Calverton
Business Consulting Group

1st July 2013

Commerce Commission
44 The Terrace
PO Box 2351
Wellington 6140

Attention: Keston Ruxton - Chief Adviser, Regulation

Dear Keston

Orion CPP Proposal: Comparative Costing for Overhead and Underground Lines

I refer to your 31 May 2013 request to undertake a peer review of the analysis and information provided by The Property Group and Orion on the comparative costs of underground and overhead options for electricity services between New Brighton and Sawyers Arms Road. My discussion and conclusions are set out below.

Executive Summary

- Orion has provided background material to support its contention that a 66kV overhead line from Rawhiti to Marshland to Waimakariri would cost between $27 and $50 million more than its preferred CPP Proposal alternative of an underground 66kV cable.

- The main reason for this difference is that Orion estimates that if private property easements were required along the proposed route, these would cost between $33.5 and $55.8 million. No such costs would arise if an underground cable was adopted.

- Orion also contends that the easement acquisition processes together with approvals that would be required under the RMA for an overhead line are not only costly, but impractical in terms of the extended period of time that would be required to completion.

- The assumptions underlying Orion's private property easement cost estimate appear to have been overstated by several million dollars. It is estimated that a more likely cost would be $8.2 - $8.7 million higher than the underground alternative.

- Even with this lower estimate, the overhead option still therefore remains economically less viable than the underground alternative, assuming that the route chosen for an overhead line needs to be identical to the proposed underground route. This cost differential is largely a reflection of the fact that the route passes through built-up residential areas which will cause significantly higher easement costs and likely level of injurious affection compensation to be payable by Orion.

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- Even if it were possible, by using a different route, to bring the total cost of an overhead 66kV line below the underground option, the Christchurch City Council planning framework is not conducive to the construction of overhead power lines. They are a non-complying activity and Orion would need to secure a Notice of Requirement under the RMA to designate a chosen route.

- Such an application by Orion (as the requiring authority) would likely meet with considerable resistance from opposing submissions for reasons that extend wider than pure economic considerations, but which nevertheless would fall to be considered within the RMA Hearing process.

- Orion clearly prefers the underground route for its 66kV line for a range of reasons that include, but also extend beyond economic considerations. The company (as the requiring authority) would thus be resistant to advancing a notice of requirement for the designation of an overhead corridor.

- For all these reasons therefore, in its current form the proposal to install an underground 66kV cable is considered to be more economically viable and able to be executed more effectively and efficiently than an overhead alternative utilising the same route.

Background

1. This letter reviews supplementary information provided by Orion to support the view expressed in its CPP Proposal that undergrounding of a 66kV cable from Rawhiti to Marshland to Waimakariri is economically more viable and preferable to an overhead line alternative.

2. The further enquiry was initiated following an independent engineer's report and verification of Orion's financial information provided by Geoff Brown and Associates Limited (GBA) dated 18 February 2013. In that report GBA suggested that overhead construction would result in a saving of $17.4 million for this section of the project[1].

3. Orion has provided further information with assistance from The Property Group (TPG) to demonstrate that the cost of obtaining easements over private property to enable an overhead line to be built, more than outweighs the total cost of the underground alternative.

4. The Commerce Commission has sought independent advice and responses in this paper to four questions:

    - How reasonable are the estimates of overhead procurement corridor cost / easement cost provided by TPG?

[1] See Section A1.6.2 Page A7 Geoff Brown and Associates 18 February 2013. GBA also considered that if overhead lines were adopted for the whole Urban North Subtransmission proposal, total costs would reduce from over $60 million to approximately $28.3 million.

- How reasonable are TPG's assumptions about the impact of proposed poles on adjoining private property, as well as on the need and cost of easements using commercial and/or other processes?

- Provide comments on the extent to which overhead procurement costs might be impacted by the existence of Roads of National Significance in the area and / or plans by Christchurch City Council to implement urban infrastructure corridors.

- What are the planning and implementation benefits as between the two options?

Construction differential between two options has been reduced.

5. GBA used a cost estimate for overhead lines of $250,000 per kilometre[2]. Orion has responded to this by noting that the estimate used by GBA was not robust. Orion has provided argument to support the adoption of a $450,000 per kilometre cost[3]. This has the effect of reducing the differential between the two options to $14.7 million.

Underground Cost (Orion estimate)	GBA Overhead Line Cost Estimate ($250K per kilometre)[4]	Orion Overhead Line Cost Estimate ($450K per kilometre)
$21,976,200	$4,575,000	$7,265,000

6. The difference between the two construction options is a key reference point in the evaluation of easement costs. The revised differential means that, all other considerations aside[5], Orion ought to prefer the overhead option if the cost of acquiring easements over private property was materially less than $14.7 million.

