Waste & Recycling Association of South Australia Inc.

11 September 2018

Dear ACCC,

We submit the attached report from Dr Frank Ashe, principal of Quantitative Strategies.

Dr Ashe has sought to quantify the number of prices implicit in the Council Solutions tender proposal. He has concluded:

1. There will be an estimated 1188 base tender prices required before alternative offers and combined contract combinations;

2. The prices will be submitted in part in different formats and for different combinations making comparison difficult and subjective assessment necessary, which, "may not be in line with good governance practices.";

3. Alignment of the three Applications for tender will "open the door for obvious alternative tenders including various combinations of other contracts".

In 2016 (Council Solutions A91520), the ACCC found that tendering costs would likely produce a net public detriment. No waste related application to the ACCC has been tested and investigated as comprehensively as A91520 in 2016.

We believe the evidence indicates that the tendering costs will likely result in a net public detriment for Application AA10001414 (and other associated applications) before the ACCC at present.

Yours sincerely

John Fitzpatrick
Public Officer

Report concerning the number of pricing options for a complex contract

Produced by Dr Frank Ashe
at the request of the
Waste and Recycling Association of South Australia (WRASA)

25 August 2018

Introduction

1. I have been asked by Mr Geer, on behalf of WRASA, for a calculation of the number of possible prices that could be tendered for a complex contract likely to be produced by Council Solutions (CS) with multiple options within it.

2. I have been provided with the following information based on an analysis by WRASA of the current application for collection. This shows that the following variables exist, even without a tender specification available to extract all possibilities. Due to this uncertainty in the inputs, my calculations below should not be accepted as precise, but as an indication of the magnitude of the number of prices.

   For example, when I calculate a value of 1,188 prices below, it should be taken as indicating a magnitude of pricing combinations. It is the sheer magnitude that is important in this analysis, rather than the precise value.

3. The tender involves 4 Councils; Marion, Port Adelaide Enfield, Adelaide City and Charles Sturt. For the current Application, CS state that this will require different tonnage brackets that tenderers will need to price for, according to the centroids chosen.

   a. They are seeking a single collection contractor to collect 3 separate streams of waste from 3 household wheelie bins throughout the 4 councils

      i. The 3 streams are garbage, recycling and organics

   b. The councils are spread so there are 2 "centroids" into which material can be taken.

      i. An additional price for delivery outside the centroids is required. This can be construed as a 3rd centroid, although it is also possible to consider that it is an additional alternative – replacing either one of the two centroids.

   c. Only 1 garbage disposal location can be used

   d. Two recycling disposal locations can be selected (presumably one from each centroid), though note point b.i.

   e. Two organics disposal locations can be selected (presumably one from each centroid)

   f. For the garbage disposal location (only 1), a single price can be submitted by tenderers (Marion is excluded) – because there is only 1 location there are no different combinations of different councils going to 2 centroids.

   g. For each recycling disposal location (2 max) a set of 4 prices must be provided by tenderers (all 4 included) for 4 brackets of tonnes depending on which councils are going to that site or the other site

   h. For each organics disposal location (2 max) a set of 4 prices must be provided by tenderers (all 4 included) for 4 brackets of tonnes depending on which councils are going to that site or the other site

i. An additional set of prices needs to be submitted for disposal points for each stream outside the centroids. I have conservatively assumed consistent rate regardless of location, although I have been advised that this is not the case.

j. Pricing schedules in a tender ask for, on average, 20 prices for various bin collection services.

