

ITEM 8. TRIGENERATION - AUTHORITY TO ENTER INTO A DEVELOPMENT AGREEMENT FOR TRIGENERATION ENERGY SERVICES ACROSS THE CITY OF SYDNEY LGA AND ENERGY SALE AGREEMENTS FOR ALL CITY OF SYDNEY OWNED FACILITIES

FILE NO: 2012/207375

SUMMARY

Sustainable Sydney 2030 targets a 70% reduction in the City's and the City of Sydney Local Government Area greenhouse gas emissions compared to 2006 levels. Around 80% of the City's greenhouse gas emissions are from centralised power generation, primarily coal-fired power stations.

In the draft final Decentralised Energy Master Plan – Trigeneration, it is estimated that 477MWe of trigeneration and cogeneration combined with other demand measures would deliver up to 33% reduction in the city's total greenhouse gas emissions and would provide 70% of the city's electricity requirements by 2030.

On 5 December 2011, Council endorsed Cogent Energy (Cogent), which is fully owned by Origin Energy, as the preferred trigeneration energy services provider, and delegated authority to the Chief Executive Officer to progress negotiations with the intention of entering into a heads of agreement by March 2012, and final agreement in mid 2012.

On 2 April 2012, Council authorised the Chief Executive Officer to execute a heads of agreement with Cogent Energy. The heads of agreement was signed on 3 April 2012, which established the principles to be incorporated into a set of final contracts planned for mid 2012.

A negotiation panel comprising senior staff, supported by expert advisers, has conducted contract negotiations with Cogent. The attached Redacted Development Agreement and Confidential Energy Sale Agreements have been developed by the parties from the principles established in the heads of agreement. These Contracts and associated documents will progressively deliver trigeneration energy services for the City of Sydney buildings and operations and across the City of Sydney Local Government Area.

RECOMMENDATION

It is resolved that:

- (A) Council approve the execution of the Development Agreement and Parent Company Guarantee, shown at confidential Attachment A to the subject report, with Cogent Energy Pty Ltd for the delivery of Trigeneration Energy Services across the City of Sydney buildings and operations and the City of Sydney Local Government Area, and authority be delegated to the Chief Executive Officer to approve minor amendments and execute the Development Agreement;

- (B) Council approve the issuing of Investment Confirmation Certificates in relation to the following projects: Green Square Energy Centre and Thermal Reticulation Network, Prince Alfred Park Pool Energy Centre and Thermal Reticulation Network, up to the amounts stated in confidential Attachment D to the subject report;
- (C) Council note the Energy Sale Agreements, shown at confidential Attachment B to the subject report, with Cogent Energy Pty Ltd for the sole supply of electricity to all Council owned buildings, street and public domain lighting and for thermal energy supply to Council owned buildings for 20 years;
- (D) authority be delegated to the Chief Executive Officer to execute the Thermal Use of System Agreements, Thermal Reticulation Network Maintenance Agreements and Voluntary Planning Agreement Tripartite Side Deed when finalised and approve other Conditions Precedents to the Development Agreement other than those noted in clause (G) below;
- (E) authority be delegated to the Chief Executive Officer to issue Investment Confirmation Certificates for Town Hall House Trigeneration Development, and two private Trigeneration developments in the Broadway/Pymont precinct, noted in Confidential Attachment D where offers by Cogent are acceptable to those customers and where Council's contribution is less than the amount stated in confidential Attachment D to the subject report;
- (F) Council approve the extension of KPMG's existing contract to provide independent financial assessment of the trigeneration service proposals, to the value identified within Confidential Attachment D to the subject report, without tendering for these services as the extenuating circumstances that arise from their involvement in the initial phase of this project would not allow a competitive tender process to provide a satisfactory result within the time constraints of delivering the required services;
- (G) Attachments A, B, C and D to the subject report remain confidential in accordance with Section 10A(2)(d) of the Local Government Act 1993 as they have not been finalised and contain commercial information of a confidential nature that would, if disclosed, prejudice the commercial position of Cogent and Council;
- (H) a further report be submitted to Council to approve execution of the Energy Sale Agreements and execution of Property Leases for Green Square and Prince Alfred Park Pool and issuing of Project Initiation Certificates for Green Square and Prince Alfred Park Pool for these projects; and
- (I) Council note that, if approved, the Development Agreement will be executed prior to the caretaker period, but will not take effect until all of the Conditions Precedent are met and no documents will be executed during the caretaker period and final decisions to approve key Conditions Precedent, clauses (C) and (G) above, will be taken by the incoming Council.

ATTACHMENTS

Attachment A: City of Sydney Trigeneration Development Agreement and Parent Company Guarantee between the Council of the City of Sydney and Cogent Energy Pty Ltd in respect of the delivery of trigeneration services for the City of Sydney buildings and operations and City of Sydney Local Government Area (Confidential)

Attachment B: Energy Sale Agreements between the Council of the City of Sydney and Cogent Energy Pty Ltd in respect of the sole supply of electricity to all Council owned buildings, street and public domain lighting and thermal energy to Council owned buildings (Confidential)

Attachment C: Advisers opinions (Confidential)

Attachment D: Funding commitments and pricing information and advisers opinions (Confidential)

(As Attachments A, B, C and D are confidential, they will be circulated separately from the agenda paper and to Councillors and relevant senior staff only.)

BACKGROUND

1. Sustainable Sydney 2030 is the City's vision to make Sydney green, global and connected by 2030 - reflecting our residents' aspiration for our local government area. Around 90% of respondents to the draft vision said that they wanted urgent action on global warming or climate change.
2. Around 80% per cent 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. Trigeneration is the primary and most economic of the Green Infrastructure Plan master plans which other master plans will follow, taking advantage of common plant space and infrastructure routes, wherever possible.
4. The interim Decentralised Energy Master Plan – Trigeneration established that at least 360MWe of trigeneration could be installed in the four energy dense zones of the LGA – CBD North, CBD South, Pyrmont/Broadway and Green Square. This would deliver a 39% to 56% reduction in greenhouse gas emissions for buildings connected to the decentralised energy network and a 27% reduction in total LGA greenhouse gas emissions (including reductions in greenhouse gas refrigerants used by electric air conditioning chillers), delivering 70% of the total LGA electricity requirements by 2030.
5. The draft final Trigeneration Master Plan now on exhibition shows that the expanded precinct scale trigeneration capacity at Green Square, four additional precinct scale trigeneration 'hot spots' outside the original four energy dense zones, and cogeneration for the remainder of the LGA would increase trigeneration/cogeneration from 360MWe to 477MWe with up to 33% reductions in total LGA greenhouse gas emissions.
6. The Council's Trigeneration Master Plan predicts that, if fully developed, Trigeneration will reduce electricity consumption by 30% and electricity peak demands by 60% across the four low carbon zones and will supply low carbon electricity and zero carbon thermal energy (heating and cooling) to connected buildings.
7. The Trigeneration Master Plan envisages that natural gas would be initially used as a transitional fuel to run the trigeneration engines, but that over time renewable gases and fuels could be produced from waste derived from renewable feedstocks on a large scale to replace natural gas. The potential for renewable gases and fuels for the trigeneration system will be included in the Decentralised Energy Master Plan – Renewable Energy to be submitted to Council later this year.