How reasonable are the estimates of overhead procurement corridor cost / easement cost provided by TPG?

The TPG Analysis

7. Following further analysis TPG has resubmitted its evaluation of the costs of the proposed overhead route. Orion has adopted the identical route for an overhead line as that which is proposed for undergrounding from Rawhiti to Marshlands to Waimakiriri.

8. Even though different variables are in play (e.g. avoiding residential areas, reducing consenting and easement procurement costs), Orion contends that the optimal balance for an overhead option would be achieved using the identical route. Orion notes that the option to take a longer but easier route (from a consenting and easement procurement perspective) is not practical because the route length would be increased

[2] Ibid
[3] See additional information submitted in response to Commerce Commission information requirement, 11 June 2013 - Page 5 Question 11.
[4] GBA's estimate at $250,000 per kilometre implies a total distance for the line of 18.3km. Orion's estimate at $450,000 per kilometre implies a distance of 16.1km. The difference in distance is not explained but the latter is closer to the total of road frontages used in the TPG schedule which is just over 15km.
[5] Orion's objection to overhead lines is also based on landscape and visual concerns, the expressed preference of the Christchurch City Council, and to the fact that it has previously given residents an undertaking that 66kV overhead lines constructed under emergency powers are only temporary.

significantly to the north before heading south again. The company also points to zoning changes in the north becoming problematic in the future.

9. All other factors aside[6] the choice of an overhead route might be seen as a trade-off between the cost per kilometre of construction ($450,000 per kilometre in Orion's case), versus the avoided cost of private property easements. The currently proposed line covers a distance of around sixteen kilometres. The cost of property easements over that distance is discussed next.

10. TPG has estimated that the total cost of easements to be acquired over these properties would be in the range of $33.486 million to $55.810 million, with a midpoint of $44.648 million. These estimates are two and a half to four times higher than the difference of $14.7 million discussed above.

11. The key assumptions used by TPG are as follows:-
    - An easement width of 12 metres;
    - A compensation ratio of [ ]OCI% of **land** value for the directly affected area;
    - A general rule for **total** cost of easement, including injurious affection, being [ ]OCI% of **capital** value for residentially zoned properties;
    - Within that general rule, adjustments for certain properties in zones (e.g. rural or commercial) where no injurious affect would be likely beyond the easement area, or for properties where a 12 metre easement would intrude upon existing dwellings; and
    - Around $8.435million of legal, professional and execution costs.

12. The generalised [ ]OCI% rule described above was applied after more granular analysis of "injurious affect" based on twenty metre bands with a declining scale of compensation for each. Each of these assumptions is discussed in turn.

The Easement Width

13. Orion's view that a 12 metre easement width is required for an overhead line is considered to be flawed for reasons set out in this section. The selection of a 12 metre width is a key driver in easement costs. At [ ]OCI%of Land Value, each metre of width adds around $[ ]OCI to the total cost of easements for the 15km of road frontages along the line specified in the TPG data.

14. Orion's adoption of a 12 metre width is based on the view that this is the buffer corridor (i.e. the distance from the centre line of poles) required by Transpower for its national grid.

15. Implicit in this assumption is that the poles would be placed along, or adjoining the front boundary of each private property. Orion has confirmed that this would be required for "road safety reasons and the avoidance of drainage swales". As Orion itself notes, no easement would be required for the erection of poles / lines in public road.

[6] In practice the choice of an optimal overhead route is a multi-disciplinary exercise involving (inter alia) assessment of engineering and design, geotechnical, landscape and visual effects, ecological, archaeology, planning and other disciplines.

16. The 12 metre corridor has its origin in a 2008 National Environmental Standard which sets out a national framework for permissions and consent requirements for activities near transmission lines. The NES requires councils to provide a consenting framework within their plans for the consenting of projects that fall within certain distances of existing major transmission lines. Transpower has sought a buffer corridor of 12 metres within which any activity that might be incompatible with the existing transmission line should be subject to resource consent. The NES applies only to existing high voltage transmission lines. It does not apply to new transmission lines, or to electricity distributors (such as Orion).

17. A registered easement grants a right to Orion (in this case) to build, construct, install, lay, use, operate and maintain its transmission line by way of access across private land.

18. A standard easement fee is determined under generally accepted valuation principles. Assessing total compensation for an easement involves three steps:

    - Assessing the value of the land occupied or taken
    - Assessing injurious affection, and
    - Assessing compensation for business loss, disturbance or damage.

