

ATTACHMENT C

**COMMUNITY REFERENCE GROUP
WORKSHOP OUTCOMES REPORTS
FOR 3 AND 10 JUNE 2014**

Community Reference Group Workshop Summary

	Issue	City Response-Action	Recommended change to the draft
i.	<p>Workshop 1: 3 June 2014</p> <p>All responses to the City of Sydney’s vision for waste management were supportive. Overall, participants were supportive of the details of City of Sydney’s Advanced Waste Treatment</p> <p>This support was based on reducing waste to landfill, environmental sustainability, the need to plan for the future and join global waste management leaders, and the need to address problems around increasing population and waste. All participants thought that advanced waste treatment was something the City should be doing.</p> <p>A number of concerns were also raised, particularly:</p> <ul style="list-style-type: none"> • To ensure wide community support, there was a need to inform residents about the technology and its benefits. • That advanced waste treatment could carry additional costs for residents. • The potential location of advanced waste treatment facilities. • Some concern that the technology has not yet been sufficiently ‘tried and tested’. <p>Participants sought information regarding the technical details of advanced waste treatment, the potential location of treatment facilities, and the cost of implementing advanced waste treatment, as well as reassurance that the technology has been ‘tried and tested’.</p> <p>Overall, however, participants were supportive of the Advanced Waste Treatment Master Plan.</p>	<p>The concern for the community to be fully informed of technology, benefits and cost will be incorporated into future community engagement and education campaigns surrounding the City’s implementation of the Master Plan.</p> <p>Concerns regarding location and maturity of the technology, while in part already considered in the Master Plan, may also be considered during Implementation.</p>	<p>No change.</p>
ii.	<p>Workshop 2: 10 June 2014</p> <p>All participants in the workshop were supportive of the Master Plan. Reasons included that the plan is ‘forward-thinking’, environmentally sustainable, will reduce waste to landfill, and is cost-effective.</p> <p>The criteria for locating an Advanced Waste Treatment facility that were most important to participants were:</p> <ul style="list-style-type: none"> • Proximity to the source of the waste - Participants thought that a closer site would minimise the impact zone, and would also reduce transport 	<p>The community responses to location criteria for a potential Advanced Waste Treatment facility are noted. The Enabling Action related to Locating a Facility has been updated to reflect the community comments, and these may also be considered during Implementation.</p>	<p>New text added within ENABLING ACTION 1, at p. 84.</p>

Issue	City Response-Action	Recommended change to the draft
<p>costs, emissions, road damage, and traffic noise. Preferences were indicated for the facility to be located even within the city boundaries, but only if distance from residential areas is addressed satisfactorily.</p> <ul style="list-style-type: none"> • Transport access - There was some concern around trucks traveling through suburbs, and it was noted that a 'pathway of least impact' should be considered. • Noise & odour pollution - The facility should be located where noise and odour will not impact residents. Operating hours of the facility need to be taken into consideration in determining the potential impacts of noise and odour. • Aesthetics - Participants thought that the facility should be attractive, landscaped, and become a part of the local area. • Other location criteria raised included: <ul style="list-style-type: none"> ○ Effects on traffic ○ Planning zones ○ Price of land ○ Anticipating future urban changes ○ Away from rivers and the sea ○ Providing tangible benefits to the host community ○ Generating jobs in areas of high unemployment. <p>Participants also thought there would be a number of challenges in gaining community acceptance of the project, including the following:</p> <ul style="list-style-type: none"> • The need to promote the project and educate residents about the benefits • Noise and odour pollution • Traffic impacts • Proximity to residents • Health and environmental concerns. <p>Despite these concerns and challenges, participants were overwhelmingly supportive of the plan.</p>		

Note: See also separate Community Reference Group Workshop Reports. The Workshop consisted of 14 City of Sydney residents randomly selected, present at both workshops. The workshops were held on 3 June and 10 June 2014.

City of Sydney Advanced Waste Treatment Master Plan

Community Reference Group Workshop Outcomes Report

3 JUNE 2014 – Redfern

This workshop report provides a summary of community reference group feedback pertaining to the City of Sydney's *Advanced Waste Treatment Master Plan*, and the City's waste management more generally. The workshop featured written and discussion activities where participants provided feedback on the City of Sydney's vision for waste management and responded to the details of the *Advanced Waste Treatment Master Plan* presented to them by City of Sydney representatives. Summaries of both the participants' responses to the written activities and their concerns raised during City of Sydney presentations are provided in this report.

Contents

City of Sydney Advanced Waste Treatment Master Plan	1
Community Reference Group Workshop Outcomes Report	1
Consultation Overview	2
Presentation 1: Sustainable Sydney 2030 and current waste management	3
Activity 1: Household waste and recycling	3
Presentation 2: Future challenges and the waste hierarchy	4
Activity 2: What to do about it?	4
Activity 3: Objectives of Advanced Waste Treatment	5
Presentation 3: Advanced Waste Treatment technologies and options	6
Activity 4: Council's choice for advanced waste treatment	7
Summary of outcomes	8
Appendix A – Workshop Running Sheet	10

Consultation Overview

Background and context

The City of Sydney has articulated its vision in *Sustainable Sydney 2030 – The Vision* for a green, global and connected future. A number of plans have been developed to deliver on this vision and associated sustainability targets. The City of Sydney has developed a suite of Green Infrastructure Master Plans which, together, outline the potential for the City to achieve its greenhouse gas emissions reduction target of 70 per cent by 2030 (based on 2006 levels). The Master Plans include Decentralised Energy – Trigeneration, Decentralised Water, Decentralised Energy – Renewable Energy, Decentralised Energy – Advanced Waste Treatment.

The *Advanced Waste Treatment Master Plan* examines a range of proven technologies that are in use elsewhere, and finds that the best solution to waste management issues is to convert solid waste into a renewable gas through gasification. Together with recycling, gasification of non-recyclable wastes can avoid up to 95 per cent of waste going to landfill, and the gas can be injected into the gas grid to fuel local energy generation or transport networks.

