain its own funding for the RRF and will have to fund construction payments during the construction phase and service payments during the operation phase, usually by way of regular monthly payments linked to the amount of waste processed by 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.

Under this contract model, the project risks associated with the design, construction and performance of the RRF, are transferred to the Contractor whereas the ownership risk resides with the EMRC.

Acceptable Tenderers and Technologies

Acceptable Tenderers as at 1 September 2011	Technology Offered at EOI Stage
Energos AS	Gasification
Evergreen Energy Corporation Pty Ltd	Anaerobic Digestion
Amec Minproc Limited	Anaerobic Digestion and Combustion
Phoenix Energy	Combustion
Transpacific Cleanaway Limited	Anaerobic Digestion

REPORT

Environmental Scoping Document (ESD)

Following a meeting with the EPA on 21 July 2011, a letter was received from the EPA Chairman confirming the acceptability of the ESD subject to certain matters being addressed, as outlined in the letter, including the number of technologies being assessed, the timelines for the environmental impact assessment, pollution control equipment to be used for each technology, emissions being addressed and a comparison of the proposed technologies with landfill. The ESD has now been amended to address these issues and resubmitted for consideration and approval.



Item 9.1 continued

Public Environmental Review (PER) Development

The baseline air quality monitoring at Red Hill Waste Management Facility concluded on 31 July 2011 and a draft report on the results has been received. This information is now being used by consultants Synergetics Environmental Engineering in the modelling of emissions of air toxics from the technology options to assess potential impacts on ambient air quality and health.

The timeline to complete the PER process has been amended after discussion with the Office of the EPA and is as follows:

Details	Commencement	Completion	Target Timeframe
Submit draft PER to EPA	1 November 2011	1 November 2011	Milestone
Review by EPA	1 November 2011	13 December 2011	6 weeks
Revise PER & Release	13 December 2011	31 January 2012	6 weeks
Public Review	6 February 2012	30 March 2012	8 weeks
EPA provide summary of submissions	2 April 2012	20 April 2012	3 weeks
Proponent Response	23 April 2012	7 May 2012	2 weeks
EPA Bulletin Preparation/Assessment	7 May 2012	27 July 2012	12 weeks
Appeals Period	30 July 2012	10 August 2012	2 weeks
Minister Consideration	August 2012	November 2012	3 Months

Acceptable Tenderer Status

Moltoni Energy advised on 8 August 2011 that they had completed a corporate restructure as a result of which they have formally changed the company name to Phoenix Energy Australia Pty Ltd to take advantage of increasing interest in waste to energy. Mr Rob Moltoni has resigned from the company to concentrate on other ventures and Phoenix Energy Australia is majority owned and controlled by Peter Dyson, the Managing Director. The company ABN remains the same as before the change, which is a requirement under the EMRC tender process for acceptable tenderers to remain in the acceptable tender list.

Preferred Technology Options for RRF

Previous reports to Council have recommended that plasma technology only be considered in conjunction with one of the four thermal technology options (refer Council resolution of 20 May 2010 above). Further to the decision of Council at its meeting on 18 August 2011 to reduce the number of technology options to anaerobic digestion and gasification, clarification is provided on gasification technology and what this class of thermal waste treatment technology includes.

Juniper Consultancy Services in the UK have specialised in rating waste treatment technologies and they class the gasification of fuels including waste and biomass as all processes that result in the generation of a syngas (a mixture of hydrogen and carbon monoxide and other gases). This includes conventional gasification, plasma gasification and some pyrolysis processes. It does not include processes such as plasma combustion, plasma vitrification and plasma polishing or pyrolysis processes that result in the formation of a molten liquid product.

A plasma arc operates on principles similar to an arc-welding machine, where an electrical arc is struck between two electrodes. The high-energy arc creates high temperatures ranging from 3,000 degrees to 7,000 degrees Celsius. The "plasma" is highly ionized gas. The plasma arc is enclosed in a chamber. Waste material is fed into the chamber and the intense heat of the plasma breaks down organic molecules into their elemental atoms. In a carefully controlled process, these atoms recombine into a syngas which is then used to generate electricity or refined to make hydrogen or other chemicals.