19. The first component of the easement fee is the width of the corridor required to achieve Orion's construction, operation and maintenance purpose. This includes the area occupied by poles, and the over sail of conductors including swing (when lines move outwards for example in windy conditions).

20. In the case of Transpower building new lines, it is understood that the company's easements and fees paid to private landowners are not based on a twelve metre width from the centre line of any newly constructed towers. In broad terms, its easement fees are understood to encompass a corridor including maximum swing plus a four metre buffer on either side. The addition of a four metre buffer on either side is likely related to the NZ Electrical Code of Safety Practice ECP34 which provides a code of practice for electrical safe distances. Although Transpower may not need the four metre additional corridor in order to construct, maintain and operate its lines, there appears to be an implicit recognition in its easement compensation methodology that a further corridor is required because it recognises that under safety codes of practice, landowner rights to build certain structures are constrained.

21. Further guidance can be found in ECP34. Two separate tables show minimum safe distances of conductors from buildings and other structures. The first table provides a minimum distance which can be encroached within, subject to an engineering study confirming (broadly that) safety is not an issue. The second table provides minimum safe distances which are compulsory for buildings and other structures. In the case of lines exceeding 220kV the minimum compulsory distance in any direction from parts of any structure not normally accessible to persons (e.g. the conductors) is four metres. This is identical to the Transpower easement buffer corridor described above. The same table shows that for 66kV lines the minimum compulsory safety distance is 2.5 metres.

22. Orion has advised that for an overhead line of this type, it would use 17-19 metre poles with cross arms of 1.5 - 2 metre width from the poles. Swing is not possible to calculate given that Orion has not done any detailed design work, but for the sake of this example

a further metre might be added. Including the compulsory safety distance of 2.5 metres an appropriate easement width might therefore be 5.0 - 5.5 metres from the centre line of the poles for the 66kV project.

23. This would reduce the initial easement fee[7] from TPG's current estimate of $11.15 million by an estimated $6.04 - $6.51 million to between $4.64 and $5.11 million. If it were practically feasible for the poles to be placed closer to the road edge and away from the private property boundary fence, the easement costs would be reduced by an estimated $[ ]OCI per metre of shift.

Compensation ratio of 50% of land value

24. The selection of a [ ]OCI% compensation ratio by TPG is intended to reflect that, except for the location of the poles, the grantor nevertheless has limited ongoing use of the land in the easement area under the power lines.

25. Horsley[8] comments that the percentages used in calculating compensation are based on quasi-market benchmarks that are based on observation of actual percentages that have been used with a relatively large number of landowners over time.

26. He notes that actual percentages applied in practice vary but are understood to range between [ ]OCI%and [ ]OCI%. In the case of the Orion overhead option, each 10% band added to the compensation ratio adds around $2.0million to total easement fees if the 12 metre corridor is maintained. A 10% band applied across a narrower easement corridor of, say, 5 metres, would result in total savings of around $900,000.

27. If the objective is to keep total easement costs to a reasonable level it might be more likely that a starting point for the compensation ratio would be less than the top end of the range, with the expectation that in the normal course Orion might increase this ratio during compensation package negotiations with property owners.

28. In the end, the actual ratio of easement compensation has for the most part, been aggregated with injurious affection compensation by TPG in its "whole-of -property" compensation approach that is based on a percentage of each property's Capital Value (see paragraph 30- 31 below). It is therefore not possible to determine how material the [ ]OCI% ratio is to each property, because it cannot be unbundled ffrom the aggregate sum.

Injurious Affection

29. Injurious affection is a sum of compensation payable to grantors of easements for aesthetic factors and permanent disturbance. TPG has assessed injurious affection on the basis of six bands[9] of twenty metres. Each band is allocated a percentage on a diminishing scale from [ ]OCI% to [ ] OCI% applied to Capital Value.

30. The application of these specific bands to each of the approximately 400 properties that might be affected by an overhead line is not disclosed in TPG's data. Instead, TPG has

[7] i.e. excluding injurious affection compensation.
[8] Report for the Electricity Commission prepared by Graham Horsley Limited June 2007.
[9] TPG refers in its supplementary paper to "four" twenty metre bands but appears to specify six.

modelled the data and adopted a general rule in which it has concluded that for residential properties, an injurious affect compensation package should be based on [ ]OCI% of all capital values in residentially zoned land.

31. In fact, TPG arrives at [ ]OCI% of capital value as the **to tal** compensation value[10] (i.e. including the easement fee calculated over the 12 metre width).