In June 2014, the City of Sydney sought feedback from a community reference group as part of the public exhibition process for the *Advanced Waste Treatment Master Plan*.

Consultation and this report

The first of two Community Reference Group sessions was held in Redfern on 3 June 2014 (18:00-20:00). Fourteen participants were recruited for the sessions by a research recruitment company. Twelve participants resided within the City of Sydney local government area. Two participants resided outside the local government area and were included to provide a perspective from outside the local government area yet within the Sydney metropolitan area.

The workshop running sheet is included in Appendix A. This Outcomes Report presents findings from the workshop in the order of the activities detailed in the running sheet.

Presentation 1: Sustainable Sydney 2030 and current waste management

Chris Derksema, Sustainability Director, from Sydney City Council presented an introduction to Sustainable Sydney 2030. Chris highlighted the City's vision to be a globally competitive and innovative city and a leading environmental performer. He outlined the city's green strategies relating to:

1. Energy efficiency, renewables, combined heating and cooling
2. Decentralised water
3. Advanced Waste Treatment
4. Climate change adaptation.

Sam Gill, Manager, Cleansing and Waste, then presented on current waste management practices in the city, outlining current processing and resource recovery rates.

Activity 1: Household waste and recycling

This activity served as an icebreaker and as a gauge of the present perspectives of participants, and their current knowledge and understanding. It also served to relate the Advanced Waste Treatment Master Plan to their personal household waste and recycling activities.

Question 1a: What does your household waste look like?

Participants indicated that their household waste was comprised mainly of:

- Recyclables (bottles, cans, paper, etc.)
- Organic waste (particularly food waste)
- Plastic packaging.

Question 1b: Do you take any steps to minimise waste?

All participants indicated that they take some steps to minimise waste. The following steps were highlighted:

- Using reusable bags for shopping
- Market shopping to reduce packaging
- Minimising food waste by cooking only to portion size or reusing leftovers
- Ensuring waste is separated into recyclables and non-recyclables
- Reading online rather than purchasing newspapers or magazines
- Reusing plastic bags and containers.

Question 1c: What items or materials do you recycle?

Participants indicated that they recycle the following items:

- Plastic bottles
 - Paper and cardboard
 - Tins and cans
 - Glass
 - Garden waste.
-

Presentation 2: Future challenges and the waste hierarchy

Mark McKenzie from Sydney City Council presented on future challenges of waste management in the City of Sydney, highlighting the challenge of a growing population along with the rising costs and falling capacity of landfill. Mark also outlined current practices of transporting waste to landfill sites and the greenhouse gas emissions from waste.

One participant asked about the carbon footprint from transporting waste (response: not as high as we fear it might be, just a couple of trucks going to bigger trucks and so on. What's in the bags is more potent, methane etc.).

Mark introduced the City of Sydney's vision for waste, and the objectives of the *Advanced Waste Treatment Master Plan*.

Activity 2: What to do about it?

2a: What do you think about the City of Sydney's vision for waste management?

All responses to the City of Sydney's vision for waste management were supportive. Apart from expressions of general support or agreement, some common themes raised by participants were:

- Comments that the plan is impressive, promising, and forward-thinking (10 responses).
- A number of participants were generally supportive, but commented that they would like to see more technical details of the plan (6 responses).
- Comments that, although supportive of the plan, it seems 'optimistic' and 'ambitious' (2 responses).
- One participant expressed concern that the plan may result in additional costs to individual households.
- 'I absolutely agree that the ideas presented will be positive step for the future of waste management in the city.'
- 'I think that, while ambitious, it is a necessary program to put in place for future generations. Thus far I am not entirely clear on how it will be done, but the intended end goal is impressive.'

2b: Do you agree or disagree that this is something the City should be doing?

All participants were in agreement that the City of Sydney's vision for waste management is something that the City should be doing.

2c: List some reasons for your answer in 2b.

Reasons given for support of the City's vision for waste management are detailed below. The number of responses indicates how many participants listed each reason in their response.

Minimising waste to landfill (8 responses)

Minimising waste to landfill was the reason most commonly cited for supporting the City's vision. A number of participants expressed concern that landfill sites are reaching capacity, and commented that the plan presents an effective way to address this problem.

Environmental Sustainability (7 responses)

Seven participants highlighted the potential environmental benefits of the plan as a reason for their support. Specific comments included the provision of a sustainable energy source and lowering of greenhouse gas emissions, as well as the general benefits to the environment offered by the plan.

Forward-thinking (5 responses)

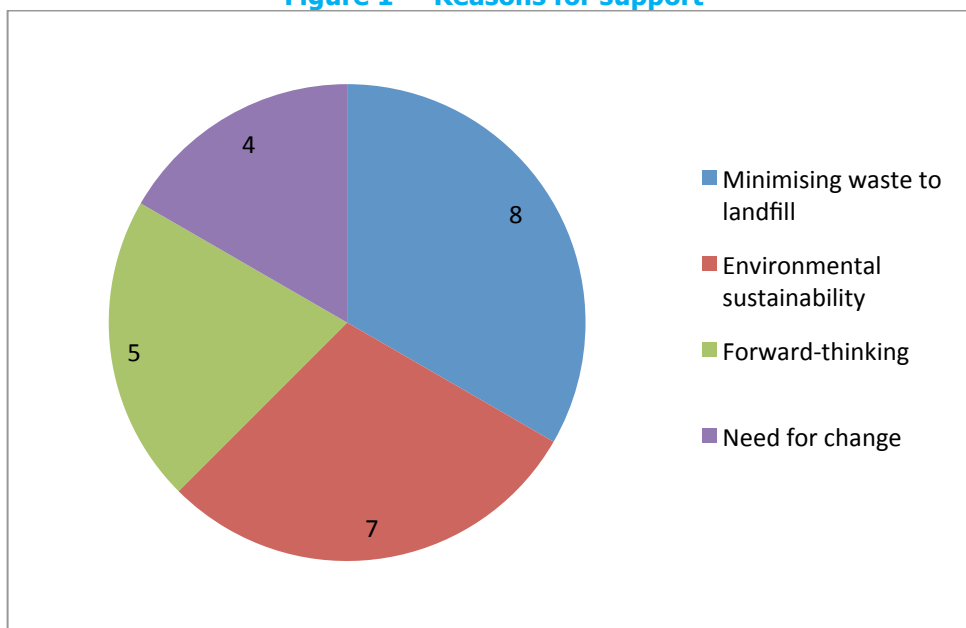
Five participants commented that they were impressed by the 'forward-thinking' presented in the plan. As one participant commented, 'I had no idea that waste facilities were so few and the forward planning is great'. Another participant supported the plan because 'overseas countries have been doing it for quite some time'. Participants thought it was important the City of Sydney take on a leadership role and 'join global leaders in waste management'.