Item 9.1 continued

Plasma gasification is a developing technology world-wide and has the potential benefits of a smaller footprint than a combustion facility and a superior environmental performance. Whilst EMRC officers have not visited a plasma gasification facility, there are examples in Japan and the US where it is used for MSW treatment either on its own or in conjunction with combustion technology.

So the key features of a gasification technology being considered for the RRF at Red Hill are:

- Process uses a starved or low air combustion system or a plasma arc to generate a syngas;
- Conversion of the syngas into waste heat by further oxidation or into a clean syngas;
- Heat recovery system using the steam cycle to generate electricity from waste heat or combustion of the syngas in a reciprocating engine to generate electricity; and
- Flue gas cleaning system to remove pollutants as fly ash.
- Bottom ash is recovered for metals recovery and possible use in road base.

Any of the preferred technology options considered for the RRF at Red Hill will have to be proven at a commercial scale of operation, details of which will be defined in the tender specification.

Community Engagement

The CTF had their final meeting on 16 August 2011 to consider the draft Tender Evaluation Criteria. The minutes of this meeting are attached (Attachment 1). A thank you dinner was held at the EMRC on 30 August where the EMRC Chairman presented members with a certificate of appreciation and a thank you gift.

All respondents to the draft CPA received an acknowledgement email and/or letter advising how the CTF had responded to their submission.

Although the CTF has now completed its objectives in relation to the original Terms of Reference, there is an ongoing role for the CTF while the project is in the environmental approval and implementation stage. This was discussed at the August meeting of the CTF and most of the community members present expressed an interest in continuing their role for another 12 months. It is proposed to amend the Terms of Reference for the CTF to allow meetings to be called as required for another 12 months. This will provide for briefings of the CTF on the outcomes of the environmental impact assessment at the draft PER stage (November 2011) and at the end of the public review period.

A September 2011 Resource Recovery Update advert was advertised in the community newspapers during September (refer Attachment 2). The EMRC website has also been updated to reflect completion of the Community Partnership Agreement and the reduction in the number of technologies for the RRF.

Member Council Loan Guarantee Analysis

A report will be prepared for the Resource Recovery Committee in the near future with input from the Western Australian Treasury Corporation to advise on the outcomes of analysis of member Council capacity to guarantee a loan to the EMRC.

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

All costs covered within this report are accounted for in the annual budget approved by Council.



Item 9.1 continued

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. Minutes of Community Task Force Meeting of 16 August 2011 (Ref: Committees-13151)
2. September 2011 Resource Recovery Update (Ref: Committees-13152)

VOTING REQUIREMENT

Simple Majority

RECOMMENDATION(S)

That the:

1. Report be received.
2. The term of the Community Task Force be extended until December 2012 and the Terms of Reference for the EMRC Community Task Force be amended to reflect their role as a reference group during the environmental approval phase for the project and in the lead up to the calling of tenders for the Resource Recovery Facility.

RRC RECOMMENDATION(S)

MOVED CR GODFREY

SECONDED CR PULE

That the:

1. Report be received.
2. The term of the Community Task Force be extended until December 2012 and the Terms of Reference for the EMRC Community Task Force be amended to reflect their role as a reference group during the environmental approval phase for the project and in the lead up to the calling of tenders for the Resource Recovery Facility.