32. In certain cases TPG has adopted a specific compensation approach where it has observed that the nature of the property (e.g. rural) does not warrant any injurious affection compensation at all. In other cases it has adopted a higher percentage of Capital Value, where, for example, the 12 metre easement area notionally passes through an existing dwelling.

33. Without reviewing detailed workings from TPG it is difficult to correlate the bands of effect approach it adopts to the [ ]OCI% of Capital Value rule of-thumb eventually applied for residentially zoned land.

34. Clearly, if the 12 metre corridor is reduced to say, 5 metres, for the initial easement fee, (as per the above discussion) then a recalibration of the [ ]OCI% of CV approach by TPG would be required. Moreover certain properties where the fee has been escalated because the 12 metre corridor would be expected to encroach on an existing dwelling would need to be revisited.

35. Beyond that point it is difficult to comment on the accuracy or otherwise of the injurious affection calculation and the overall approach based on Capital Value.

36. In a more general sense the TPG bands of effect appear to cumulatively create a compensation sum that is high by intuitive judgment. In the case of residential properties for example, TPG is effectively saying that a property would decline in value by []OCI% as the result of the presence of the Orion power line along its frontage.

37. Horsley[11] notes that benchmark percentages vary across corridors of affection but in aggregate are generally in the range of around [ ]% of the combined land value (emphasis added) of the corridors. To be fair, this comment is made in the context of a rural project, but in the case of TPG's analysis the percentages have been applied to capital value rather than land value, which should reflect the urban nature of the project without the need to escalate the percentages.

38. Horsley uses a different corridor of affection approach to that adopted by TPG. He prefers to take double the height of the tower (or in this case, pole) to prescribe six corridor widths, three on each side. He then uses a sliding scale of affection being [ ]OCI% for the first, [ ]OCI% for the second and [ ]OCI% for the third (i.e. [ ]OCI% in total).

39. Although it is not possible to accurately replicate this approach from the data provided by TPG, assuming three corridors of affection each (say) 30 metres wide, and applying the Horsley percentages to the capital value (instead of land value) of residential

[10] It is noted that the total compensation amount is also adjusted by a generally applied $5,000 per property for owner's fees.
[11] Ibid

properties, an estimated $[ ]OCI would be payable by way of injurious affection to affected landowners from whom Orion would be required to purchase an easement.

40. Finally, it is noted that the TPG bands of effect cumulatively add to 112 metres. Since easement fees are only payable to the private land owner whose property is occupied by the transmission line, the outer bands of twenty metres may well exceed the boundary depth of the property concerned, and thus be inapplicable. However this is unlikely to be material given the diminishing scale of percentages in the outer bands.

Legal, professional and execution fees

41. A total of $8.435 million is projected by TPG for professional and advisory costs for the overhead project. This amounts to a substantial proportion of the $14.7 million difference in cost between an underground and overhead alternative for the 66kV line, even before any easement fees are paid.

42. These costs are based generally on a fee per property of $5,000 ($1.815 million) payable by Orion. Additionally TPG expects that Orion would incur consultancy costs of $4.8 million which, it is assumed, represents $12,000 on each of the 400 properties likely to be required for access. At an hourly rate of say $150, this amounts to around 80 hours per property required to conclude an easement negotiation. The writer's experience with much larger and more complex negotiations with rural landowners suggests that 80 hours per property may be excessive for smaller residential transactions where travel distances are not so great, and more standard documentation might apply for each deal.

43. Finally there are $1.82 million in fees projected to be paid to LINZ in relation to compulsory acquisition activities under the Public Works Act where there may be recalcitrant or challenging landowners.

44. On the whole, these fees seem high. If, for example, affected easement properties each required an average of 30 hours (instead of 80 hours) of negotiation, this part of the fee estimate would reduce by $3.0 million.

45. We note however that one element that does not appear to have been incorporated in the $8.435 million estimate is the cost of seeking a Notice of Requirement through an RMA Hearing process. In a strongly contested Hearing (such as this would be) this cost could range between $1.0 and $5.0 million.

Summary of Procurement Costs

46. In response to the Commerce Commission's first question, there is therefore evidence to suggest that the estimates of overhead procurement corridor cost / easement cost provided by TPG are likely to have been overestimated by several million dollars.

47. The following table attempts to quantify the possible differences in estimates using the lower easement widths discussed above and the lower injurious affection compensation that might be modelled using a Horsley approach.