The need for change (4 responses)

Lastly, four participants highlighted the general urgency of the need to address these issues. These responses particularly pointed to the city's growth in population as creating a need for change. 'Our reliance on fossil fuels and current waste strategies are inappropriate for our growing population, and future populations.' These participants highlighted the general need to 'do something'.

The pie chart below illustrates the number of participants who mentioned each reason in their response.

Figure 1 — Reasons for support



Activity 3: Objectives of Advanced Waste Treatment

3a: What do you think about the City of Sydney's objectives for advanced waste treatment?

Generally, responses to the objectives for advanced waste treatment were supportive:

- 10 participants thought that the objectives are comprehensive, well thought out, and make sense.
- 3 participants commented that the objectives are very ambitious, and may be difficult to achieve, or will be achieved only with certain conditions.
- Some participants stated that they would like to hear more specifics and technical details about the plan and its objectives.
- 'They are well thought out and appear to be in the best interest of the Council, economy and residents in the City of Sydney. However they are very ambitious and I can see the Council struggling to achieve them to the highest calibre.'

3b: Do you think they are achievable?

Overall, participants were supportive of the objectives of advanced waste treatment and thought that they are achievable. Only one participant thought that the objectives are ambitious and only 'probably/hopefully' achievable.

3c: List any concerns you may have about these objectives.

While overall participants were supportive of the objectives of advanced waste treatment, some concerns were also raised. The most commonly raised concerns were the need to ensure that the plan has the support of residents and the cost of implementing the plan. Other concerns are also outlined below.

Support and cooperation of residents

A common concern raised (5 participants) was how the project would gain the support and cooperation of residents. These participants thought that having the support of the community would be essential in achieving the objectives. Some participants thought that residents would need to be educated about these new technologies.

Cost

Another common concern (4 participants) was the potential cost of implementing the plan. These concerns primarily centred on the perception that the plan would carry an additional cost for City of Sydney residents.

Other concerns

Other concerns included:

- Two participants questioned the potential location of advanced waste treatment facilities'
- Two participants expressed concern that there may be unforeseen environmental impacts of advanced waste treatment'
- There was some concern over the long-term commitment to targets, and the potential impacts of changing local, state, and federal government priorities.
- Concern that the objectives are too ambitious and will not be met, given the increasing population and increasing volumes of waste within the City.

Overall, however, the objectives of advanced waste treatment were commented on favourably:

- 'The objectives are achievable, with the cooperation of all councils and residents, and the support of state and federal governments.'
- 'The objectives seem to be very positive. I'm interested to hear more specifics on how they will be achieved.'

Presentation 3: Advanced Waste Treatment technologies and options

Mark McKenzie introduced the different available waste treatment options for Sydney, and what each technology achieves. The technologies presented included mechanical-biological treatment, bioreactor landfill, anaerobic digestion, incineration, and gasification. The suitability of each for the City of Sydney was assessed.

The questions asked by participants, along with the responses provided, were:

- Where does anaerobic digestion waste go? (Response: If not suitable for agricultural use, it goes to landfill).
- With gasification, is there any waste at the end? What percentage? (Response: Generally anywhere from 5—20 per cent).

- How old is the gasification technology? (Response: It's very old. It used to be in cars around World War II, and gasification from municipal waste was in full commercial operation in Japan from 1999).
 - With regard to gasification and other processes that will synthesise gas into natural gas pipelines, how much would come across? (Response: The first synthesis of gas would probably lose around 20 per cent, which would then be balanced with the loss of electricity if burning gas on site).
 - How much energy used to produce the gas? (Feedback and self-sustaining processes were explained in response).
-

Activity 4: Council's choice for advanced waste treatment

4a: What do you think about how the City will proceed with advanced waste treatment?

Overall, participant responses were supportive of the Council's choice for advanced waste treatment. Participants thought that the proposed plan is 'exciting', 'a good idea', and 'a good way to proceed'. Twelve participants expressed such positive responses. For two of these participants, advanced waste treatment was a particularly appealing option as it would enable Sydney to 'join global front runners' in waste management.

Two of these participants were supportive of the plan, but thought there was a need to educate more residents about the problems and the proposed solution.

Another two participants were supportive but wanted more information about the costs associated with advanced waste treatment, and particularly wanted to know how this compares to the costs of other waste management options.

4b: Do you think using these advanced waste treatment technologies is a good idea or a bad idea?

All 14 participants thought that the use of advanced waste treatment technologies is a good idea.

4c: List any positives or negatives about this way of managing waste in the city.

The positives and negatives highlighted by participants are grouped into themes below, along with the more specific comments given by participants. The number of responses reflects the number of participants who listed each positive or negative.

Positives:

Reduction in waste to landfill (7 responses)

- Reduce waste to landfill
- Eliminate some transport costs associated with landfill
- Waste used to supply energy and fertiliser.

Sustainable energy supply (7 responses)

- Sustainable energy source
- Production of energy through innovation
- Using gas as a product is very positive
- Self-sufficient energy supply.