CARRIED UNANIMOUSLY

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

Meeting Opened: 6:05pm

Meeting Chair: Joel Levin

Item	Issue/Topic	Discussion
1.	Previous Minutes	<p>Past action items were reviewed. All Items completed.</p> <ul style="list-style-type: none"> - Licence conditions for Water Management expected to cover a requirement for the operator to inform of any discharge (Section 72 of EP Act) - Map of new site options was provided to the group
2.	EMRC Update	<p>EMRC has posted the Q & A from the presentation by Mr Gerald Tetchner, a UK consultant and Professor Dongke Zhang from UWA on the web site.</p> <p>The EMRC is considering reducing the number of technology options submitted in the PER following a meeting with the EPA. A recommendation is going to Council this week to remove Pyrolysis (it has been difficult getting data on the technology) and Combustion (although proven technology, considered too expensive to operate with the projected volume of waste). This leaves Anaerobic digestion and Gasification as the options to be evaluated in the PER.</p> <p>As a result the PER timeline is being reviewed. Expect to have a draft PER by the beginning of November and have a EPA response by the end of November. The PER would then be issued for public comment mid January.</p> <p>EMRC research funding options for a consultant to work with the community during the PER process. The DEC do not provide funds for this. The Waste Authority used to have a Technical Assistance Grant fund for this but this is no longer available. The Community Grants Scheme is available but would be difficult for an incorporated body to apply because of GST considerations. The timing of the next round of funding is unknown and the challenge would be for timing to line up with the PER process for this to work. EMRC is considering offering a community forum/workshop so that the community can talk through and get technical guidance on the PER contents as part of the consultation process.</p>
Action/Resolution 1.		CTF members endorsed the idea of a community workshop during the PER process
		Who 1 EMRC

<p>3. CPA Draft</p>	<p>The CPA has passed through the Resource Recovery Committee and is expected to be endorsed by Council at the Aug 18th meeting.</p> <p>A thank you dinner is being arranged for the CTF in recognition of their efforts and contribution.</p>
<p>Action/Resolution 2.</p>	<p>Coordinate the date and format for the thank you dinner</p> <p style="text-align: right;">Who 2 EMRC</p>
<p>4. TEC Draft</p>	<p>The CTF input into the Tender Evaluation Criteria was considered by the CTF.</p> <p>The input is recognised as being draft in nature and it will be left with the EMRC to consider this input as they determine the final criteria and weighting.</p>
<p>Action/Resolution 3.</p>	<p>Input into TEC to be provided to EMRC</p> <p style="text-align: right;">Who 3 Joel</p>
<p>5. Future of the group</p>	<p>The CTF website was seen as a useful resource and member would still like access to it for the short term.</p> <p>Even through the CTF had achieved it's objectives in relation to the Terms of Reference, there appeared to be an ongoing role for the CTF while the project progressed. The CTF might still be called together by the EMRC for feedback on items such as</p> <ul style="list-style-type: none"> - the PER draft - the tender evaluation - Project milestones that require some community advice/input <p>There was some discussion about the role of the three current groups (Red Hill Reference Groups, Waste Management Community Reference Group and the CTF). While each had a specific roles, there was some discussion about how to structure these group so that there is not a 'double up' of roles.</p> <p>The roles that needed to be fulfilled are input into Waste Education, opportunities for local residence to provide input or get information about the operations at the Red Hill site and the monitoring of the implementation of the CPA. One suggestion was to change the format of the Red Hill group to blend a formal process (CPA monitoring) and the informal process (Resident input/information)</p>
<p>Action/Resolution 4.</p>	<p>Website to be set to read only once final document have been submitted.</p> <p style="text-align: right;">Who 4 Joel</p>
<p>Action/Resolution 5.</p>	<p>CTF members affirmed their desire to be part of ongoing communication with the project</p> <p style="text-align: right;">Who 5 EMRC</p>
<p>Action/Resolution 6.</p>	<p>CTF members affirmed their desire to be part of reviewing the draft PER</p> <p style="text-align: right;">Who 6 EMRC</p>
<p>Action/Resolution 7.</p>	<p>CTF Terms of Reference to be changed to extend the group for 12mth to enable meetings to be called as required</p> <p style="text-align: right;">Who 7 EMRC</p>

ACTION LIST

Action/Resolution 1.	CTF members endorsed the idea of a community workshop during the PER process	Who 1	EMRC
Action/Resolution 2.	Coordinate the date and format for the thank you dinner	Who 2	EMRC
Action/Resolution 3.	Input into TEC to be provided to EMRC	Who 3	Joel
Action/Resolution 4.	Website to be set to read only once final document have been submitted.	Who 4	Joel
Action/Resolution 5.	CTF members affirmed their desire to be part of ongoing communication with the project	Who 5	EMRC
Action/Resolution 6.	CTF members affirmed their desire to be part of reviewing the draft PER	Who 6	EMRC
Action/Resolution 7.	CTF Terms of Reference to be changed to extend the group for 12mth to enable meetings to be called as required	Who 7	EMRC



Resource Recovery Update - September 2011

August 2011: EMRC Council resolved to reduce the technology options for the Resource Recovery Facility to anaerobic digestion and gasification, eliminating pyrolysis and combustion as possible options. It also endorsed the final version of the Community Partnership Agreement and thanked the Community Task Force for their efforts in preparing the document.