PROCUREMENT

8. A request for expressions of interest was advertised with returns requested by 19 December 2009. Selected organisations were invited to tender on 28 July 2010 and tenders closed on 28 January 2011. One non-conforming tender was received.

9. On 4 April 2011, Council resolved to reject the tender received and to grant delegated authority to the Chief Executive Officer to enter into negotiations with suitably qualified organisations which could demonstrate a capability to provide the tendered services and that a report be presented to Council for a decision regarding entering into a contract, subject to the conclusion of negotiations with suitable organisations.
10. It is also recommended that the ongoing engagement of KPMG as independent financial and commercial advisers, to finalise negotiations and arrive at project initiation, be approved in accordance with the information provided in Confidential Attachment D.

NEGOTIATIONS

11. A negotiation panel was established comprising senior staff, supported by expert advisers, to conduct negotiations with suitably qualified organisations and the subsequent heads of agreement and contract negotiations with Cogent Energy.
12. On 5 December 2011, Council resolved to endorse Cogent Energy as the preferred energy services provider to progress negotiations for trigeneration energy services within the City of Sydney Local Government Area, and granted delegated authority to the Chief Executive Officer to negotiate with Cogent Energy to seek to develop a heads of agreement for the provision of trigeneration energy services. Council also resolved that a report be presented to Council for a decision regarding entering into a heads of agreement, subject to the conclusion of successful negotiations with Cogent Energy.
13. On 6 February 2012, Council resolved to grant delegated authority to the Chief Executive Officer to commit the City to reimburse Cogent Energy up to \$1M for payments to external specialist engineering consultants and Cogent design staff incurred in the design of trigeneration systems, should the project not proceed with Cogent Energy. This action was necessary to maintain the timeframe required to meet Council's obligations for provision of green infrastructure services to the Green Square development and other precincts.
14. On 2 April 2012, Council resolved to enter into a heads of agreement with Cogent Energy. The heads of agreement was signed on 3 April 2012, which established the principles to be incorporated into a set of final contracts planned for mid 2012.
15. A suite of program agreements have been developed by the parties to establish the contractual framework under which the Trigenation services will be delivered. These are:
 - (a) Development Agreement;
 - (b) Council Energy Sale Agreements (ESA);
 - (c) Thermal Use Of System Agreement;
 - (d) Thermal Reticulation Network Maintenance Agreement;
 - (e) Construction Licence;
 - (f) Thermal Reticulation Network Area Maintenance Licence;

- (g) Plant Area Lease;
 - (h) Plant Area Sublease;
 - (i) Parent Company Guarantee from Origin Energy; and
 - (j) Voluntary Planning Agreement Side Deed.
16. The negotiation panel which conducted negotiations with Cogent Energy comprised senior staff. In addition, the following advisers provided expert advice to the negotiation panel:
- (a) financial assessment adviser (KPMG);
 - (b) legal advisers (Clayton UTZ);
 - (c) technical advisers (Prendergast Projects and AECOM);
 - (d) probity adviser (Procure Group); and
 - (e) other City staff from legal, finance, property, sustainability and procurement.

ADVISERS OPINIONS

17. Procure Group monitored the negotiation process up until May 2012. Their report concluded that no issues of a probity nature had come to their attention which would lead them to conclude that the process followed by the City in the negotiations with Cogent up to the stage of entering into the Heads of Agreement had not been conducted in a fair and equitable manner with due regard to probity.
18. Council has received opinions from key advisers in relation to the risk profile and acceptability of the initial program agreements. These are included at confidential Attachment D.

SCOPE

19. The scope of the Program includes the design, construction, funding, operation and maintenance of decentralised energy systems. These provide cogeneration and trigeneration of electricity and thermal energy from each plant, and the delivery of thermal energy through a thermal energy reticulation network to supply heating and cooling (via heat fired absorption chillers) to buildings in precincts within the Local Government Area. Implementation will be over three stages during the investment period.
20. The first stage 1 commences development of Trigeneration capacity at Prince Alfred Park and Green Square and the supply of low carbon electricity to all Council buildings and operations. The Prince Alfred Park trigeneration energy centre will also supply thermal energy to Prince Alfred Park pool and the first stage of the precinct thermal reticulation network to the boundary of Chalmers Road. It is also planned to include the primary thermal reticulation network to the Green Square Town Centre development area from the Green Square trigeneration energy centre at the old South Sydney Hospital site.

21. The second stage anticipates expansion of the stage 1 precincts, including development of Town Hall House/Sydney Town Hall and Pyrmont/Broadway Trigeration precincts, stage 2 of the thermal reticulation network from the Prince Alfred Park trigeneration energy centre, as well as future Trigeration developments, amounting to approximately 60 MWe.
22. Stage 3 deals with delivery of the balance of projects set out in the revised Trigeration Master Plan, which could potentially be up to 477MWe.

KEY OBLIGATIONS OF THE PARTIES

23. Cogent's key obligations under the contracts are to:
 - (a) identify and assess facilities for inclusion in the program;
 - (b) design, construct, operate and maintain the trigeneration facilities and thermal reticulation networks;
 - (c) promote the Trigeration services to potential customers and seek to create new Precincts and expand existing Precincts;
 - (d) retail electrical and thermal energy to customers at competitive market rates; and
 - (e) provide funding for the program subject to satisfaction of investment preconditions.
24. Council's key obligations under the contracts are to:
 - (a) promote the Program to property developers, building owners and occupiers, building managers and other potential customers
 - (b) identify and assess proposed facilities for inclusion in the Program;
 - (c) own the thermal energy reticulation network;
 - (d) provide Cogent with access to, or interests in, land to establish Trigeration facilities;
 - (e) be a foundation customer for the purchase of energy and purchase all of its energy requirements from Cogent for a proposed term of 20 years; and
 - (f) provide funding for the program subject to satisfaction of investment preconditions.

AGREEMENTS

DEVELOPMENT AGREEMENT

25. The Development Agreement describes the parameters under which each party will invest in identified projects, and the operating arrangements once a project is initiated. It provides for minimum funding commitments for Stages 1 and 2 for Council of \$50M and for Cogent as set out in confidential Attachment D. It is anticipated that these funds will deliver the first 60 MWe of the program. Additional funding to further expand the program for stage 3 may be contributed by agreement.