Cost-effective (4 responses)

- Cost-effective and self-sufficient after it has begun.

Environmental benefits (3 responses)

- Environmental impact of waste will be lessened
- Less garbage being in our environment.

Creation of Jobs (2 responses)

- Creates jobs
- Green jobs!!

Other

- Sydney will join global waste management leaders
- The technology seems to be advanced.

Negatives:

Location of facilities (4 responses)

- Space lost for gasification facilities
- Where will these sites be built? How many sites will be needed?

Concerns about the technology (4 responses)

- Some of the ideas mentioned don't seem to be very tried and tested
- How successful have these methods been?

Cost (3 responses)

- Cost considerations
- How does the cost compare to other options?

Health concerns (2 responses)

- Health issues for any waste?
- Danger—hearing lots about different gases and heat?

Environmental concerns (2 responses)

- Environmental impact?
- GHG emissions?

Public sentiment (1 response)

- It will need lots of educational promotions!!

Summary of outcomes

Overall, participants were supportive of the details of City of Sydney's *Advanced Waste Treatment Master Plan* presented at this session. This support was based on reducing waste to landfill, environmental sustainability, the need to plan for the future and join global waste management leaders, and the need to address problems around increasing population and waste. All participants thought that advanced waste treatment was something the City should be doing.

A number of concerns were also raised, particularly:

- That the project may struggle to gain wide community support, and that there was a need to inform residents about the technology and its benefits.
- That advanced waste treatment would carry additional costs for residents.
- The potential location of advanced waste treatment facilities.

ATTACHMENT C

- Some concern that the technology has not yet been sufficiently 'tried and tested'.

The majority of perceived negatives centred on concerns and questions that participants thought needed to be addressed. Participants wanted more information regarding the technical details of advanced waste treatment, the potential location of treatment facilities, and the cost of implementing advanced waste treatment, as well as reassurance that the technology has been 'tried and tested'. Overall, however, participants were supportive of the *Advanced Waste Treatment Master Plan*.

Appendix A – Workshop Running Sheet

Advanced Waste Treatment Master Plan – Community Reference Group 3 June

5:30 – 6:00	Registration	Registration – sign in Informal discussions with participants	Support (CoS/Elton) Facilitators (CoS/Elton)
6:00 – 6:05	Introduction – <u>keep very short</u> Include Welcome to Country	<i>Introduce yourself (OBS)</i> Introduction to Sustainable Sydney 2030 Introduction to the Advanced Waste Treatment Master Plan process – but don't give too much away! Clear purpose statement for workshop <i>Introduce City Council presenters</i> <i>Introduce Gary Cox</i>	Facilitator (CoS)
6:05 – 6:10	Protocol – rules of the workshop.	Workshop overview and protocols - one person at a time - respect each other's views - all have a chance to talk <i>Introduce Alex Gold – note taker</i> Emergency procedures Breaks and ending on time	Facilitator (GC-Elton)
6:10-6:15	Presentation 1 Sustainable Sydney 2030 and current waste management	<i>Introduction to Sustainable Sydney 2030</i> <i>What currently happens to our waste?</i>	Expert Presenter (CD-CoS) Expert Presenter (SG-CoS)
6:15 - 6:30	Activity 1: Icebreaker.	<i>Introductions to each other – name, suburb</i> What does your household waste look like? Do you take any steps to minimise waste? How much are you able to recycle? Objective: Understand participant's current knowledge and understanding.	Facilitator (GC-Elton) Participants (Table discussion with worksheet)
6:30 – 6:45	Presentation 2: Future challenges and the waste hierarchy	<i>What are the challenges for the future? Concept of the waste hierarchy.</i> Facilitator – explain how the presentation will be run and procedure for asking questions. Technical issues – hand up! Objective: Give participants a good and technically sound overview and provide opportunities for them to question the speaker.	Facilitator (GC-Elton) Expert Presenter (MMK-CoS) Participants (Individual questions and answers)

ATTACHMENT C

6:45 – 7:00	Activity 2: What to do about it?	<p><i>What do you think about the City of Sydney’s vision for waste? Does it make sense to you?</i></p> <p><i>Do you agree or disagree that this is something the council should be doing? List one or two reasons.</i></p>	<p>Facilitator (GC-Elton)</p> <p>Participants (Table discussion)</p>
7:00– 7:15	Break	Refreshments and opportunity for one-on-one discussions	All
7:15 - 7:25	Activity 3: AWT objectives (95 per cent diversion, replacement of CoS fossil fuel consumption, avoiding ash waste).	<p>Slide on targets/objectives (brief explanation)</p> <p><i>What do you think about these targets?</i></p> <p><i>In your view, are they achievable?</i></p> <p><i>List any concerns you have about the council having these targets – for example, cost or pollution?</i></p> <p><i>Put your own answer on the worksheet and discuss with participants on your table.</i></p>	<p>Facilitator (OBS-CoS)</p> <p>Presenter (MMK-CoS)</p> <p>Facilitator (GC-Elton)</p> <p>Participants (Table discussion)</p>
7:25 – 7:35	Presentation 3: AWT technologies and options.	<p>Presentation on advanced waste treatment options.</p> <p>What options/technologies did the City consider?</p> <p>Explain the different technologies and what they achieve. (How they work will be dealt with next week). Similarities and differences between them. Suitability for the City of Sydney.</p>	<p>Expert Presenter (MMK-CoS)</p> <p>Participants (Individual questions and answers)</p>
7:35 – 7:40	Video	<i>Show City of Sydney AWT Video</i>	Expert Presenter (MMK-CoS)
7:40 - 7:50	Activity 4: Council’s choice for AWT.	<p><i>What do you think about the City of Sydney’s choice for advanced waste treatment?</i></p> <p><i>What do you think are the positives and negatives?</i></p> <p><i>List any issues on your worksheet.</i></p>	<p>Facilitator (GC-Elton)</p> <p>Participants (Table discussion)</p>
7:50 – 7:55	Q & A	<p>Final Q & A.</p> <p><i>Do you have any final questions for our council representatives?</i></p> <p><i>How did you find the workshop? Evaluation Form.</i></p> <p><i>Do you have any outstanding issues?</i></p>	<p>Facilitator (GC-Elton)</p> <p>Expert Presenter (MMK-CoS)</p> <p>Participants (Individual questions and answers)</p>
7:55– 8:00	<p>Close</p> <p><u>Collect work sheets.</u></p>	<p>Thanks for attending.</p> <p>Explain process for receiving the incentives. Must attend next session.</p> <p>Next steps in the consultation process – workshop on Tuesday 10 June 2014.</p>	Facilitator (OBS-CoS)