Change to technology options for proposed Resource Recovery Facility

The EMRC Council has decided to reduce the number of technology options it is considering for the proposed facility to anaerobic digestion and gasification. This means that Council will no longer consider the option of combustion or pyrolysis for the Resource Recovery Facility at Red Hill.

As a result of these changes, EMRC now anticipates completion of the Public Environmental Review later this year for release for public comment in January 2012. A final decision on the technology to be used will be made after the tender process in late 2013.

Community Task Force

The Community Task Force (CTF) was formed in July 2010 to develop a Community Partnership Agreement and comment on tender evaluation criteria in relation to the development and performance of the proposed Resource Recovery Facility. The CTF, which works on behalf of and in consultation with the broader community within Perth's Eastern Region, is made up of eight community representatives, and two EMRC members. The CTF has met regularly since August 2010.

Community Partnership Agreement (CPA) completed

A major role for the CTF is to develop a CPA to ensure that the construction and ongoing operation of the Resource Recovery Facility (RRF) at the Red Hill Waste Management Facility is undertaken in alignment with community expectations.

The CTF developed a draft CPA in early 2011 and sought regional community comment on the draft for seven weeks during April and May. The resulting community feedback has now been considered and the CPA has been adjusted where the CTF thought this was necessary.

What is included in the CPA?

The final version of the CPA is based around goals and objectives for the construction and operation of the RRF together with possible indicators for each of the objectives. The goals are:

- Goal 1:** Ensure strong community involvement and communication;
- Goal 2:** Enhance community education and waste recycling;
- Goal 3:** Ensure prudent financial performance and long-term viability;
- Goal 4:** Achieve high quality operations and monitoring;
- Goal 5:** Minimise the impact on human health and the environment; and
- Goal 6:** Provide attractive landscaping and site aesthetics.

How will the CPA be used?

The CPA will form part of the tender documents which tenderers will have to address. Long-term, the document is meant to provide indicators through which EMRC and RRF operators can benchmark the facility's performance on agreed social, environmental and economic outcomes, and report these back to the community.

CTF commences work on tender evaluation criteria

In parallel with development of the CPA, the CTF have also been involved in providing comment on the draft tender evaluation criteria provided by the project team. These criteria were included in the community forum program held on 18 September 2010, which generated significant comment, and the CTF have used this feedback as guidance in commenting on the draft criteria. The CTF will recommend changes to the draft tender evaluation criteria for consideration by the project team in the development of the tender document.

A copy of the final CPA is available for download at www.emrc.org.au, or call 9424 2222 to receive a hard copy.

**For further project information
please click on the Resource Recovery
Project tab when you visit
www.emrc.org.au**

Protecting Perth's Eastern Region 





9.2 REPORT ON WASTE AND RECYCLE CONFERENCE 2011

REFERENCE: COMMITTEES-13142

PURPOSE OF REPORT

To advise Council of the outcomes of the 2011 Waste & Recycle Conference in Fremantle held between 14 and 16 September.

KEY ISSUES AND RECOMMENDATION(S)

- Several EMRC staff, Councillors and WMCRG members attended the 2011 Waste & Recycle Conference held in Fremantle from 14 to 16 September 2011.
- The new Waste Authority members were introduced at a breakfast meeting and a Directions Statement issued by the new Chairman.
- Keynote papers were heard on household hazardous waste programmes, extended producer responsibility progress, achieving proficiency in landfill practices and research on food waste.
- The exhibitions were very similar to previous conferences but added to the networking opportunities.

Recommendation(s)

That the information gained from the 2011 Waste and Recycle Conference be used in relevant EMRC projects and programmes.