26. In order to develop a city-wide Trigeneration network, it will be necessary to build Trigeneration energy centres with greater capacity than can be utilised at the time of project initiation to service future energy demands for the precincts. Funding contributions from Council may be required when electricity or heat sales from the facility are significantly less than the capacity of the equipment being installed to provide for future growth.
27. Similarly, thermal reticulation networks will need to be sized for the full thermal energy loads of the precincts in the future, as set out in the Trigeneration Master Plan, even if the thermal energy is not wholly consumed by the first buildings connected to the trigeneration energy centres. This will impact on the project economics, so it will be necessary for Council to forward fund the full sized thermal reticulation networks serving the first stages of connected buildings in the precincts. The thermal reticulation network is Council's asset.
28. In the scenarios described above, Council will be taking the risk that the extra capacity it is paying for will be ultimately utilised.
29. Council's contribution of funds to a facility, where necessary, will effectively subsidise the capital cost of the project to Cogent in order for the project to meet their minimum investment return. Council's funding contribution will be expressed in terms of the carbon abatement to Council over the life of the project to determine if the project is a competitive carbon abatement option.
30. As demand for Trigeneration increases, so will revenue. The agreement provides for Council to be reimbursed a portion of revenue from thermal energy sales, as noted in Confidential Attachment D, above those sales contemplated at the time of the initial investment, up to the point it has recovered all of its contribution.
31. For Stages 1 and 2, the agreement defines a set of investment preconditions to be satisfied before the parties develop a trigeneration facility. An investment review process will be undertaken as each new project is developed. Should the investment preconditions be satisfied for a project, both parties would be bound to provide funds to the project. For Stage 3 projects, Council is not bound to invest but may invest, as agreed between the two parties.
32. The key investment preconditions are:
 - (a) for Cogent, that each project meets Cogent's investment return requirements and it has established a minimum customer demand for electricity at project initiation; and
 - (b) for Council, that the carbon abatement to Council cost is acceptable, Council is satisfied with expected plant reliability and thermal reticulation network design, and satisfied that it can provide the required land leases and licences (other than in respect of third party land).
33. The proposed investment phase is for 10 years, with an option to extend for a further 10 years. The operating phase is proposed to be 20 years from the date the last facility built under the agreement commences commercial operation. The investment and operating phases combine to provide for a minimum contract period of approximately 30 years and a maximum period of approximately 40 years, by agreement, should the investment phase be extended.

34. Performance criteria are defined for Cogent to design, construct, operate and maintain the trigeneration energy centres and Council's thermal reticulation network. Key performance criteria include reliability of supply and plant efficiency to ensure that the reductions in greenhouse gas emissions are delivered.
35. Council has rights under the contract to enforce performance if Cogent has not rectified the problem in a reasonable time, including, subject to the nature and severity of the problem, to withhold funding (but only where Cogent has failed to rectify a failure to meet minimum performance requirements during the operating phase), step-in rights to rectify the problem at Cogent's cost, or terminate the agreement, but only after the end of a cure process.
36. Cogent has the right to terminate the agreement for, amongst other things, Council not meeting its obligation to provide access to Council land for the facilities, failing to pay its contributions when the investment triggers have been met, or if Council does not comply with the obligation to deal exclusively with Cogent.
37. Both parties have the right to terminate the Investment Period if:
 - (a) they have been unable to establish investment cases and commit to a project in three instances within a five year period; or
 - (b) in the first five years of the Investment Period, the aggregate of the contribution from both parties is less than \$5M.

The agreement would continue to apply to any facilities already approved at this time.

38. Provision has been made for a stable transition at the end of the agreement term with a first option for Council to purchase the balance of the system, and inclusion of handover provisions for a new operator to be introduced should Cogent not take up its option to purchase. This option is not available if the agreement is terminated early because of Council's default.

ENERGY SALE AGREEMENTS

39. The Energy Sale Agreements will supply Council with all of its electricity and thermal energy requirements for Council owned buildings for 20 years. Supply of electricity under these agreements will commence from 1 July 2014 on expiration of the existing electricity supply contracts
40. These electricity purchases are necessary initially to underpin the economics of the first two projects, Prince Alfred Park and Green Square. It is anticipated that over time the majority of electricity from the Green Square energy centre will be sold to others, and the Town Hall House trigeneration energy centre, when it is developed, will become the main supply for Council. Cogent will have separate Energy Sale Agreements directly with other customers.
41. These agreements will also provide for Cogent to transfer surplus electricity generated from Council's renewable energy systems, such as the Solar Photovoltaic Systems, to supply other Council buildings.

42. The City will receive at least 35 percent of its electricity supply as low carbon Cogent Power. It is guaranteed supplies of Cogent Power between 7am and 10pm week days (for the peak and shoulder) up to the City's daily average consumption, but has the right to receive any Cogent Power unused by other customers. At most times this will increase the portion of low carbon power used by the City to 40 percent.
43. For the remainder of the time (off-peak period 10pm to 7am weekdays and all weekend), the City will receive power through Cogent from the national electricity market. The option of supplying low carbon Cogent Power 24 hours, 7 days week for street lighting and weekend use is currently more expensive than grid power and is uncompetitive in terms of costs of carbon abatement. The agreement provides Council with the option of converting to 24 hour supply of low carbon Cogent Power, should it consider this appropriate in the future.
44. Electricity prices to be paid by Council for low carbon Cogent Power are fixed in the agreement for 2014, 2015 and 2016. These prices are derived from the cost of retail gas determined by Cogent using a market competitive quote and sourcing approach, and could potentially be higher than retail electricity market price at that time. The price for subsequent years will be escalated using an index weighted 70 percent to fluctuations in the price of gas supplied, determined by Cogent using the method described above, plus the associated carbon price, and 30 percent to the consumer price index for operational and maintenance costs of the facility.
45. As a result of this indexation, the electricity prices paid by Council for Cogent Power over time will vary from electricity supplied through the national electricity market. Whether the price will be higher or lower depends on a range of national and international economic factors. If it eventuates that the electricity price paid by Council for Cogent Power is higher than predominantly coal fired grid power, the price per tonne Council is paying for carbon abatement will be greater than the estimates used at project investment stage. The converse is true if electricity prices paid by Council are lower than national electricity market prices. Confidential Attachment D provides a scenario analysis of the potential costs Council may incur over the term of the agreement due to a range of variations in energy prices.
46. Figure 2 of confidential Attachment D compares Cogent Power prices offered in the agreement for 2014, 2015 and 2016 with current contract prices up to 2014. It is anticipated that Council's average cost of electricity will initially be higher than the business as usual alternative of supply from the national electricity market. Other than Prince Alfred Park Pool there will be no benefit of avoided network costs since the City's buildings, including Town Hall House, will initially be supplied from Prince Alfred Park and Green Square via the electricity distribution network.
47. However, it is anticipated that the increase in Council's overall electricity bill in the first year of operation, 2014/15, will be minimal, as shown in Table F of confidential Attachment D. This is because the higher Cogent Power prices only apply for the peak and shoulder periods, and the rise from these prices is highly diluted by the off peak electricity and network charges component of the bill.