City of Sydney Advanced Waste Treatment Master Plan

Community Reference Group Workshop Outcomes Report

10 JUNE 2014 – Redfern

This workshop report provides a summary of community feedback pertaining to the City of Sydney's *Advanced Waste Treatment Master Plan*. The workshop featured written and discussion activities where participants provided feedback on the City of Sydney's vision for waste management and responded to the details of the *Advanced Waste Treatment Master Plan* presented to them by a City of Sydney representative. Summaries of both the participants' responses to the written activities and their concerns raised during City of Sydney presentations are provided in this report.

Contents

City of Sydney Advanced Waste Treatment Master Plan	1
Community Reference Group Workshop Outcomes Report	1
Consultation Overview	2
Presentation: The waste to gas solution	3
Activity 1: The waste to gas solution	3
Activity 2: Location criteria for an AWT facility	5
Activity 3: Priorities for location	6
Activity 4: Challenges to community acceptance	8
Summary of outcomes	9
Appendix A – Workshop Running Sheet	10

Consultation Overview

Background and context

The City of Sydney has articulated its vision in *Sustainable Sydney 2030 – The Vision* for a green, global and connected future. A number of plans have been developed to deliver on this vision and associated sustainability targets. The City of Sydney has developed a suite of Green Infrastructure Master Plans which, together, outline the potential for the City to achieve its greenhouse gas emissions reduction target of 70 per cent by 2030 (based on 2006 levels). The Master Plans include Decentralised Energy – Trigeneration, Decentralised Water, Decentralised Energy – Renewable Energy, Decentralised Energy – Advanced Waste Treatment.

The *Advanced Waste Treatment Master Plan* examines a range of technologies that are in use elsewhere, and finds that the best solution to waste management issues is to use a high-temperature gasifier to convert solid waste into a gas. Together with recycling, gasification of non-recyclable wastes can avoid up to 95 per cent of waste going to landfill, and the gas can be injected into the gas grid to fuel local energy generation or transport networks.

In June 2014, the City of Sydney resolved to seek the views of a Community Reference Group to provide input and feedback as part of the public exhibition process for the *Advanced Waste Treatment Master Plan*.

Consultation and this report

The second of two Community Reference Group sessions was held in Redfern on 10 June 2014 (18:00-20:00). Thirteen participants attended the second session (one person did not attend the second session after attending the first session). Participants were recruited by a research recruitment company and resided within the City of Sydney local government area, except for two participants recruited from further afield to gain a wider perspective.

The workshop running sheet is included in Appendix A. This Outcomes Report presents findings from the workshop in the order of the activities detailed in the running sheet.

Presentation: The waste to gas solution

Mark McKenzie from Sydney City Council presented on Advanced Waste Treatment technologies. Mark outlined the different options available, including mechanical-biological treatment, bioreactor landfill, anaerobic digestion, thermal combustion (incineration), and thermal conversion (gasification). Mark explained the process of converting waste to gas, gave a description of the gas produced, and explained the possibilities for using the gas.

The questions asked by participants, along with the responses provided, were:

- Will it make it more expensive to build a 'pretty' facility? For example, would a curved roof be more expensive than square one? (Mark responded it need not be expensive, and aesthetically-pleasing curves may also serve a useful purpose in the plant).
- Will this be able to be used to mine existing landfill as well? (This has been done in the USA before, and a number of mining technologies exist. The hurdle is that when digging up a landfill it stinks, so can't get the permission because of urban encroachment).
- Connecting to a pipeline for the city? (This will be discussed later in the session).
- How is the syngas stored? (Most is used quickly so does not need to be stored).
- Is this a government funded project or will it be privately funded? (City has worked through what we really want after consulting community needs and expectations. We then take this to providers to build, own, and operate, and we then receive a good rate to use it. Private sector then needs to get banks to underwrite it).
- How many facilities need to be built? (Processing just city's own garbage would only need one, or half a facility, so we would bring in commercial or other region's waste. If we include commercial we would need one large one, probably two. For all of Sydney, would need 10-12 facilities).
- What land area does one facility need? (Gasification is compact, but the City wants sorting up front and processing in the back, so 3-5 hectares).
- What to do with slag? (It is collected separately, low leaching capability, crush it up and use it as aggregate, for road base, crushed finer can be used as an abrasive material in industrial sandblasting).
- Is slag medically tested? (It has been chemically tested. It will not affect human health. Particles do not leach out. Testing done by the EPA and will meet any requirements they set).
- How long will it take to get it running? (If we can get to market next year, we will look to produce our first load of gas in 2019. That is optimistic but possible).
- With other facilities in other countries, are they using the same option of natural gas substitution? (Most are generating syngas and then making electricity. A number are pushing research and development to move to natural gas substitution to use in existing infrastructure. The biggest uptake is China, gasifying dirty coal to put in gas pipeline rather than trucks).

Activity 1: The waste to gas solution

1a: What do you think about the City of Sydney's plan to convert waste into a gas?

All participants commented favourably on the City of Sydney's plan.

All 13 participants responded with general positive comments. Specific comments included that the plan is 'forward-thinking' (2 responses), 'progressive' (2 responses), and 'environmentally beneficial' (2 responses).