SOURCE OF REPORT

Manager Project Development

BACKGROUND

At its 18 August 2011 meeting and in relation to attendance at the 2011 Waste & Recycle conference, Council resolved that:

- "1. COUNCILLORS AND OFFICERS NOTE THE DATES OF THE FORTHCOMING CONFERENCE.*
- 2. COUNCILLOR(S) FÄRDIG, GODFREY, PULE, POWELL AND CUCCARO BE AUTHORISED TO ATTEND THE W.A. WASTE AND RECYCLE 2011 CONFERENCE.*
- 3. FOUR PLACES BE OFFERED TO THE WASTE MANAGEMENT COMMUNITY REFERENCE GROUP (WMCRG) IN THE EVENT THAT SOME MEMBERS MAY WISH TO ATTEND."*

REPORT

The 2011 Waste & Recycle conference was attended by Councillors Godfrey, Pule and Powell as well as EMRC staff from Waste Services and Resource Recovery. Councillors Färdig and Cuccaro were unable to attend the conference because of other commitments. WMCRG members Peter Pearson, Ruth Balding and Edwin Dell attended all or part of the conference.

The EMRC's Waste Education Coordinator, Ms Tania Wells co-delivered a paper with Ms Kelsie Prabawa of Eco Change Consulting on "Learnings from a 12 month trial of Public Place Fluorescent Globe Recycling in the Eastern Metropolitan Region of WA". The paper was well delivered and received.



Item 9.2 continued

Pre-conference workshops

Some officers attended a waste education pre-conference workshop on Wednesday afternoon. The Waste Authority wanted stakeholders from all industries to have input to a waste education message they have created, which is - "Rubbish is Revenue if it's in the Right bin".

Meet the Waste Authority Breakfast

The new Chairman of the Waste Authority Mr Peter Fitzpatrick, introduced himself and the other Authority members present and gave an overview of the directions the Authority would be taking including the preparation of a new Waste Strategy to be developed by October 2011 and the formation of reference groups on commercial and industrial (C&I) waste and construction and demolition (C&D) waste. In response to a question about supporting waste to energy projects in WA the Chairman stated that they would be directing support to a regional waste to energy facility in the Pilbara in the first instance.

The conference was then opened by Peter Fitzpatrick who made the following points:

- C&I was the largest waste stream sector at 1.2 million tonnes/year;
- Organic waste was around 500,000 tonnes/year;
- There was a need for innovative approaches to recycling more C&D waste by government and industry;
- The establishment of reference groups on commercial and industrial (C&I) waste and construction and demolition (C&D) waste was designed to work on measures to increase recycling in these sectors;
- There would be a review of the landfill levy and increases were likely especially for C&D waste;
- The waste awards would be improved and upgraded and financial rewards included;
- The Waste Authority would be focussing on getting better data on waste in WA and he would be speaking with Treasury to have more of the Landfill levy funds hypothecated for use on the waste sector; and
- The Waste Authority *Directions Statement* was issued immediately following the conference (refer Attachment 1).

The keynote speakers included Amy Cabaniss (Environmental Coordinator for Connecticut College, New London, Connecticut, USA), Heidi Sanborn (Executive Director, California Product Stewardship Council, California, USA), Dr Richard Denniss (Executive Director, The Australia Institute), Neal Bolton (Principal/owner of Blue Ridge Services, a landfill consulting company and Registered Civil Engineer, Atascadero, California, USA), Greg Hebble (CEO of Foodbank WA Inc).

Points noted from their various presentations were:

Amy Cabaniss, Connecticut College, USA, "Handbook on Household Hazardous Waste."

- HHW collections began in the late 1980's across USA.
- 2009, 243 million tonnes collected, 83 million tonnes recycled;
- 1% of MSW is household hazardous waste (HHW), 82% of MSW is recycled, 12% goes to waste to energy facilities;
- 5 to 10% of households participate in HHW schemes, 90% goes to landfill/drains/incinerators or on the ground;
- Difficult to increase participation;
- Concern over HHW budgets;