A typical range of collection prices, extracted from the current price schedules for waste contracts is:

Service
Garbage 140L Residential
Garbage 240L Residential
Recycling 240L Residential
Recycling 360L Residential
Organics 240L Residential
Garbage Commercial Service
Garbage Commercial Service – other bin size or frequency
Recycle Commercial Service
Recycle Commercial Service – other bin size or frequency
Organics Commercial Service
Organics Commercial Service – other bin size or frequency
Special On property Collection
Special Event working days
Special Event outside hours
Special Event weekend
Transport to alternative facility garbage
Transport to alternative facility recycling
Transport to alternative facility organics
Bin purchase - 140L
Bin purchase - 240L
Bin purchase - 360L

k. Pricing options for the 20 services (9 prices for each of the garbage, recycling and organics streams, excluding bin purchase prices) will need to be submitted for all combinations of

    i. tonnage brackets,

    ii. centroid combinations – 2 nominated and 1 outside

    iii. garbage, recycling and organics waste streams

4. WRASA members advise that other non-standard prices are also used for some Councils, for example, high density or multi unit dwelling categories include services that are customised to high density areas to increase waste diversion. To be conservative, these haven't been included in the calculations below.

Calculations for Garbage

5. My calculations are:

Collection prices (para 3.j)	Centroids (paras 3.b - 3.c)	3 tonnage (Marion excluded) brackets and 2 other waste streams[1]	Total
9	3	12	324

Calculations for Recycling

6. For all recycling prices, options must be provided. My calculations are:

Collection prices (para 3.j)	Centroids (paras 3.b - 3.c)	4 tonnage brackets and organic waste stream[2]	Total
9	3	16	432

Calculations for Organics

7. Organics for all organics prices, options must be provided. My calculations are similar to recycling:

Collection prices (para 3.j)	Centroids (paras 3.b - 3.c)	4 tonnage brackets and organic waste stream[2]	Total
9	3	16	432

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[1] The garbage price may vary if the recycling and/or organics is taken to another centroid. Conservatively speaking, if the garbage price is being submitted independently of the recycling and organics collection prices, it is possible that they will not change if some or all of the recycling and/or organics is going to another centroid.

I have been advised, however, that the contract, which will probably require 2 depots, will have the costs apportioned to garbage, recycling and organics at each depot and across shared truck resources, so tonnage will change with the amount of material (number of trucks) going to centroid 1 and centroid 2. Therefore, pricing combinations for garbage depending on where recycling and organics material will be necessary.

[2] Similar logic to footnote 1 applies to the recycling and organics stream viz 4 tonnages for recycling, and 4 tonnages for organics. The current (non-tender) document is unclear in its wording, and the number of options possible could be 16, 24, or 48 depending on how the wording is interpreted.

I have chosen to use 16 to be conservative.

In combination

8. So, based on the information provided by Council Solutions, without having seen the proposed pricing schedule or contract clauses detailing any other variations, the following estimate of number of prices to be submitted by each tenderer is:

    a. Garbage – 324 prices

    b. Recycling – 432 prices

    c. Organics – 432 prices

    d. Total – **1,188** prices

Variations

9. Variations by tenderers is common, even for a 1 price submission. I have been advised that alternative tenders for Council Solutions would be common and likely for, at a minimum:

    a. A contract term (perhaps through to the end of 2031)

    b. Input pricing variations. The LGA standard contracts often have insufficient rise and fall compensation, for eg, CPI annually or wage adjustments that aren't aligned with actual increase in the Waste Management Award 2010. As a result, alternative tenders are common.

    c. Variation in the specification for bin supply and maintenance, eg, use existing bins, which is often saves a council significant amounts

10. Each single alternative doubles the number of implicit pricing options that Council Solutions and the participating councils may need to assess for value for both the group as a whole and for their own council. For example, the 3 alternatives above would increase the number of theoretical pricing options from 1,188 to **9,504** prices. Another alternative would double the possible number of prices again.

    Although this number of prices is unlikely to be submitted by tenderers due to the difficulty and complexity of the task, it is certain that prices that are submitted will not be the same for all tenderers and so objective comparison between submissions is impossible.

11. We note that a common method for presenting an alternative tender is simple for tenderers but infinitely more difficult for those assessing. A tenderer will often present an alternative price as a percentage reduction.

12. For example, they may say that if the council accepts their alternative for a contract term of 11 years for Port Adelaide Enfield, Adelaide City and Marion, a 1% discount would apply.

    However, to assess against all other pricing options, this needs to be converted into actual prices for each pricing combination.