One participant commented that while they were impressed with the plan, they found it 'difficult to understand how it works in depth'.

'It seems like an excellent solution to reducing waste and saving landfill space. It's great that Sydney will be joining the world leaders in using this advanced technique.'

1b: Do you agree or disagree with the City of Sydney's solution? Give a reason.

All participants indicated that they were in agreement with the City of Sydney's solution. The reasons given for agreement are detailed below. The number of responses reflects the number of participants who mentioned that reason in their response.

Forward-thinking (5 responses)

5 participants indicated that they were impressed by the 'forward-thinking' presented in the City of Sydney's solution. These participants indicated that they support the solution as it 'addresses future issues', or because it is 'progressive and a positive step in the right direction'. Participants also thought it was important Sydney take on a leadership and 'align itself with Canada and Japan who are successfully using gasification and thinking about the future'.

Environmental sustainability (4 responses)

Four participants highlighted the potential environmental benefits of the plan, and particularly the provision of a sustainable source of energy, as the reason behind their agreement. Specific comments referred to the potential of the plan to minimise, as well as more general comments that the solution is environmentally friendly.

Reducing waste to landfill (3 responses)

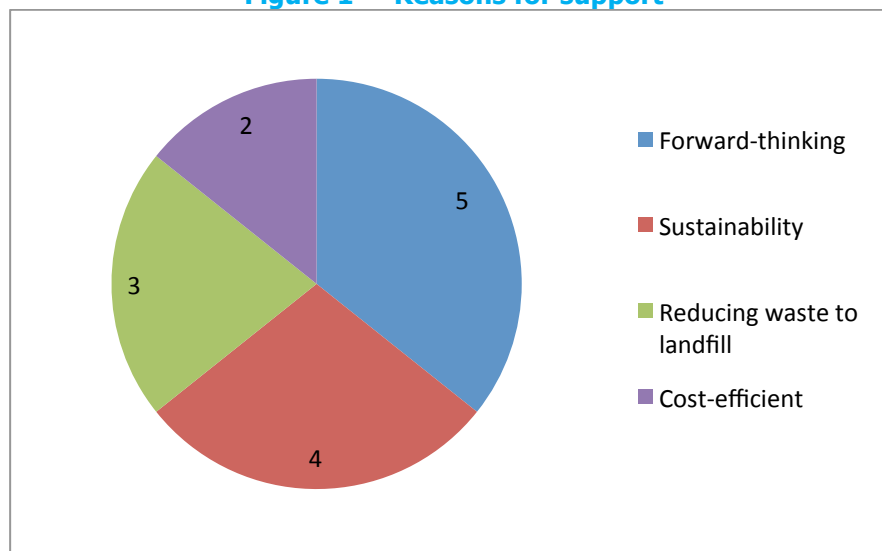
Reducing waste to landfill was cited by 3 participants as the reason for their support. Specific comments included that the plan offers a better way of dealing with waste and a way to relieve landfill pressure.

Cost-effective (2 responses)

Two participants thought that the plan offers a cost-effective alternative for waste management and highlighted this as their main reason for supporting the solution.

The pie chart below illustrates how many participants mentioned each reason in their response.

Figure 1 — Reasons for support



1c: Does the City of Sydney's plan make sense? List any issues you have with the plan or any parts of the proposal that don't make sense to you.

All participants indicated that the City of Sydney's plan makes sense.

However, some concerns were also raised regarding the plan. These were:

- The location and number of facilities (6 responses)
- The cost to residents (3 responses)
- The perceived potential for environmental pollution (2 responses)
- The need to promote the project to gain community support (1 response).

A number of participants also indicated that, while they thought the plan makes sense, they wanted more detailed information on how the technology works (3 responses). Two participants wanted more information about how the energy is transferred and put back into the City's grid.

Activity 2: Location criteria for an AWT facility

As explained in the City of Sydney's Advanced Waste Treatment Master Plan, there are three principal constraints on any location of a gasification type facility:

1. **Planning Zones** permitting a waste recovery facility. Heavy industrial zones are one of those permitted areas.
2. **Proximity to gas pipelines of suitable capacity** for reticulating the anticipated supply of renewable gas back into the City. The output of substitute natural gas from the facility must be matched to the ability of a gas injection point and pipeline that can accommodate that level of gas.
3. **Size of the facility** itself, housing all of the processes that need to be integrated on one site. This includes not only the gasification unit itself, but the inclusion of waste sorting and preparation areas, and the inclusion of SNG methanation technologies will determine the facility footprint. The site must be sufficiently scaled to allow for any staged introduction of additional processes.

Secondary constraints will also help determine the optimal location of a facility, including considerations such as proximity to source of waste, transport impacts, buffer zones, and other amenity and compatibility issues.

This group activity served to gauge an insight into the criteria that participants thought should be considered in locating an Advanced Waste Treatment facility.

What do you think the criteria for locating the Advanced Waste Treatment plan should be?

The criteria highlighted as most important to consider were:

Proximity

Proximity to the source of the waste emerged as an important criterion for participants. Participants thought that a closer site would minimise the impact zone, and would also reduce transport costs, emissions, road damage, and traffic noise. Preferences were indicated for the facility to be located within the city boundaries. However it was highlighted that distance to residential areas would also need to be considered.

Transport access

Transport access was highlighted as another concern in locating a site. Participants indicated a preference for sites that could, if feasible, be accessed by rail. There was some concern around trucks traveling through suburbs, and it was noted that a 'pathway of least impact' should be considered in order to minimise impacts on residential areas.

Noise & odour pollution

Noise and odour pollution emerged as key criteria in locating an Advanced Waste Treatment facility. It was suggested that the facility should be located where noise and odour will not impact residents. It was also suggested that operating hours of the facility would need to be taken into consideration in determining the potential impacts of noise and odour.

Aesthetics

Aesthetics were also an important criterion. Participants thought that the facility should be attractive, landscaped, and become a part of the local area.