Item 9.2 continued

- The HHW handbook is a useful tool, looks at community based social marketing and behaviour change;
- Trialed a number of different methods of collection. Drop off days were problematic due to long wait times. Kerb side collection and a mobile collection service, both of which proved too costly. They have a number of permanent drop off facilities for residents. Most permanent facilities are located near local transfer stations.
- They use vans for collections at remote locations;
- Distance of convenience for HHW drop off is 24 kilometres if on a main road, 21 kilometres on a back road;
- Information is not a motivator, scheduling and facility access is;
- Targeting certain materials can work – eg exchanging mercury based thermometers with non-mercury thermometers for free;
- Some counties have stopped collecting latex paint and instead air dry the paint or mix with sawdust before landfilling;
- Portland, Oregon – have recycled 1 million gallons of paint;
- Research your community attitudes, beliefs, identify the target audience;
- US have state mandated e-waste recycling in 25 states; Connecticut have product stewardship for latex and oil based paint. These schemes take pressure off the HHW budget.
- Safe Chemicals Act 2011 – risk based approach to introducing new chemicals;
- Product reformulation through green chemistry;
- Local Government are consulted about the collections and help to promote these to residents but have little to do with the running and collection of HHW; and
- Future aims are to help small businesses manager and dispose of their HHW.

Heidi Sanborn, California Product Stewardship Council, “Changing the Paradigm, from Waste to Resource.”

- Design it green, take it back at end of life;
- California leads the way in the US to Extended Producer Responsibility (EPR) systems which value waste as a resource to help drive the economy, not a waste which is an economic liability;
- California e-waste model is not EPR;
- The system relies on producer responsibility to reduce public costs and improve product design;
- EPR drivers – costs to taxpayers/ratepayers, ocean litter problem, e-waste program a model gone wrong, greenhouse gas emissions (44% of emissions is in the provision of goods);
- Hazardous waste issue, public health issue;
- Sharps are prohibited waste;
- British Columbia and France have EPR for pharmaceuticals;
- Needs to be sustainably funded and convenient;
- Brake pads contain copper which can cause contamination;
- They have Paint Care program and a carpet EPR;
- Cal Recycle is the State Waste Authority for California;
- They view waste as a resource;
- Producer responsibility approach;
- State has a limited role;



Item 9.2 continued

- Shrinking size of government;
- Concern for the Pacific gyre (the largest ecosystem on the planet and the site for an unusually intensive collection of manmade debris especially plastics);
- In 4 years they have had 7 product stewardship laws; and
- Website report at <http://www.calrecycle.ca.gov/Publications/default.asp?pubid=1364>.

Dr Richard Denniss, The Australia Institute, "Research and Food Waste."

- Wasteful consumption - \$10bn/year in Australia – things we buy and throw out without using them;
- Food waste is half of this at \$5 billion per year or \$619 per household, \$238 per person;
- Of this \$1.1bn on fruit and vegetables, \$1.1bn on takeaway food, \$900 m meat and fish, \$600 m rice dishes;
- Households with >\$80,000 income waste a lot more, single person households most wasteful;
- Survey of household expenditure in Australia showed we spend more on cigarettes and alcohol than on electricity; and
- We have to throw out an enormous amount of waste – phones, TV's, fridges (all still working), dishwashers, etc. We should extract the resources and metals before discarding.

Neal Bolton, Blue Ridge Services, "Methods of Achieving Proficiency in Landfill."

- Civil engineer, runs a consulting business;
- His business looks at increasing landfill operation efficiency;
- Landfills faced with dwindling tonnages (down 30-40%), less revenue;
- Answer is to increase operational efficiency;
- Approach uses define, measure, analyse, improve, control (DMAIC) model;
- Uses value stream mapping, activity sampling, lean production methods, operator skill; and
- Ask why we are doing this in the analysis process.

Greg Hebble, Foodbank WA Inc, "Foodbank WA, Charities, Food Waste and Optimisation."

- Key learning - Reducing Food waste to landfill;
- Been in existence for 17 years;
- 2.3 m kg food distributed in 2010 to 600 community and welfare agencies;
- Foodbank WA gives food a second life by rescuing goods close to the "use by" or "best before" dates and giving them to those in need;
- Food that is no longer fit for human consumption is channelled into composting facilities and animal feed (pet food); and
- Future programs include teaching homes how to grow their own fresh food and composting any leftovers.

