ITEM 11. TENDER – TRIGENERATION SYSTEMS FOR CITY OF SYDNEY COUNCIL'S FACILITIES (DESIGN, INSTALLATION OPERATIONS AND MAINTENANCE)

FILE NO: S084520

TENDER NO: 1046

SUMMARY

Tenders were called for Trigeneration systems design, installation, operation and maintenance for City of Sydney facilities. This report recommends that Council reject the tenders, as recommended by the Tender Evaluation Panel and as set out in Confidential Attachment A.

The City has identified that establishment of a network of decentralised energy systems (trigeneration) has the potential to deliver significant greenhouse gas emission reductions at a cost per tonne of carbon abatement significantly lower than most other abatement technologies. The other lower cost carbon abatement technologies would not enable the City to meet its 2030 greenhouse gas emission reduction targets on their own.

Centralised energy, or centralised power generation, burns fossil fuels, primarily coal, to generate electricity. Two-thirds of primary energy is waste heat, a natural by-product of electricity generation. This is emitted into the atmosphere at power station cooling towers using significant quantities of water. Further energy is lost transporting the electricity across the grid from the Hunter Valley to Sydney so that, by the time electricity reaches the city, less than 30% of the primary energy burnt at the power stations is available for use. At the same time, power stations emit huge quantities of carbon dioxide (CO_2) and other noxious emissions from chimneys into the atmosphere along with the waste heat and water vapour from the cooling towers. A typical 1,000MW coal-fired power station emits more than 1,000 tonnes of greenhouse gas emissions per hour, representing 80% of the city's total greenhouse gas emissions.

Combined heat and power, or cogeneration (decentralised energy), generates electricity locally and more efficiently than centralised energy. This is because it does not suffer the energy losses from long-distance transmission. In addition, the waste heat from local electricity generation can be captured and utilised to heat buildings and provide hot water services. In a further step, the heat can be converted into chilled water by the use of thermally driven chillers and used to provide air-conditioning and refrigeration. This process is called combined cooling, heat and power, or trigeneration, and is up to three times more energy efficient than power stations. It also significantly reduces greenhouse gas and other noxious emissions through the increase in efficiency and the utilisation of low carbon fuels such as natural gas.

Sustainable Sydney 2030 identified trigeneration as the primary method of carbon reduction. This tender is one of the first actions by Council to deliver the Sustainable Sydney 2030 energy and climate change targets.

The response received to Council's tender process demonstrated that the City's desired outcomes are achievable, although areas of non-compliance with the tender specifications require further negotiation and resolution before proceeding.

While a full cost/benefit analysis is still to be refined and completed as part of the project, identified financial savings from the trigeneration systems indicate an attractive payback period for Council. They also indicate a comparatively low carbon abatement cost and an effective emission reduction outcome.

RECOMMENDATION

It is resolved that:

(A) Council reject the tender received for the reasons set out in confidential Attachment A to the subject report;

(B) authority be delegated to the Chief Executive Officer to enter into negotiations with suitably qualified organisations which can demonstrate a capability to provide the tendered services;

(C) a report be presented to Council for a decision regarding entering into a contract, subject to the conclusion of negotiations with suitable organisations as outlined in confidential Attachment A to the subject report; and

(D) Tender Evaluation Summary, Attachment A to the subject report, remain confidential in accordance with Section 10A(2)(d) of the Local Government Act 1993.

ATTACHMENTS

Attachment A: Tender Evaluation Summary (Confidential)

BACKGROUND

1. Sustainable Sydney 2030 is Council's plan to make Sydney green, global and connected by 2030 - reflecting our residents' aspirations for our local government area. Around 90% of respondents to the Sustainable Sydney 2030 consultation survey said that they wanted urgent action on climate change.

2. Around 80% of the City's greenhouse gas emissions are from centralised power generation, primarily coal-fired power stations, and this is where much of the cost-effective emissions reduction potential lies.

3. Objective 2.1 of Sustainable Sydney 2030 seeks to increase the capacity for local energy generation and water supply within city boundaries as part of:

   (a) Green Transformers (co-location of trigeneration, recycled water treatment and waste collection/utilisation); and

   (b) the Green Infrastructure Plan comprising decentralised energy, renewable energy, recycled water, alternative waste treatment facilities and automated waste collection.

4. Objective 2.4 seeks to demonstrate leadership in environmental performance through the City of Sydney's operations and activities.