Other

Other criteria raised included:

- Effects on traffic
- Planning zones
- Price of land
- Anticipating future urban changes
- Away from rivers and the sea
- Generating jobs in areas of high unemployment.

Specific suggestions for sites included:

- An existing industrial site
- Reclaim a landfill
- Near existing collection facilities
- Underground.

Activity 3: Priorities for location

Vote on which 3 locational criteria we have just discussed are the most important to you.

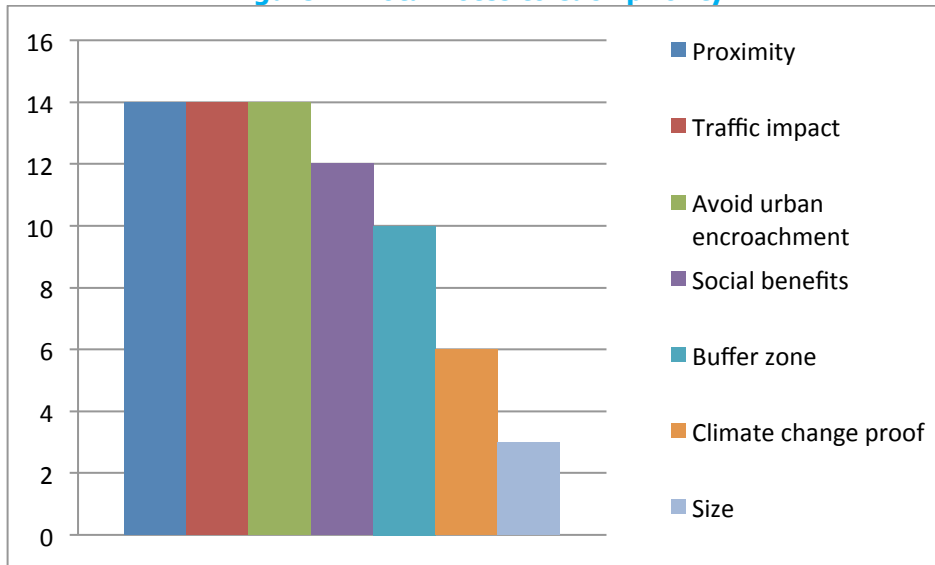
In this activity, participants were asked to indicate a first, second, and third priority for locating an Advanced Waste Treatment facility. The criteria that emerged as key priorities were:

- Proximity to source of waste
- Traffic impact
- Avoiding urban encroachment and anticipating future changes in land use
- Enhancing social benefits (particularly the creation of employment opportunities)
- Buffer zone to minimise the impacts on local residents
- Climate change proof
- Size of the facility.

First priorities received three votes, second priorities two votes, and third priorities one vote. The priorities with the highest number of total votes were proximity, traffic impact, and avoiding urban encroachment, all with 14 votes.

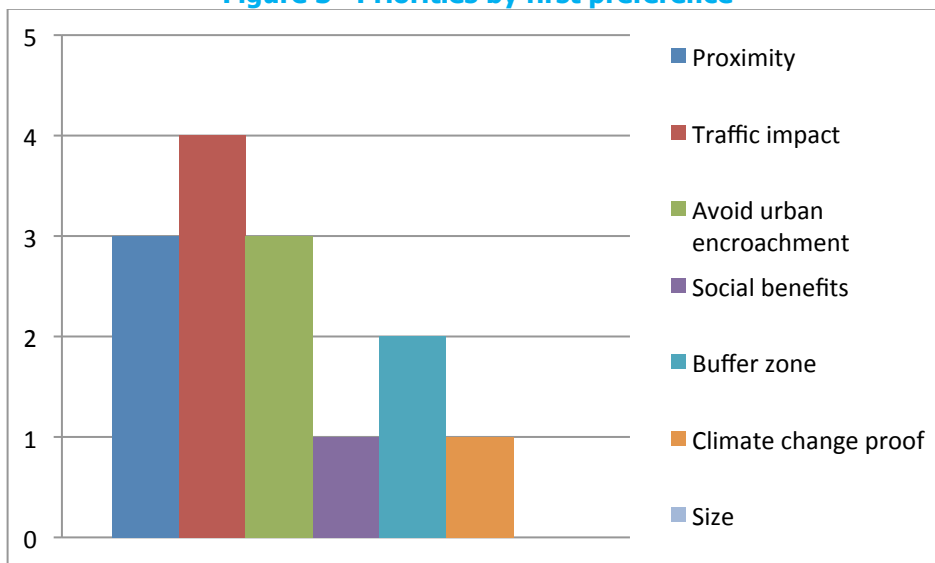
The graph below illustrates the total number of votes received by each priority.

Figure 2—Total votes to each priority



When considering only first priorities, traffic impact emerges as the highest priority (4 votes), followed by proximity and avoiding urban encroachment (3 votes).

Figure 3—Priorities by first preference



Participants were also asked to contribute any other criteria that may have been left out. The responses provided were:

- Relatively easy maintenance of the facility
- Minimise forestry and land destruction
- Sleek, modern design to make it look clean
- Compensating those affected.

Activity 4: Challenges to community acceptance

What do you think will be the main challenges in gaining community acceptance of the City of Sydney's plans for Advanced Waste Treatment?

In this activity participants were asked to think about the challenges that the City of Sydney's plans for Advanced Waste Treatment may need to address in gaining community acceptance. The challenges to emerge are detailed below. The number of responses indicates how many participants mentioned each challenge in their response.

The need to promote the project (8 responses)

Participants thought that there would be a need to promote the project, and educate residents about the technology and its benefits. One participant commented that this would mean promoting Advanced Waste Treatment as the 'best alternative to the landfill crisis'. Another was concerned that the technical details of the project would be difficult to explain. These participants highlighted the importance of promoting the project's environmental and economic benefits in order to gain community acceptance.