48. The development of the Town Hall House trigeneration energy centre will significantly improve the financial performance through the avoidance of network charges for electricity used within Town Hall House and Sydney Town Hall, and through the replacement of electrical air-conditioning chillers with thermal chillers (heat fired absorption chillers). Table F of confidential Attachment D also provides an estimate of the overall Council energy bill for 2014/15, should the Town Hall House project be operational at that time. Due to the benefits described above, the overall energy bill is predicted to be significantly less than the business as usual scenario of purchasing electricity from the grid.
49. Figure 2 of confidential Attachment D indicates that the cost of purchasing low carbon Cogent Power would be less than the alternative of purchasing grid based renewable energy in the first years. Future prices for grid based renewable energy may vary subject to national economic factors and government policies. Even if grid sourced renewable energy prices became competitive with trigeneration in the future, it does not offer the benefit of avoided network charges which are a significant portion of overall energy bills, or the recovery of zero carbon waste heat from local electricity generation which will further displace grid electricity and gas demands for heating and cooling.
50. The total value of the Energy Sale Agreements over the term is subject to Council's future energy consumption, and escalation in gas pricing, but for the energy component exclusive of network and other regulatory charges is nominally the amount stated in confidential Attachment D.

LEASE AGREEMENTS

51. Council is required to lease space within its own buildings or lands (including roads where applicable) to Cogent for the accommodation of trigeneration energy centres for the same term as the Development Agreement. This requirement extends to land not owned by Council, but managed by Council. Council is also required to enter into leases for trigeneration energy centres on sites owned by third parties and sublease these sites to Cogent. The lease terms and conditions to be applied for each new project for Council leases are defined in a lease template which forms part of the Development Agreement.

THERMAL RETICULATION NETWORK USE OF SYSTEM AGREEMENT

52. A Thermal Reticulation Network Use of System Agreement defines access arrangements for Cogent to the Council owned thermal reticulation network.
53. The term of the agreement for each new Trigeneration facility will be for the remaining term of the Development Agreement.
54. This agreement will be finalised after July 2012 and will form a condition precedent to the Development Agreement.

THERMAL RETICULATION NETWORK MAINTENANCE AGREEMENT

55. The Thermal Reticulation Network Maintenance Agreement sets out the terms and conditions under which Cogent will operate and maintain the Thermal Reticulation Network.
56. The term of the agreement for each new Thermal Reticulation Network will be for the remaining term of the Development Agreement.

57. This agreement will be finalised after July 2012 and will form a condition precedent to the Development Agreement.

PARENT COMPANY GUARENTEE

58. The payment obligations of Cogent in the Development Agreement and other program agreements are underwritten by a Parent Company Guarantee provided from Origin Energy.
59. Key terms of the Parent Company Guarantee are described in confidential Attachment D

CONDITIONS PRECEDENT

60. A number of agreements and attachments to the Development Agreement are in draft form, but yet to be completed. These will be Condition Precedents to the Development Agreement so that the Development Agreement will not take effect until this documentation is completed. These include:
- (a) Thermal Reticulation Network Maintenance Agreement;
 - (b) Thermal Reticulation Network Use of System Agreement;
 - (c) Sublease Agreement Template – for third party sites;
 - (d) General and Technical Specifications;
 - (e) List of Nominated Variables;
 - (f) Transition Services Agreement (for the end of the Term);
 - (g) Construction Licence;
 - (h) Thermal Reticulation Network Area Maintenance Licence; and
 - (i) Project Initiation Certificates for Stage 1 (Green Square and Prince Alfred Park Pool). Construction of Green Square Energy Centre and Prince Alfred Park Pool Energy Centre will not commence until all of the above conditions precedent have been met.
61. Project Initiation Certificates must be executed for each project before the first payments are made by Council or construction is commenced by Cogent.
62. It is anticipated that the majority of the conditions precedent will be met by October 2012, however, the issuing of Project Initiation Certificates is dependent on receipt of final Development Approvals, gas and electricity network connection advice and may not be achieved until December 2012.

EXCLUSIVITY

63. The Development Agreement provides for Council to fund Trigeration projects and provide access to Council land exclusively for Cogent's benefit for the term of the Investment Period.
64. The Energy Sale Agreements provide for Cogent Energy to be the sole supplier of energy to Council for the 20 year term of the agreement.

COGENT'S INITIAL OFFER

65. Cogent has provided the Council with offers to supply Energy Generators for Green Square and Prince Alfred Park Pool, as set out in Table A in confidential Attachment D.
66. These offers are for the supply of trigeneration energy centres and, in the case of Prince Alfred Park, the provision of thermal energy to the pool. Due to time constraints, the Green Square proposal does not include provision of a thermal reticulation network for the supply of thermal energy to buildings. As the supply of thermal energy (heating and cooling) to buildings is a key element of the Trigeneration Master Plan for the City, the parties have agreed that the offer for the supply of a facility at Green Square is to be modified to incorporate a thermal reticulation network. The condition precedents described above, and all of the agreements, will not take effect until the revised offer for Green Square has been submitted to and accepted by the City.

FULLY DEVELOPED PROJECT SCENARIO

67. As the offers described above do not incorporate a Thermal Reticulation Network, and so do not include the associated income from thermal energy sales, they do not appropriately represent the business case for Trigeneration, and result in a high cost of carbon abatement.
68. Table B in confidential Attachment D presents a sensitivity analysis for Green Square which compares the initial first stage electricity generation only option with a fully developed project incorporating costs for the thermal reticulation network and associated income. It should be noted that this sensitivity analysis is based on a range of predictions and assumptions which could vary depending on the take up of thermal energy products when the Green Square building developments are constructed. As shown in Table B, the cost of carbon abatement for the fully developed project scenario is within Council's target range.

FIRST PROJECTS

69. It is proposed that the initial projects to be commenced under the Development Agreement will be Prince Alfred Park Pool and Green Square, including the first stages of the Green Square thermal reticulation network in time to supply the first building developments and meet Council's commitments under current and future Voluntary Planning Agreements. Final offer pricing for Green Square is currently unavailable, as detailed design for the thermal reticulation network is to be undertaken. None of the project agreements will take effect until a revised offer for Green Square has been submitted to and accepted by the City. The plan is for Prince Alfred Park and Green Square facilities to be initiated together to provide for Council's energy needs.
70. It is anticipated Council approval will be sought to initiate the first two projects at the December 2012 meeting.

First Stage Project		
Project	Size	Operation Expected
Prince Alfred Park Pool	1.5 MW	July 2014
Green Square	4.0 MW	July 2014

71. Cogent has provided the estimates set out in Table C of confidential Attachment D for these first projects. It should be noted that the estimate for Green Square is preliminary and the final cost may vary as more detailed design is completed, and cost of network connections finalised.

2nd ROUND PROJECTS

72. The following projects are under development and are subject to negotiation with energy customers, and may reach finalisation in the next months. To ensure timely initiation of these projects, approval is sought for authority to be delegated to the Chief Executive Officer to issue Investment Confirmation Certificates, as is required under the Development Agreement. This will permit the project to proceed to detailed design. Final Project Initiation will be subject to Council approval.