5. Sustainable Sydney 2030 anticipates a 70% reduction in greenhouse gas emissions. A large part of this target will be realised through the installation of at least 330MWe of trigeneration into the City's Local Government Area (LGA). This trigeneration would supply 70% of the LGA's electricity requirements by 2030.

6. The first step to achieving this is for the City of Sydney to 'show by doing' by supplying its own buildings with trigeneration. To achieve this, the City of Sydney issued the tender which is the subject of this report. This tender was based on an output performance specification. This is where the Contractor designs, installs, operates and maintains their own plant to meet the specified performance requirements – that is the maximum energy provision and emissions reductions that could be delivered by their design. The Council buildings specified in the tender were:

   (a) Victoria Park Pool;

   (b) Ian Thorpe Aquatic Centre;

   (c) Cook and Phillip Park Pool;

   (d) Andrew Boy Charlton Pool;

   (e) Prince Alfred Park;

   (f) Town Hall Precinct – Phase 1;

   (g) Customs House; and

   (h) potentially other sites.

7. All of Council's buildings and operations were included in the request for tender to provide maximum opportunity to tenderers to export surplus electricity from Council cogeneration/trigeneration sites to supply electricity to other Council owned sites so that Council's property portfolio as a whole could be decarbonised as far as possible.

8. The request for tender also provided potential opportunities for cogeneration/ trigeneration to supply not only to Council's buildings, but also for other non-Council buildings. This was included to ascertain interest and test the market for companies who could develop decentralised energy networks across the City of Sydney Local Government Area (LGA). The LGA's energy needs were identified in the interim Decentralised Energy Master Plan – Trigeneration, which was also provided to all tenderers.

9. Tenderers were required to have a demonstrated capability in the:

   (a) design of cogeneration/trigeneration installations;

   (b) installation of cogeneration/trigeneration installations;

   (c) commissioning of the systems; and

   (d) operation and maintenance of the plant and equipment on a long-term contract basis.

10. Tenderers were also required to generate maximum electricity from the cogeneration/trigeneration systems, but within energy efficiency parameters. Australia does not have an accredited energy efficiency rating system for decentralised energy, so the UK's Combined Heat and Power Quality Assurance program was specified against which tenderers were required to submit the Combined Heat and Power Quality Assurance Index for each installation. The Combined Heat and Power Quality Assurance is a tax instrument in the UK and only energy efficiency ratings above a specified Combined Heat and Power Quality Assurance Index are exempt from the UK's Climate Change Levy. The Combined Heat and Power Quality Assurance qualifying Index Number was specified as the benchmark for the energy efficiency of the cogeneration/trigeneration systems submitted as part of this tender.

11. Trigeneration at this larger scale, able to export electricity to other City sites is a fledgling industry in Australia. In assessing tenders, it was also important to consider the tender submissions in the light of the emerging decentralised energy market in Australia, the regulatory barriers to decentralised energy, future price increases in the electricity market, the availability and future price increases in the natural gas market, carbon abatement and any future price on carbon.

Option A – Design, Build, Operate & Maintain (Council Owned Model)

12. Council requested tenders for trigeneration to supply its own buildings as a 'show by doing' project based on an output performance specification. This is where the contractor designs, installs, operates and maintains its own plant within Council's buildings against the specified performance requirement. The proposed solution would produce cleaner energy for use at the sites where it is produced, with the balance utilised within Council's building portfolio, significantly reducing greenhouse gas emissions and reducing Council's exposure to the rapidly rising market costs and exposure to the proposed carbon price of an equivalent amount of electricity.

13. Under this model, Council would pay for the initial capital expenditure, an annual operating and maintenance cost, together with the natural gas consumed to produce the requisite amount of energy. Council effectively bears the risks of operational performance and gas price but receives all of the benefits of the trigeneration systems, ie, electricity, heating and cooling outputs.

Option B – Design, Finance, Build, Operate & Maintain (Private ESCO Model)

14. The request for tender also provided for the option of a design, finance, build, operate and maintain or energy services company model. This would be undertaken under a long term energy services contract with Council.

15. The provision of energy services is different to the provision of energy in that, for energy supply, only units of energy are supplied by energy companies to customers from a national energy market; whereas energy services provide a combination of services including the provision of plant, equipment, infrastructure, fuel supply, operation and maintenance and charges for these services by way of an energy services charge rather than just an energy charge. The customer receives a much wider range of services and benefits with energy services, and companies that provide these energy services are called Energy Services Companies (ESCOs) to differentiate themselves from energy companies.