13. It is difficult to envisage that a number of separate prices in the thousands being submitted in a tender.

However, even if a simplified approach to submitting a response was taken it is possible to end up with a large number of possible prices. For example, consider the garbage stream, where a tenderer gives:

    a.   12 different tonnage prices in dollars;

    b.   Specifies the use of centroids by a percentage adjustment, say -5%, 0%, and +10% to the previous prices;

    c.   Specifies the 9 collection prices as another percentage adjustment or dollar adjustment.

In such a case, even though this tabulation is "easy" for a tenderer to produce, it does lead to the 324 prices I calculated above.

14. It is not unrealistic for thousands of prices to be implicit in the pricing schedule from just one tenderer.

Comparison of tenderers

15. CS need to compare the submissions from various tenderers.

16. It is possible, even likely, that different tenderers would use different schedules to indicate their pricing. This could lead to thousands of implicit prices for CS to compare, and that may not be directly comparable.

    If two pricing schedules are not directly comparable, even for a single price, then a resolution can be imposed by subjective processes, which may not be in line with good governance practices.

17. Even if schedules of prices are directly comparable, the determination of best value is a very difficult task.

18. Combinatoric analysis techniques may be available to do this[3], though this is beyond the scope of this report. Anyway, it seems that CS does not have the requisite tools.

19. Correspondence I have had with WRASA on the approach CS have taken with other tenders they have undertaken there has been a high number of base prices required and difficulties in comparing tenders with a large number of implicit prices.

Other considerations

20. Even though the intent of the ACCC and the 2016 Final Determination was that the three waste services (collection, disposal, ancillary) would not be tendered together, this appears to be the case.

21. This opens the door for obvious alternative tenders including various combinations of other contracts such as garbage disposal (centroid 1 or 2), recyclables processing (centroid 1 or 2), organics processing (centroid 1 or 2), hard waste collection, public street bin collection and /or bulk bin collections.

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[3]   The availability of the mathematical techniques depends on the exact specification of the problem. I would expect that expensive off-the-shelf systems are available, though typically these are well beyond the means of Australian local councils.

22. There are 8 contracts that can be merged into the collection contract in any combination. That allows a possible **40320** combinations.

23. We understand that all combinations will not be submitted however the issue is that collections prices using these combinations will be submitted in different variations that are impossible to compare.

24. For example, tenderer A submits collection prices plus street litter bin plus bulk bin prices and tenderer B submits collection prices plus garbage disposal.

Conclusion

25. The magnitude of base tender prices is likely to be significantly high and possibly 1,188 prices.

26. The number of implicit prices that would be contained in all submissions is potentially in the thousands.

27. Given the complexity of the proposed tender arising from the multitude of pricing combinations, comparison of these prices from a number of tenderers is likely to be a very difficult task, and may even need subjective input.

Author

Dr Frank Ashe has a consulting practice specialising in risk management and investments. Risk management covers the gamut from technical matters in option risk, to the aspects of behavioural psychology of importance in risk management, to strategy, to comparative corporate governance. He maintains an Honorary Associate Professorship at the Macquarie University Applied Finance Centre where he was responsible for the Financial Risk Management course, and where he spent 2002 to 2006 as a full-time Associate Professor.

Prior to 2002, Dr Ashe worked in Australia and Canada with consultancies, insurance companies, investment management firms, bond dealers, and financial software houses. His 35+ years of practical experience have been predominantly in the measurement and management of financial risk and return, with an emphasis on asset-liability management, and developing risk measurement and management tools for novel situations. His passion is for the clear expression of risk concepts to the non-specialist at all levels in the organisation

He is a regular presenter at industry seminars and colloquia, and was President of the Australian Q-Group 2002-2011. He regularly travels through Asia, teaching and consulting in Mumbai, Hong Kong, Kuala Lumpur, Palestine, Beijing, Singapore and Tokyo, and is a member of the Australian Institute of Company Directors.

Dr Ashe obtained his PhD in Operations Research from the University of New South Wales. He majored in Pure Mathematics, Applied Mathematics, Statistics, and Actuarial Science, with First Class Honours in Mathematics, from Macquarie University.

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