Near Term Projects		
Project	Size	Operation Expected
Town Hall House	4.0 MW	2014
Broadway Precinct Projects	10.0 MW	2014

TOWN HALL HOUSE

73. Due to the huge rise in electricity network charges, network charges and network capacity charges now account for 60% of Council's electricity bills, respectively. Developing a trigeneration energy centre at Town Hall House (which would also supply Sydney Town Hall) would reduce network charges by 90% or more. Receiving off peak supply of Cogent Power would also become more economic, due to the avoided network charges and utilisation of cogenerated thermal energy such as for the data centre and other overnight and weekend heating and cooling loads.
74. Town Hall House/Sydney Town Hall accounts for approximately 25-30% of Council's total electricity bill for all of its buildings. Developing a trigeneration energy centre at Town Hall House in Stages 1 and 2 should therefore be treated as a priority project, since it would significantly reduce Council's overall electricity bills and further reduce Council's emissions.

CONTRIBUTION OF FIRST PROJECTS TO SUSTAINABLE SYDNEY 2030 TARGETS

75. The reduction in Council’s greenhouse gas emissions, and the proportion of Council’s estimated electricity consumption in 2014/15 that will be met by trigeneration from the Prince Alfred Park Pool and Green Square projects against Sustainable Sydney 2030 reduction in greenhouse gas emissions and trigeneration targets, are estimated to be as follows:

After Trigeneration	Reduction by 2014/15	Sustainable Sydney 2030 Target
Reduction in the City’s Emissions from Price Alfred Park Pool and Green Square	14%	70%
Supply of Electricity from Trigeneration	40%	70%

76. It should be noted that the 70% reduction in greenhouse gas emissions cannot be achieved without a proportion of off peak electricity being provided by trigeneration, even if Ausgrid replaces its street lights with LEDs. Council’s ability to implement further building energy efficiency retrofits over the significant savings already planned with exiting programs is limited. Implementing more renewable energy on Council owned buildings and land is also limited beyond the current program of works.

KEY RISKS

77. Risk – Program is uncompetitive because grid electricity prices remain low, even with a carbon price.

Mitigation

- (a) The competitive advantages of Trigeneration are:
 - (i) the ability to utilise waste heat from local electricity generation to replace gas and electricity consumption for heating and cooling;
 - (ii) the avoidance of electricity network charges for buildings that contain a trigeneration energy centre; and
 - (iii) the value of any benefit a building owner may receive from NABERs and GreenStar schemes through utilisation of low carbon electricity and zero carbon thermal energy.
- (b) The magnitude of these benefits for each customer will depend on their individual circumstances. An analysis by AECOM, Figure 1 in confidential Attachment D, shows the price of Cogent Power is very competitive with grid supplied electricity if network charges are avoided. Network charges account for up to 60% of electricity bills and can partly be avoided by replacing electric air-conditioning with thermal air-conditioning or mostly avoided by hosting a trigeneration energy centre.

- (c) If a customer receives Cogent Power from the public wires distribution network and cannot avoid network charges by hosting a trigeneration energy centre, their overall electricity bill may increase. In this case, for the overall proposition to be competitive, the customer must reduce energy costs by reducing the amount of gas and electricity they use by substituting it with thermal energy from the precinct based thermal reticulation network.
78. Risk - Council's cost of low carbon electricity is greater than that price available for high carbon electricity from the national electricity market:
- (a) Electricity prices to be paid by Council will be escalated using an index weighted 70 percent to fluctuations in the price of gas supplied, plus the associated carbon price, and 30 percent to the consumer price index.
- (b) As a result of this indexation, the electricity prices paid by Council over time will vary from electricity supplied from the national electricity market. Whether the price will be higher or lower will depend on a range of national and international economic factors. If it eventuates that the electricity price paid by Council is higher, the impact is that the price per tonne Council is paying for carbon abatement will be greater than the estimates used at project initiation. The converse is true if electricity prices paid by Council are lower than market prices.
- (c) Figure 2 of confidential Attachment D shows the prices Council will pay for electricity (exclusive of network and other charges) under its exiting State Contract. The prices for 2013 and 2014 have been increased on the basis of an estimate of full carbon cost pass through, which is a worst case scenario. The chart shows that the price paid for low-carbon Cogent Power may be higher than grid prices in early years, but less than grid based renewable energy (exclusive of network and other charges).
- (d) Figure 3 of confidential Attachment D shows a Chart of predicted electricity prices from a number of sources, including ACIL Tasman and the Commonwealth Government. The range of prices in the chart is evidence of the uncertainty and variability in future price predictions. Figure 3 also includes a prediction of the average price Council may pay for low carbon Cogent Power for peak and shoulder combined with grid supplied off peak electricity. These are escalated using an index derived from published gas price predictions. The average price of power from Cogent is forecast to be initially higher than the market, but in all scenarios this price gap is predicted to close over the long term as greater use of gas for electricity generation and increasing prices for coal impact the electricity market price.
- (e) Figure 4 of confidential Attachment D provides an estimate of the annual additional electricity costs or savings Council could incur under a range of scenarios.
- (f) Table D of confidential Attachment D indicates the additional cost of electricity and carbon abatement Council could incur over the term of the Energy Sale Agreement, if Council purchases Cogent Power for the peak and shoulder periods and grid electricity for the off peak period. These costs are additional to any capital contribution made by the Council to the projects.

- (g) Figure 5 of confidential Attachment D shows a chart of predicted electricity prices from a number of sources, including ACIL Tasman and the Commonwealth Government. The range of prices in the chart is evidence of the uncertainty and variability in future price predictions. Figure 5 also includes a prediction of the average price Council may pay for low carbon for Cogent Power supplied for peak, shoulder and off peak periods. This is escalated using an index derived from published gas price predictions. The price of power from Cogent is forecast to be higher than the market.
- (h) Table E of confidential Attachment D indicates the additional cost of electricity and carbon abatement Council could incur over the term of the Energy Sale Agreements, if it purchased Cogent Power for all of its electricity requirements. These costs are additional to any capital contribution made by the Council to the projects.

Mitigation

- (a) The risk of this additional cost has been mitigated by purchasing only peak and shoulder low carbon power.
 - (b) The risk will be further significantly mitigated with the development of a Trigeneration facility within Town Hall House which is capable of avoiding network charges and utilising waste heat for heating and cooling during off peak periods such as the data centre an Sydney Town Hall.
79. Risk - Cost of future carbon abatement options is less than those achieved by the Council's Trigeneration investment.

Mitigation

- (a) Trigeneration will ultimately contribute 20–30 percent of the Council's carbon abatement target. The risk is mitigated by implementing Council's target through a portfolio of abatement technologies and options.
80. Risk - Council's contribution to project development is greater than expected and not value for money.

Mitigation

- (a) Council is not required to invest if the cost per tonne of carbon avoided in more than \$25 per tonne.
 - (b) Council has the right to undertake due diligence review of the financial assumptions for each investment.
 - (c) Council may have its funding reimbursed in part or whole as it will receive a portion of the revenue from sales of thermal energy above those anticipated at the investment stage.
81. Risk - Council is unable to deliver leases or licences for land to Cogent and incurs delay costs or damages.