16. Tenderers were required to set out the capital contribution required from Council to ensure that Council pays no more under the proposal than it currently pays for its electricity. The contribution allows Council to compare the cost of owning the plant to that of the contractor owning the plant and supplying power to Council. It also allows Council to calculate the cost per tonne of greenhouse gas emissions reduction from decentralised energy. Tenderers were required to submit an energy services index that they would utilise to adjust prices going forward.

17. The request for tender specified that the selection of this option by Council would be subject to negotiation.

Low Carbon Zones

18. The specification also provided for Council's trigeneration project to provide the opportunity, working with the City, to increase the trigeneration capacity and networks to connect, distribute and supply energy to nearby buildings and consumers to create or catalyse low carbon zones.

19. The tenderers were required to set out whether they have the capability and/or intent to capitalise on this potential opportunity.

Option C - Sydney Local Government Area ESCO Option

20. The tenderers were also required to set out their interest and capability in establishing a Sydney Local Government Area energy services company or ESCO with Council or related entity in developing a Sydney Local Government Area trigeneration system based on low carbon zones (design, finance, build, operate and maintain model).

21. In view of the nature of the tender options, it would be possible for Council to accept either Council owned option or the ESCO (private) owned option with or without the low carbon zones or Sydney Local Government Area ESCO option.

THE NATIONAL ELECTRICITY MARKET

22. The National Electricity Market (NEM) was designed to facilitate the generation, transmission, distribution and supply from very large remote, primarily coal fired power stations. Although not shown in this way on customers' electricity bills, the unit price of electricity is made up as follows:

    (a) the wholesale price of electricity for generating electricity from the power stations to the transmission network (the grid). The power stations are owned by the various power station generators;

    (b) the transmission use of system charge plus losses for transmitting electricity at very high voltages from the power stations to the grid supply points via the transmission network (the grid) to the various distribution networks. The transmission network is owned by Transgrid;

    (c) the distribution use of charge plus losses for distributing electricity from the grid supply points via the local public wires distribution networks to customers. The distribution network for the City's local government area is owned by Ausgrid (formerly Energy Australia); and

    (d) the costs of supplying retail electricity to customers which collects the above charges and costs on behalf of the generators, transmission network operator (Transgrid) and distribution network operator (Ausgrid) as well as the profit margin for the electricity retailer which represents about 9% of the total cost of customer's electricity bills and is the only competitive element in customer's electricity bills.

23. As the National Electricity Market was designed for centralised energy only, decentralised energy is penalised with various regulatory barriers which make decentralised options uneconomic in the National Electricity Market.

THE EMERGING DECENTRALISED ENERGY MARKET IN AUSTRALIA

24. Decentralised energy (cogeneration and trigeneration) in Australia is in its infancy compared to other countries around the world. Australia employs a relatively small amount of decentralised energy relative to other parts of the world such as Europe, Asia and the United States. In 2006, Australia ranked 34th (behind countries such as South Africa, Indonesia and Uganda) out of 40 countries surveyed for decentralised energy generation by the World Association of Decentralised Energy. Around 5% of total generation in Australia comes from decentralised sources, primarily in large industrial applications, compared with 40% in the Netherlands and 55% in Denmark.

25. There are a small number of trigeneration plants operating in Australian cities, including a number of small scale plants in commercial and other properties. These are primarily driven by the desire to achieve a high NABERS or GreenStar rating to attract high profile anchor tenants who want to occupy the greenest buildings available. However, all these plants have one thing in common: the downsizing of plant beyond what could be delivered by trigeneration to avoid exporting excess electricity into the public distribution network because an electricity retail licence is needed to economically export electricity to the network.

26. Council's Trigeneration project represents a seismic shift away from this approach. It seeks to maximise the potential of trigeneration to maximise electricity generation, within energy efficiency criteria, rather than minimise it to barely achieve NABERS and GreenStar ratings. This approach will provide substantially greater reductions in greenhouse gas emissions. For this to happen, a way needs to be found to export surplus electricity across the public wires distribution network to supply other buildings that Council owns. This is why Council included all of its buildings and operations in Council's Trigeneration tender.