Other papers noted were:

Pippa Hepburn, New Energy Corporation Pty Ltd.

- New Energy are the Australian and New Zealand licensee for the Entech gasification technology and are Perth based;
- Entech is a WA based company which has developed commercial waste treatment facilities in South-East Asia, Taiwan and Poland;



Item 9.2 continued

- The Entech process is a slow gasification process;
- New Energy use a BOO contract model;
- Targeting C&D residues, C&I waste, municipal residues (MBT and MRF);
- Targeting 200,000 tpa waste for two plants (one in the Pilbara near Broome, one near Rockingham);
- 10 hectare sites; and
- Need industry in the customer base to consume power continuously.

Cathy McGowan, “National Television and Computer Product Stewardship Scheme.”

- Targeting 44 m units in 2027/2028;
- 16.8 m units recovered in 2007/2008;
- Will affect manufacturers and importers of covered products (TV’s, PC’s and PC products);
- Thresholds for importers/manufacturers – one service/250,000 people in metro areas; 1 service /10,000 people in inner regional areas; 1 service/4,000 people in outer regional areas; 1 service/200 km/ 2,000 people for remote areas;
- Recycling target to reach 80% by 2012, currently 17%;
- Targets based on percentage share of market, must accept all brands;
- EU target is 75%; and
- Australian/NZ standard for best performance being developed.

Elmar Offenbacher, BDI Bioenergy, “Advanced Waste Conversion of Waste into Biogas.”

- 31 reference plants, one in Albury, NSW producing biodiesel from waste oil;
- One reference plant near Venice produces biodiesel from food waste;
- World leader in biodiesel multi-feedstock technology;
- Waste to biogas technology involves separation of organic substrate, followed by anaerobic digestion;
- Biogas contains 60% methane, after desulphurisation, converted to power;
- Digestate is decanted, aerated then subject to ultra filtration and reverse osmosis to produce pure drinking water;
- Plant at Este in Italy consumes 140,000 tpa of waste, produces 3.4 MW power and 47,000 tpa fertiliser; and
- 100,000 tpa plant costs \$30 m, add \$15 m for biodiesel plant, gate fee \$120/tonne.

Martina Rienzner, Sustainability Victoria, “Detox your Home-Sustainability Victoria’s Household Chemical Program”:

- They spend \$1.6 m per year, have 13 permanent sites and 30 mobile collections.
- Set some measures of success for your HHW program:
 - Tonnes collected, tonnes CO2 avoided, range, toxicity and impact of chemicals collected;
 - Cost; and
 - Long term market impacts.



Item 9.2 continued

STRATEGIC/POLICY IMPLICATIONS

Key Result Area 1 – Environmental Sustainability:

- 1.1 To provide sustainable waste disposal operations
- 1.4 To investigate leading edge waste management practices

FINANCIAL IMPLICATIONS

The expenditures for councillor and officer attendance at conferences are budgeted each year. Similarly, an allowance of \$4,500 is made each year in the Resource Recovery Budget for WMCRG members to attend local conferences and seminars.

SUSTAINABILITY IMPLICATIONS

Nil

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)

[Waste Authority Directions Statement, September 2011 \(Ref: Committees-13158\)](#)

VOTING REQUIREMENT

Simple Majority

RECOMMENDATION(S)

That the information gained from the 2011 Waste and Recycle Conference be used in relevant EMRC projects and programmes.

Discussion ensued

Cr Godfrey briefed the meeting on the “Women in Waste” workshop she attended and it was noted that women were not well represented in the Waste Management industry.



Item 9.2 continued

RRC RECOMMENDATION(S)

MOVED CR PULE

SECONDED CR GODFREY

That the information gained from the 2011 Waste and Recycle Conference be used in relevant EMRC projects and programmes.

CARRIED UNANIMOUSLY



DIRECTIONS STATEMENT

The Waste Authority has a clear mandate to steer the management of waste towards improved resource recovery from all waste streams. This will involve the attainment of multiple outcomes and strategies utilising the skill and experience of the Authority, staff, local government and industry with the support of the wider community.

While the strong historical focus has been on the diversion of waste from landfill as a worthwhile goal in itself, there is a need for a fresh focus on waste as a resource and reusing waste materials in substitution for virgin materials.