Mitigation

- (a) Council staff will conduct due diligence in relation to the ability to provide land. If they are uncertain, they have the right, prior to project initiation, not to proceed if the lease or licence rights are unattainable. However, once project initiation is certified, Council must be able to deliver the required lease or licence.

82. Risk - Council is responsible for rectifying damage by parties other than Cogent to the thermal reticulation network

Mitigation

- (a) Council will need to ensure that its existing insurances include the thermal reticulation network so that it can recover repair costs from those insurances or the entity responsible for the damage.

83. Risk - Trigeneration energy customers may turn to Council if the plant or the thermal reticulation network is unreliable.

Mitigation

- (a) The Development Agreement contains performance obligations on Cogent to ensure the supply is reliable. Council has rights under the contract to enforce performance, including, subject to the nature and severity of the problem, withhold funding (but only where Cogent has failed to rectify a failure to meet minimum performance requirements during the operating phase), step-in rights to rectify the problem at Cogent's cost, or terminate the agreement, but only after the end of a cure process. In the event of the loss of essential supply of thermal energy, Council may step in to rectify if Cogent does not rectify the situation within 48 hours.

84. Risk - Cap on the amount which Council can recover from Cogent for the First Investment period.

Mitigation

- (a) The cap will be reset at the amount shown in Confidential Attachment D each time the Investment Period is extended (but only up to a further 10 years) and, for the operating phase, the cap is reset to the same amount. Insurance proceeds recovered or recoverable from Cogent's insurances are in addition to this cap.
- (b) Cap unlikely to be met as the program consists of many small facilities in a staged roll out so that any one instance will be limited.
- (c) Also, it is anticipated most liability situations will be covered by Cogent's insurances.
- (d) Cost of delay for damages to developers estimated at up to \$200,000 per week. The cap provides sufficient latitude in this case provided Cogent is liable to Council for these damages, as there is a mutual exclusion for consequential loss.

85. Risk - Cap on the amount which Cogent can recover from Council for the first Investment Period.

Mitigation

- (a) The cap will be reset at the amount above each time the Investment Period is extended (but only up to a further 10 years) and, for the operating phase, the cap is reset to the same amount. Insurance proceeds recovered or recoverable from Council's insurances are not in addition to this cap.
- (b) Given that Council's obligations under the Program Agreements are essentially to pay moneys to Cogent and to provide licences and leases of Council land, it is considered that most events where Cogent can recover damages from Council will be covered by Council's insurances. However, to minimise any potential for claims by Cogent that may not be covered by Council's insurances, Council employees who are administering these Agreements should comply with Council's appropriate due diligence and internal governance processes.

86. Risk - Council built thermal reticulation network operation and maintenance will not be taken over by Cogent.

- (a) Council has a right to forward fund and construct thermal reticulation networks if required to do so by agreement with an authority or where this has been through the investment process with Cogent but has not proceeded to project initiation. An example is the early construction of the George Street thermal reticulation network to coincide with other street works.

Mitigation

- (a) Council will need to ensure appropriate construction quality by passing obligations on to the contractor carrying out this work if it decides to proceed on this basis. Cogent will assume the responsibility to operate and maintain the Council built thermal reticulation network once a Plant is connected to that network and it has been commissioned by Council.

87. Risk – Deviation Page is used to override the Contract.

- (a) The parties have a right to agree a Deviation Page to the Contract. This will be considered as and when the Technical Specifications for each facility are prepared and agreed. If there is anything in the Technical Specifications for a facility that is different to or in addition to the rights under the Contract, this will be specified in the Deviation Page.

Mitigation

- (a) To avoid the possibility of Cogent identifying all of the Technical Specifications as a deviation in the Deviation Page, Council employees administering the Contract will need to ensure that only the deviations that it has agreed to are specified in the Deviation Page and that, if any deviation affects a contractual right or obligation, then appropriate legal advice is obtained.

88. Risk - Council may be required to contribute to unforeseen impediments to ground works (Latent Conditions).

Mitigation

- (a) Cogent will be responsible for any reasonably foreseen latent conditions.
 - (b) For unforeseen impediments, the parties will share the additional cost equally.
89. Risk – Council’s commitments under a Voluntary Planning Obligation are not supported by Cogent.

Mitigation

- (a) Schedule 6 of the Development Agreement requires Cogent to provide a warranty for the timely delivery of Trigeneration services if, on notification of the expected completion date for the proposed building by the developer, Cogent agrees it can meet the timetable and a Project Initiation Certificate has been issued by Council.
90. Risk - Council not able to deliver its 70% reduction in greenhouse gas emissions target without supplying low carbon electricity from trigeneration for off peak supplies and Cogent has already sold the generated off peak electricity to other customers.

Mitigation

- (a) The Energy Sales Agreement requires Cogent Energy to offer the trigeneration off peak electricity to Council first so Council can elect to take trigeneration off peak electricity at the commencement of Council’s Energy Sales Agreement, or Council may review the option of receiving off peak supply every three years.
91. Risk – Cogent supplies Council with grid electricity rather than low carbon Cogent Power so that carbon targets are not met.

Mitigation

- (a) There are requirements in the Energy Sale Agreement for Cogent to maximise the production of low carbon power for sale to Council from the Trigeneration units, subject to a range of operational conditions.

KEY IMPLICATIONS

Strategic Alignment

92. 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, advanced waste treatment and automated waste collection master plans.
93. Objective 2.4 seeks to demonstrate leadership in environmental performance through the City of Sydney’s operations and activities.

94. Sustainable Sydney 2030 has a reduction target of 70% in greenhouse gas emissions by 2030. A significant part of this target will be realised through the installation of 477MWe of trigeneration and cogeneration with the City's Local Government Area (LGA). This amount of trigeneration/cogeneration is estimated to supply 70% of the LGA's electricity requirements by 2030.

Organisational Impact

95. The trigeneration program will require significant resources to manage an agreement with an energy services provider, to ensure that the objectives of the program are met and that Sustainable Sydney 2030 emissions reduction targets are also met. The City appointed a Senior Program Manager Green Infrastructure in December 2011 and is recruiting a further four green infrastructure positions to support the Green Infrastructure Plan program, including Trigenation, non-potable recycled water supply and automated waste collection.

Regulatory Impact

96. Council ownership of the thermal energy reticulation network will minimise future regulatory impact risk, particularly in relation to any future regulated third party access to the thermal energy reticulation network risk. The contracts developed are intended to be responsive to future third party access regimes.

BUDGET IMPLICATIONS

97. The City's Corporate Plan and Long Term Financial Plan contain provisional sums for the introduction of trigeneration systems across the Local Government Area over the next 10 years. Council's committed capital expenditure under the Development Agreement is within the budget provided to Council in the Corporate Plan and Long Term Financial Plan.