REGULATORY BARRIERS TO DECENTRALISED ENERGY

27. There are a number of regulatory barriers to decentralised energy in Australia. The decentralised energy proponent cannot supply electricity into the National Electricity Market (NEM) via the public wires distribution network without a retail licence and a private wire network is required to be disconnected from the public wires distribution network.

28. There has been no study carried out in Australia identifying the real costs and economic barriers to decentralised energy participating in the National Electricity Market. This is well hidden, as it was in the UK until 2007 when the London Climate Change Agency (LCCA) submitted its evidence to the Office of Gas and Electricity Markets (Ofgem) as part of the UK Government's Distributed Energy Review. The evidence included a detailed analysis of the real costs of decentralised energy participating in the UK's National Electricity Trading Arrangements (NETA) (similar to Australia's NEM) commissioned by the LCCA. This showed that the costs for a 5MWe decentralised energy scheme was £77,626 ($124,402) to £151,226 ($241,962) on establishment and £274,634 pa ($439,414 pa) in operation and for a 50MWe decentralised energy scheme was £152,826 ($244,522) on establishment and £2,583,296 pa ($4,133,274) in operation.

29. The London Climate Change Agency's evidence showed that decentralised energy participating in the UK's National Electricity Trading Arrangements was clearly uneconomic due to the UK's electricity regulatory regime. This was addressed by the Electricity Supply Licence Modification Order 2009, which enabled decentralised energy proponents to supply export electricity to any consumer over the public wires distribution network (not the transmission grid network) and so avoid the very high and inappropriate transaction costs of participating in National Electricity Trading Arrangements. This process is referred to as 'virtual private wire' over public wires with the transaction costs commensurate with the scale of generation, distribution and supply, ie, Distribution Use of System and enabling agreement charges and costs.

30. The real cost of decentralised energy participation in Australia's National Electricity Market is likely to be similar to, if not worse than, the UK's National Electricity Trading Arrangements, presenting a significant economic barrier to decentralised energy in Australia which will not be addressed until the Australian Government takes similar action as the UK Government to remove the regulatory barriers to decentralised energy.

31. The Prime Minister's Task Force on Energy Efficiency recognised that the current National Electricity Market created regulatory barriers to the deployment of decentralised energy in Australia. It recommended the creation of energy efficient hubs or precinct based decentralised energy, but ignored Council's proposal to remove the regulatory barriers to decentralised energy by implementing an electricity exempt licensing regime for smaller systems and a decentralised energy licence for larger systems similar to the UK. The Task Group report instead concentrated on comparatively minor issues such as streamlining the connection process.

32. However, there is a half-way house to minimise the effects of the regulatory barriers to decentralised energy. An existing licensed electricity retailer (whose National Electricity Market establishment and operational costs had already been defrayed by other parts of their business) could trade the surplus export electricity between other Council sites on the public wires distribution network (not the transmission grid) and so avoid National Electricity Market costs for decentralised energy, other than the Distribution Use of System charges to distribute the export electricity. This would increase the economic value of the export electricity traded in this way by 325% for peak electricity and by 225% for shoulder electricity. The trading of electricity would need to be accounted for every 30 minute period throughout the year.

FUTURE PRICE INCREASES IN THE ELECTRICITY MARKET

33. Over the period 2010/15, electricity network businesses in Australia are proposing to spend over $46 billion on upgrading and extending the electricity network. This expenditure, approved by the Australian Energy Regulator, is more than that proposed for the National Broadband Network and is the main driver for the current sharp rise in electricity bills. In NSW, electricity networks are undertaking capital expenditure of $17.4 billion over the five years to 2013/14. This represents $2,400 per person and an 80% increase on the previous five year determination period.

34. Average Ausgrid (formerly Energy Australia) network charges are expected to rise by as much as 83% during the determination period, with the proportion of electricity bills that go to pay network charges estimated to rise from 40% to almost 60%. According to the NSW Independent Pricing and Regulatory Tribunal, this increase in network charges (along with the much smaller contributions in energy and retail components) has resulted in average increases in the regulated Energy Australia retail tariffs of 22% in 2009/10 and will result in further increases in average retail charges of around 10% to 11% a year in subsequent years.

35. Of Ausgrid's total $8.1 billion planned capital expenditure, a significant proportion is being invested in the Sydney CBD to meet load growth and enhanced reliability of supply requirements. According to Ausgrid, it is likely that another $8 billion of investment in its network will be required from 2014 to 2019, similar to the $8.1 billion being invested in 2010 to 2014.