Noise and odour pollution (6 responses)

Another challenge raised frequently was the perception that Advanced Waste Treatment would create noise and odour pollution. Participants thought that there was a need to assure local residents that the facility would generate limited noise and odour pollution.

Traffic impact (5 responses)

Participants thought that community members may object to impacts on traffic. Participants thought that, in order to gain community acceptance, the location of an Advanced Waste Treatment facility would need to ensure limited traffic impacts, both during construction and once the facility is operational.

'Not in my backyard' (5 responses)

A number of participants thought that community members would not want an Advanced Waste Treatment facility built in their 'backyard'. As one participant commented, 'I can't imagine anyone opposing this unless it is planned for their suburb'.

Health and environmental concerns (3 responses)

Health and environmental concerns were also raised as a challenge to gaining community acceptance. Participants thought that community members would need to be assured that Advanced Waste Treatment is safe, from both a health and environmental perspective. Participants suggested that the community may be concerned about unforeseen environmental impacts.

Other

Other challenges raised were:

- Cost to residents
- Is the technology cost-effective?
- Disruption caused during construction
- Aesthetics—will it be an eyesore?
- Ensuring that there are benefits for local residents

- The objectives are long-term, meaning people may not see the benefits
 - Concern that the project may have a negative effect on property values
 - Certain groups of the community are suspicious of change
 - Locating a suitable industrial site.
-

Summary of outcomes

All participants in the workshop were supportive of the City of Sydney's *Advanced Waste Treatment Master Plan*. Reasons for this support included that the plan is 'forward-thinking', environmentally sustainable, will reduce waste to landfill, and is cost-effective.

However, some concerns were also raised, particularly around the potential location and number of facilities, the potential cost to residents, the perceived potential for environmental pollution, and the need to promote the project to gain community support.

The criteria for locating an Advanced Waste Treatment facility that were most important to participants were:

- Proximity to the source of waste
- Traffic impacts
- Avoiding urban encroachment and anticipating future land use changes
- The provision of a buffer zone
- Maximising the social benefits
- Climate change proof
- Aesthetics.

Participants also thought there would be a number of challenges in gaining community acceptance of the project, and highlighted the following as the most significant:

- The need to promote the project and educate residents about the benefits
- Noise and odour pollution
- Traffic impacts
- Proximity to residents
- Health and environmental concerns.

Despite these concerns and challenges, participants were overwhelmingly supportive of the plan.

Appendix A – Workshop Running Sheet

Advanced Waste Treatment Master Plan – Community Reference Group 10 June

5:30–6:00	Registration	Registration – sign in Informal discussions with participants	Support (CoS/Elton) Facilitators (CoS/Elton)
6:00–6:05	Introduction – <u>keep very short</u>	<i>Introduce yourself (OBS)</i> Overview of evening Clear purpose statement for workshop <i>Introduce City Council presenters</i> <i>Introduce Dr Gary Cox and Dr Alex Gold</i>	Facilitator (OBS-CoS)
6:05–6:10	Protocol – rules of the workshop	Workshop overview and protocols - one person at a time - respect each other’s views - all have a chance to talk Emergency procedures Breaks and ending on time	Facilitator (GC-Elton)
6:10-6:25	Review of workshop 1	<i>Show City of Sydney AWT Video</i> Reflections/thoughts since last meeting What we found out (summary of outcomes from last meeting)	Facilitator (OBS-CoS) Facilitator (GC-Elton)
6:25-6:35	The waste to gas solution 1	<i>Waste to gas presentation – Mark McKenzie</i> <i>The process of converting waste to gas.</i> <i>Description of the gas produced.</i> Keep to Time. Question and answers.	Expert Presenter (MMK) Participants (Individual questions and answers)
6:35-6:45	The waste to gas solution 2	<i>Use of syngas/natural gas – Mark McKenzie</i> <i>What we will do with the gas? (Outline possibilities and preferred solution.) Note issues such as air quality.</i> Keep to Time. Question and answers.	Expert Presenter (MMK) Participants (Individual questions and answers)
6:45-7:00	Individual activity	<i>Activity 1 – views on the waste to gas solution</i> <i>What is your view on the solution? (If happy, why?)</i> <i>Does it make sense? (Any misconceptions?)</i>	Participants
7:00-7:15	Break	Refreshments and opportunity for one-on-one discussions Photograph	All

ATTACHMENT C

7:15-7:20	Video	<i>Video on a real AWT plant</i>	Facilitator (MMK-CoS)
7:20-7:40	TABLE EXERCISE	<p><i>Activity 2 – The location criteria for an AWT plant.</i></p> <p><i>Explanation of the two constraints (zoning and pipeline) and discussion of locational criteria. Group discussion to gauge reactions and issues.</i></p> <p><i>Which criteria are more flexible?</i></p> <p><i>What other criteria should the City of Sydney consider?</i></p> <p><i>(Facilitators will record discussion on each table.)</i></p> <p><i>Report back and add to slide at end.</i></p>	<p>Expert presenter</p> <p>Table facilitators</p> <p>Participants (table discussion and report back)</p>
7:40-7:45	VOTING EXERCISE	<i>Activity 3 –Voting exercise –which of these locational criteria and the most important (1,2,3)?</i>	Participants individually complete voting form.
7:45-7:50	INDIVIDUAL EXERCISE	<p><i>Activity 4 – What do you think will be the main challenges in gaining community acceptance of the City of Sydney’s plans for Advanced Waste Treatment?</i></p> <p><i>Write your own ideas on the worksheet. As many as possible.</i></p>	Facilitator (GC-Elton)
7:50-7:55	Implementing the AWT Master Plan	<p><i>Next steps for City of Sydney.</i></p> <p><i>Keep this short.</i></p>	Facilitator (OBS-CoS)
7:55-8:00	<p>Feedback and Close</p> <p><u>Collect work sheets.</u></p>	<p>Feedback forms.</p> <p>Thanks for attending.</p> <p>Explain process for receiving the incentives.</p>	Facilitator (OBS-CoS)