RELEVANT LEGISLATION

98. As part of Council's internal governance process, the question of whether the arrangement that Council will have with Cogent Energy once the Development Agreement is executed constitutes a public-private partnership under the Local Government Act 1993 (NSW) (LG Act) was considered. If the arrangement constitutes a public-private partnership under the LG Act, then Council will be required to comply with Part 6 of Chapter 12 of the LG Act. We are of the view that Part 6 of Chapter 12 of the LG Act does not apply to Council's proposed arrangement with Cogent Energy for the reasons explained below.

Section 400B of the LG Act defines a public-private partnership as follows:

"(1) For the purposes of this Act, a "public-private partnership" means an arrangement:

(a) between a council and a private person to provide public infrastructure or facilities (being infrastructure or facilities in respect of which the council has an interest, liability or responsibility under the arrangement), and

(b) in which the public infrastructure or facilities are provided in part or in whole through private sector financing, ownership or control,

but does not include any such arrangement if it is of a class that has been excluded from the operation of this Part by the regulations.

(1A) For the purposes of subsection (1), the provision of public infrastructure or facilities includes the delivery of services during the carrying out of any project under the public-private partnership.”

99. The arrangement that Council will have with Cogent Energy once the Development Agreement is executed falls within the above definition of a public-private partnership. However, Regulation 408 of the Local Government (General) Regulation 2005 (NSW) states as follows:

“(1) For the purposes of section 400B(1) of the Act, the following arrangements are excluded from the operation of Part 6 of Chapter 12 of the Act:

(a) any contract between a council and a private person that would, but for a resolution by the council to enter into a public-private partnership, be subject to the tendering requirements under section 55 of the Act,”

100. In compliance with section 55 of the LG Act, Council invited tenders for the provision of the trigeneration services that are now the subject of the proposed arrangement with Cogent Energy. Having complied with this requirement, the proposed arrangement with Cogent Energy is therefore excluded from the operation of Part 6 of Chapter 12 of the LG Act.
101. The tender and subsequent negotiations have been conducted in accordance with the Local Government Act 1993, the Local Government (General) Regulation 2005 and Council's Contracts Policy.
102. Information negotiated with Cogent Energy 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.

CRITICAL DATES / TIME FRAMES

103. The following program is anticipated.

(a) Development Agreement Contract Execution	late July 2012
(b) Conditions Precedent finalised	October 2012
(c) First Project Initiated	December 2012
(d) First installations operational	July 2014

GRANTS

104. Council has been successful in being awarded two grants by the Federal Government towards its trigeneration project - \$3.75M grant from the Liveable Cities program towards the Green Square trigeneration project and \$5M grant from the Community Energy Efficiency program towards the Prince Alfred Park and Town Hall House trigeneration projects. These grants are in addition to the budgets set aside by Council towards its trigeneration project.

GREEN POWER

105. Council previously paid \$2M a year for Green Power as part of its policy to achieve and maintain its carbon neutrality status. Current Green Power prices would also double Council's electricity component of electricity bills if it had continued with the purchase of Green Power electricity. The supply of energy for Council's peak, shoulder and off peak supplies from trigeneration is anticipated to be cheaper than either of these cases. The purchase of Green Power was a temporary policy while the City was enabling its carbon reducing projects, since offsetting is the last thing that an organisation should employ in mitigating emissions after 'avoid, reduce and replace'.
106. On 31 May 2010, Council resolved that the City's Green Power purchase contract be replaced by a Renewable Energy Fund of up to \$2M per annum that will be used for renewable energy projects on/in the City's own property and operations, and that all of the City's carbon emissions, including emissions from coal fired grid electricity generation, be offset by more cost effective alternative accredited carbon offsets. The Renewable Energy Fund will be used to fund the large scale solar photovoltaics program elsewhere on this agenda subject to Council resolution.

REMOVAL OF REGULATORY BARRIERS TO TRIGENERATION

107. Council has been campaigning and lobbying for the removal of the regulatory barriers to trigeneration since 2008/09. Some success in this has already been achieved, with the Australian Energy Market Operator's proposal to replace individual registration for small generators (below 30MWe) with an aggregate registration which will reduce costs, which the Australian Energy Market Commission is currently consulting the industry on. Other proposals from the Property Council and the Energy Efficiency Council are also under way to reduce the regulatory barriers to decentralised energy, including trigeneration. Council will continue to campaign and lobby for the removal of the regulatory barriers to trigeneration and renewable energy similar to the regulatory regime enacted in the UK in 2001 (exemptions) and 2009 ('virtual private wire' over public wires regulatory market).

NABERS, GREEN STAR AND OTHER ENVIRONMENTAL RATING SCHEME BENEFITS

108. Council owns buildings that will be connected to and/or supplied by low carbon electricity and zero carbon thermal energy (heating and cooling) from trigeneration energy centres that would benefit from an approved energy and/or environmental rating system. The Energy Sales Agreement provides for Council to be entitled to any benefit which, under the National Australian Built Energy Rating System (NABERS), managed by the NSW Office of Environment and Heritage, the 'Green Star' environmental rating system managed by the Green Building Council Australia or any other environmental rating system for buildings, attaches to a building supplied by a trigeneration energy centre.

ENERGY EFFICIENCY

109. Council has already reduced greenhouse gas emissions in its own buildings by 18.1% from the base year of 2005/06 to 2010/11 and has let contracts for the building energy and water efficiency retrofit, which will reduce emissions in its buildings by a further 24% over one year, and LED street lighting, which will reduce emissions in its street lights by 51% over three years. Council will also be considering another report and recommendation elsewhere on this agenda to let a contract for the large scale photovoltaic systems project that will deliver further reductions in emissions over the next three years.
110. The reductions in energy consumption and associated emissions have already been allowed for in the Trigeneration proposal for Council's buildings and street lighting and the Energy Sale Agreements attached to this report.
111. Although Council will have delivered most of the reduction in emissions that can be delivered on its own buildings and operations with the completion of these projects, it would not want to be restricted from carrying out further energy efficiency or renewable energy works on its buildings and operations. The Energy Sale Agreements therefore provide for Council to reduce its primary energies consumption by up to 15% of the primary energies consumption in the previous Agreement Year. This should provide sufficient scope for undertaking further energy efficiency and/or renewable energy works on Council's buildings and operations.