Western Australia generated an estimated 8 million tonnes of waste in 2009/10 and, while the recycling 2.6 million tonnes was a significant improvement on previous years, it is clear that accelerated measures are needed to avoid major long term consequences for the pristine Western Australian environment. This will require clear direction and support from the State Government and the need for government agencies to lead by example, in reducing their inputs into the waste stream.

The Waste Authority will work closely with partners, peak bodies and industry to develop action plans and recommendations to be implemented by Government through an overarching waste strategy. The Authority will ensure that the draft strategy proposes soundly based and achievable targets and reflects the feedback received from key stakeholders.

The new strategy document will be available for comment during November, with a view to final publication early in the New Year. The strategy will focus on achieving better outcomes for waste management through the application of practical actions and programs as well as laying a strong foundation to facilitate strategic investment in critical infrastructure.

Data is a critical element for gaining understanding the waste industry and insight into personal and institutional behaviours. It is also needed to support future planning decisions and to validate targets and outcomes. The Waste Authority supports increased data collection in a consistent format and its enhanced use and dissemination.

The great benefits of recycling C&D materials are well understood. The Authority is committed to working with industry to deliver strategies for an innovative approach towards recycling by both government and industry.

Setting a clear direction for increased recovery of C&I materials is more complex because of the diversity of waste types, collectors and processors. A reference group with representation from industry and the Waste Management Association of

Australia (WA) has commenced work to offer advice on measures to increase the diversion of C&I material from landfill.


After 10 years of relying on the Australian Packaging Covenant as the primary mechanism for promoting recycling of packaging waste, it is time to review progress and consider complementary options for increasing the rate of recycling of packaging materials and controlling litter. Meeting community expectations in this area is important and the Waste Authority will provide evidence based options and recommendations to Government for increasing the amount of packaging material that is being recycled and diverted from landfill.

To enhance the overall performance of the waste and recycling industry, there is a need to develop and assist with the implementation of best practice guidelines for landfill and AWT options to improve resource recovery.

A review of the landfill levy has been widely anticipated throughout the waste management sector, and the 2010 increase in the levy has had the positive effect of increasing recycling. The recent Hyder report on recycling for 2009-10 covers only the first six months of the increased levy but notes that 're-processors confirm there has been a strong increase [in recycling] across most materials'.

Any move to increase the levy will be signalled in advance to the sector to allow sensible planning and investment decisions to be made by local government and industry. Any future increases would be designed to close the gap between the cost of landfill and alternative waste technologies. It would also encourage innovation and investment in resource recovery, to counteract the social and environmental impacts of landfill in the metropolitan area, and assist in the progressive development of sustainable alternative facilities in the regions.

The Waste Authority places a strong emphasis on continuous engagement with a wide range of interest groups, professional and peak bodies and government agencies to achieve mutually agreed outcomes for waste avoidance and resource recovery in Western Australia.

A handwritten signature in black ink, appearing to read 'Peter Fitzpatrick', with a long horizontal line extending to the right and a small arrowhead at the end.

Peter Fitzpatrick AM JP
CHAIRMAN
September 2011



10 CONFIDENTIAL MATTERS FOR WHICH THE MEETING MAY BE CLOSED TO THE PUBLIC

Nil

11 GENERAL BUSINESS

Crs Godfrey and Pule noted that compost from the City of Stirling single bin system was used on the Atlas farm and expressed their concerns that this method may create legacy issues in the future.

The Manager Project Development noted that Pheonix Energy were embarking on a \$300-\$400m Waste to Energy project in Kwinana and was expected to be in operation by 2014-2015.

The Chairman thanked the Committee for their support for the past two years.

Cr Radford entered the meeting at 5.39pm.

12 FUTURE MEETINGS OF THE RESOURCE RECOVERY COMMITTEE

The next meeting of the Resource Recovery Committee will be held on **Thursday, 17 November 2011** at the EMRC Administration Office, 1st Floor, Ascot Place, 226 Great Eastern Highway, Belmont WA 6104 commencing at 5.00pm.

Future Meetings 2011

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 5.40pm.