36. In addition, two NSW Government owned generators, Macquarie Generation and Delta Electricity, have proposed an additional 4,000MW of coal or gas fired base load power stations at Bayswater in the Hunter Valley and Mount Piper near Lithgow at an estimated cost of between $4.6 and $7 billion, which may also feed into future electricity retail costs.

37. Council's trigeneration project would avoid distribution network charges for all decentralised electricity generated and consumed on site and avoid transmission and other network charges completely for all decentralised electricity generated consumed on and off site within Ausgrid's distribution network.

AVAILABILITY AND FUTURE PRICE INCREASES IN THE NATURAL GAS MARKET

38. Natural gas is imported into NSW by pipeline from the Cooper Basin in South Australia and Victoria. The Cooper Basin has the most important on-shore natural gas deposits in Australia, which were originally discovered in the 1960s. Overall, there are 160 gas fields containing 630 producing gas wells pipelining natural gas to the major markets in Brisbane, Adelaide and Sydney.

39. Australia's off-shore natural gas reserves are even greater than on-shore reserves. In October 2010, natural gas was found 55km off-shore from Newcastle in a huge basin stretching from Newcastle to Wollongong. These gas reserves are estimated to contain 13.2 trillion ft^3 of natural gas valued at $50 billion.

40. The issue for Council is not the availability of natural gas, but the increase in the local natural gas pipeline capacity to distribute the volumes of natural gas that will be needed to deliver the 360MWe in the Trigeneration Master Plan. This is not an issue for Council owned or Energy Services Companies-owned options of Council's Trigeneration tender, or even an issue for the first phases of the Sydney Local Government Area Energy Services Companies option, but will become an issue that will need to be addressed over time to the deliver the 360MWe of trigeneration in the Trigeneration Master Plan.

41. The economics of increasing natural gas pipeline capacity improves with the delivery and utilisation of greater volumes of natural gas since Jemena, the city's natural gas pipeline distributor, is required to finance pipeline capacity from the increased Distribution Use of System charges and customers are only charged for a contribution for any economic shortfall. Council will be carrying out further work with Jemena to determine the most economic way to deliver increased pipeline capacity for the low, medium and high growth scenarios in the Trigeneration Master Plan.

42. Regarding future price increases in the natural gas market, the NSW Independent Pricing and Regulatory Tribunal has approved price increases for natural gas of between 12% and 17% from 2011 to 2013 depending on where the gas is consumed in NSW.

CARBON ABATEMENT

43. Carbon abatement is the cost per tonne of carbon abated. The cost of carbon abatement for Council's trigeneration project can be compared with other carbon abatement technologies [1], as follows:-

1 Source: The Allen Consulting Group (2010)

Energy Efficiency in Commercial Property	\$43 to \$63/Tonne CO_{2e}
Decentralised Energy (Trigeneration Master Plan)	\$45 to \$65/Tonne CO_{2e}
High Capacity Wind Energy	\$47 to \$67/Tonne CO_{2e}
Small Hydro	\$47 to \$67/Tonne CO_{2e}
Combined Cycle Gas Turbine (CCGT)	\$53 to \$73/Tonne CO_{2e}
CCGT with Carbon Capture & Storage	\$79 to \$99/Tonne CO_{2e}
Solar Thermal	\$93 to \$113/Tonne CO_{2e}
Greening Homes (Full Upgrade)	\$95 to \$115/Tonne CO_{2e}

Household Solar PV	\$104 to \$124/Tonne CO_{2e}
Coal Power Station with Carbon Capture & Storage	\$106 to \$126/Tonne CO_{2e}

44. Although energy efficiency is generally the cheapest form of carbon abatement it cannot deliver the City's 70% reduction in greenhouse gas emissions on its own. It is one of the suite of measures that the City is undertaking to deliver the 70% target on its own buildings and operations but it cannot decarbonise the coal fired grid or deliver the City's other target to supply 70% of the City's electricity requirements from trigeneration.

45. It should also be noted that the last time that Council purchased Green Power the cost per tonne of carbon offset was \$46.24 per tonne with no return on expenditure at all.

CARBON PRICE

46. Since the request for tender, the Australian Government has announced a carbon price scheme that will be rolled out from July 2012. Neither the carbon price scheme nor the amount has yet been announced, but the Trigeneration project would significantly reduce Council's exposure to a price on carbon.