RENEWABLE ENERGY

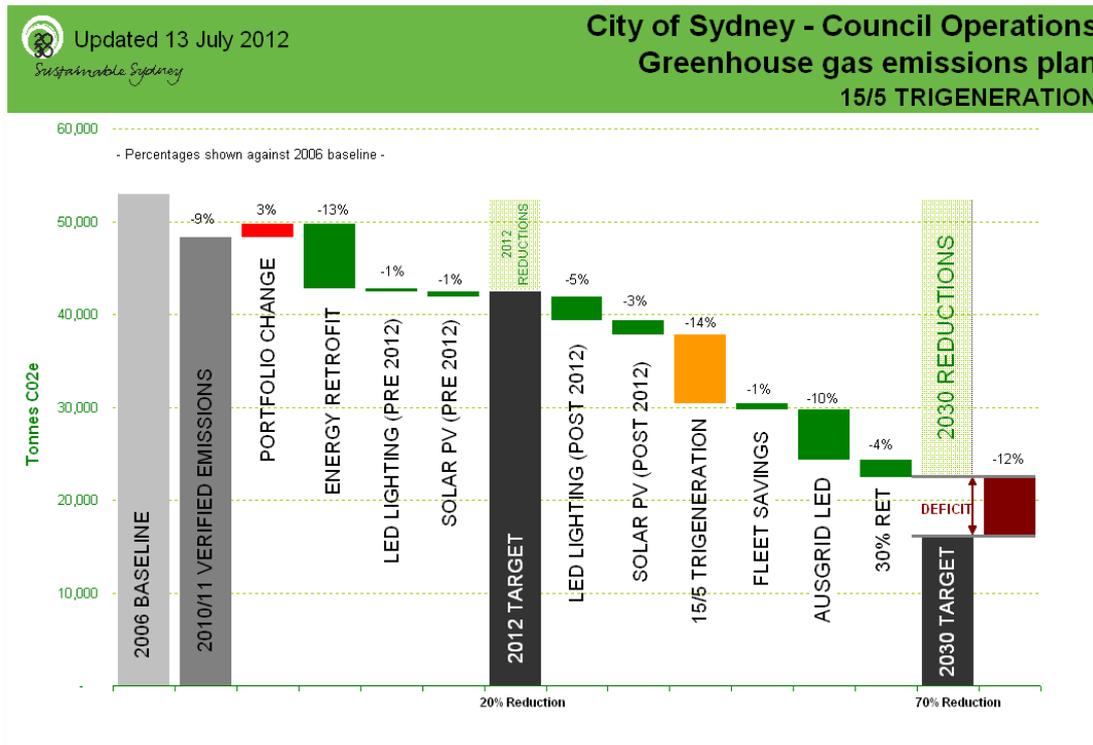
112. Council's Sustainable Sydney 2030 target for 100% local energy to be met by 70% of electricity requirements from trigeneration and 30% from renewable energy applies to Council buildings and operations as well as to the City of Sydney Local Government Area.
113. The City's draft Renewable Energy Master Plan has indicated that 30% renewable electricity can be met within the LGA and within 250km of the city on the proximity principle. The draft Renewable Energy Master Plan has also established that there was enough renewable feedstocks from waste, including municipal, agriculture, sewage and other wastes within 250km of the City, that can be converted into renewable gases and fuels to eventually replace natural gas supplying 360MWe of trigeneration by 2030 and potentially provide 100% of electricity and thermal energy requirements in the LGA from local renewable sources. This plan will be put to Council when completed.
114. Technologies such as advanced gasification can convert renewable gases into a substitute natural gas for use in the natural gas grid to supply trigeneration in the LGA through a process of methanisation. Such projects are already being undertaken in Germany, Switzerland, Austria, Denmark, Sweden, USA and the UK.

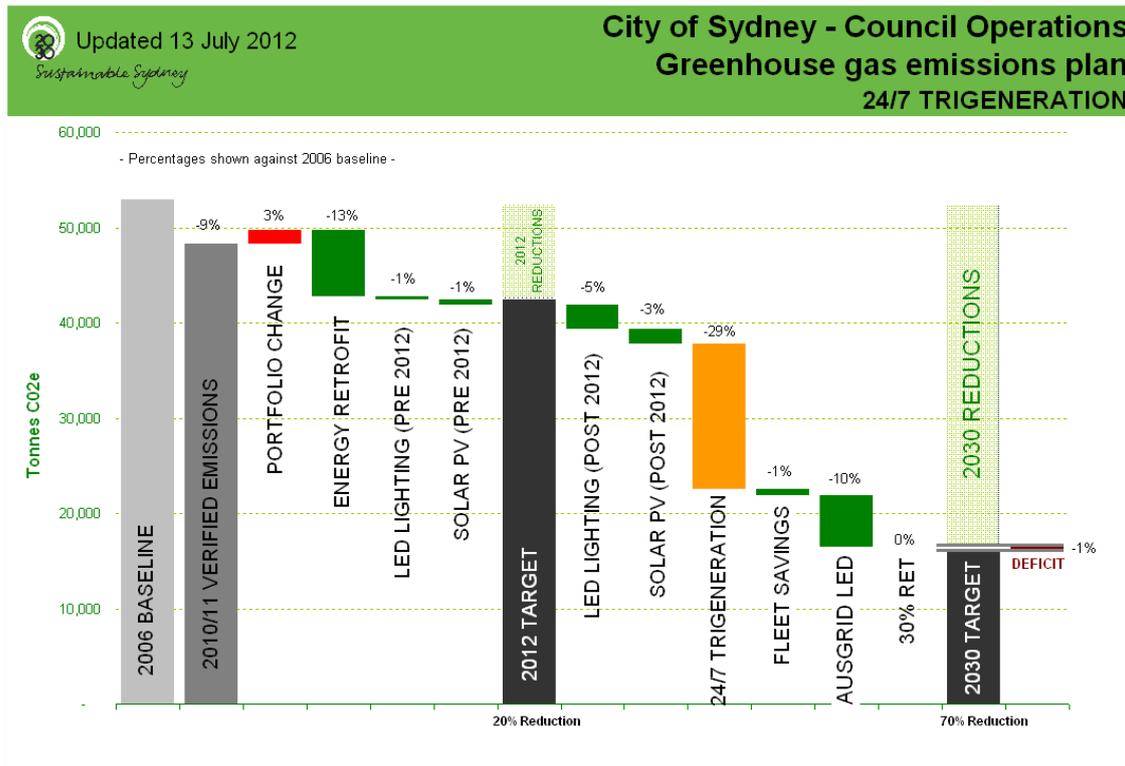
115. The Development Agreement provides, after completion of stage 1, for Cogent to assist Council during the investment period to develop opportunities for renewable gases, particularly from waste, for supplying trigeneration in the LGA in the future, either by conversion and injection into the nearest natural gas pipeline and/or by direct connection to trigeneration energy centres. Renewable gases from waste will generally take the form of a syngas generated by advanced gasification and/or pyrolysis technologies. Other forms of renewable gases from other sources such as biogases and biofuels may also be incorporated. Trigeneration may also be supplemented by renewable energy, particularly if it is to contribute towards Council's 30% renewable electricity target for the LGA.

116. In addition to renewable energy for the LGA, Cogent will also facilitate the export of surplus renewable electricity from Council's renewable energy installations, such as the solar photovoltaic projects, to other Council buildings across the local public wires distribution network using Cogent Power as part of the Development Agreement.

REDUCTIONS IN GREENHOUSE GAS EMISSIONS

117. A summary of the expected reductions in greenhouse gas emissions for all of Council's greenhouse emission reduction initiatives is shown in the following charts. The first chart shows the contribution from Trigeneration for the proposed operational regime of 15 hours on week days, and if the option of operating the Trigeneration facilities 24 hours per day was taken up.





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