INVITATION TO TENDER

47. Request for expressions of interest were advertised and returned on 19 December 2009.

48. Selected organisations were invited to tender on 28 July 2010.

49. A joint briefing for all tenderers was held on 16 August 2010.

50. Tenders closed on 28 January 2011.

TENDER SUBMISSIONS

51. One submission was received from the following organisation:

- Cogent Energy Pty Ltd

52. No late submissions were received.

TENDER EVALUATION

53. The Tender was examined and evaluated according to the following criteria:

(a) presentation of the tender, particularly the ease of understanding;

(b) cost:

(i) the design and construction lump sum price and schedule of prices; and

(ii) the operation and maintenance annual price;

(c) The output performance specification requirements:

(i) reduction in CO2 emissions;

(ii) electricity generation capacity and annual production of a Combined Cooling and Heating Plant or trigeneration plant;

(iii) heat and heat to cool generation capacity and useful annual production of Combined Cooling and Heating Plant or trigeneration plant;

(iv) electrical and overall efficiency of the Combined Cooling and Heating Plant or trigeneration plant; and

(v) energy services prices;

(d) Sydney Local Government Area Decentralised Energy Network Development Capability:

(i) organisation; and

(ii) business model (Private Energy Services Company);

(e) ability and willingness to enter into negotiations with Council regarding a public/private joint venture (Sydney Local Government Area ESCO);

(f) conformity with the request for tender;

(g) financial stability and financial position of the tenderer; and

(h) demonstrated capacity to fulfil the OHS & R and environmental requirements of the project.

54. The above criteria are not in order of priority, not exhaustive, and were not given equal weight in evaluation.

55. The tenderer presented to the Evaluation Panel. This gave them the opportunity to highlight the benefits of their offer and for the Evaluation Panel to clarify any issues.

56. All members of the Tender Evaluation Panel have signed Pecuniary Interest Declarations. No pecuniary interests were noted.

57. The details of the tender received, benchmarking, carbon abatement and comparisons between the different options is provided in the Confidential Tender Evaluation Summary – Attachment A.

58. The tender and procurement process has been overseen by an external independent probity auditor in accordance with the Probity and Process Plan adopted by Council. The probity auditor was present at all tenderer briefings, tenderer interviews and Evaluation Panel meetings.

FINANCIAL IMPLICATIONS

59. There are significant financial costs and benefits that will arise from the proposed introduction of trigeneration/cogeneration energy systems; however, the recommendation leaves the current situation intact and in line with the current budget.

60. A full and detailed financial analysis, of all viable options against the current costs incurred, will be prepared as part of the proposed negotiations.

RELEVANT LEGISLATION

61. The tender has been conducted in accordance with the Local Government Act 1993, the Local Government (General) Regulation 2005 and Council's Contracts Policy.

62. Information provided by tenderers which is commercial-in-confidence has been protected and will not be disclosed in accordance with section 10A(2)(d) of the Local Government Act 1993. A consistent standard for all tenderers has been used in assessing any request for confidentiality by a tenderer.

63. It is not considered to be in the public interest to make commercial-in-confidence information available as it would discourage future tenders from companies who do not wish this information to be in the public domain.

CRITICAL DATES / TIME FRAMES

64. The tender document specified an indicative contract period of 18 calendar months for the Council-owned buildings element of the project and tenderers were required to submit any variation to this indicative contract program at the time of tendering.

PUBLIC CONSULTATION

65. No specific public consultation was undertaken with respect to this tender. However, this tender has been developed in direct response to the local energy generation and water supply targets within Council boundaries as part of Green Transformers (co-location of trigeneration, recycled water treatment and waste collection/utilisation) and the Green Infrastructure Plan in Sustainable Sydney 2030 which was subject to the most extensive public consultation ever undertaken by Council.

66. Details of Council's trigeneration tender was included in Allan Jones MBE, Council's Chief Development Officer, Energy & Climate Change, City Talk to the general public at Sydney Town Hall on 25 October 2010 and in his presentations to the Inner Cities Lord Mayors Forum on 23 August 2010, New South Wales Local Government Green Infrastructure Briefing on 19 August 2010 and the Local Government and Shires Association Sustainability Workshop on 18 March 2010.

MICHAEL LEYLAND
Director City Projects

Allan Jones MBE
Chief Development Officer, Energy & Climate Change

MONICA BARONE
Chief Executive Officer