	Orion Estimates $'000	Alternative Easement Cost Estimates $'000	Alternative Easement Cost Estimates using GBA construction cost estimate $'000
Cost to construct a 16km overhead line	$7,265	$7,265	$4,575
Costs to purchase easements over around 400 properties	$33,486[12] (low) $44,648 (midpoint) $55,810 (high)	$[ ]OCI (5m easement) $[ ]OCI(5.5m easement) $[ ]OCI(additional injurious affection compensation)	$[ ]OCI (5m easement) $[ ]OCI(5.5m easement $[ ]OCI (additional injurious affection compensation)
Legal and consultancy costs to secure easements	$8,435	$8,435[13] (including RMA process)	$8,435 (including RMA process)
Total capital cost for 66kV overhead line	**$49,186 (low) $60,348 (midpoint) $71,510 (high)**	**$30,187 (5m easement) $30,955 (5.5m easement)**	**$27,797 (5m easement) $28,265 (5.5m easement**
Undergrounding cost estimate	**$21,976**	**$21,976**	**$21,976**
Cost saving in favour of undergrounding	**$27,210 (low) $38,372 (midpoint) $49,534 (high)**	**$8,211 (5 metres)**	**$5,580 (5 metres)**

48. The table suggests that, even if lower estimates were to be adopted for the easement costs based on the above discussion of key variables, an overhead line through a built-up residentially-zoned area will tend to cost more than would be the case if an underground alternative were implemented.

49. The table relies on the modelled route being, economically, the best overhead option for Orion. For example a feasible longer transmission route (even at $450,000 per kilometre) that traversed less populated and residential zones may prove to be more economically viable. It is not possible to reach any conclusions on this because alternative routes have not been investigated by Orion.

50. Easement costs could also be reduced by moving the line away from property boundary fences ($[ ]OCI per metre width) or by adopting a lower compensation ratio than [ ]OCI%.

[12] For easement costs Orion has adopted TPG's general rule of applying a percentage of capital value rather than separating out easement and injurious affection components.
[13] It is assumed that the legal and consultancy costs for the exercise have been overstated, but that an offsetting amount would likely need to be set aside to secure a designation for the route.

51. As discussed below under planning and implementation issues, the table tells only part of the story. There are significant intangible costs and challenges that Orion would face unless the planning and execution framework was changed to be more ambivalent towards either option.

How reasonable are Orion's assumptions about the impact of proposed poles on adjoining private property, as well as on the need and cost of easements using commercial and/or other processes?

52. As previously noted, Orion's assumption is that poles must be placed immediately adjacent to private property road frontage boundaries because of "road safety reasons and the avoidance of drainage swales"[14]. (In passing, it is noted that Orion's Bromley to Dallington 66kV temporary line appears to be strung from poles that are located on the outer edge of the footpath rather than hard up against a residential fence line).

53. Because each metre of distance from private property (and therefore into public roading areas) saves around $[ ]OCI in easement costs (using TPG's [ ]OCI% assumption) the location of poles closer to the road has economic advantages. However it is difficult to comment on Orion's assessment of drainage swale risk and road safety issues.

54. TPG's discussion of property procurement processes (i.e. commercially-driven, statutory, or combined approach) is considered to be accurate. Typically, Requiring Authorities that are seeking to build a transmission line or similar large lineal infrastructure asset will adopt TPG's third (or combined) approach where a generous commercial consideration is offered with a fallback to the compensatory methodology utilised under compulsory provisions of the Public Works Act (PWA) if negotiations fail.

55. That said, Requiring Authorities will not usually venture too far from the established before-and-after valuation methodology because to do so runs the risk of establishing undesirable precedents for other projects and authorities. Similarly, it is normal commercial practice to offer a compensation scheme that is based on a set of principles applicable to all affected properties. If one landowner benefits disproportionately to others it is usual for this fact to become widely known, and a ratcheting effect then to apply to other affected parties.

Provide comments on the extent to which overhead procurement costs might be impacted by the existence of Roads of National Significance in the area and / or plans by Christchurch City Council to implement urban infrastructure corridors.

56. The proposed route for the 66kV line traverses a short section of SH74. The balance of the proposed route falls within Christchurch City Council roads.

57. Section 24 of the Electricity Act 1992 provides that "….*an electricity operator may from time to time construct and maintain works in, on, along, over, across, or under any road*". In the same section this right does not apply to "…*the construction of works that are intended to convey, or are associated with, electricity at a voltage of more than 110 KV and a capacity of more than 100 MVA*".

[14] Ibid. - Page 4 - Response to Question 3.

58. On the face of this section Orion (as an electricity operator) has a right to construct its 66kV line within a local authority or national road. However the Electricity Act does not override the requirements of the RMA and the Christchurch City Council plan.

Roads of National Significance (RoNS)

59. RoNS planning includes a new section of northern motorway starting north of Belfast, passing to the east of Belfast and Redwood connecting with QEII Drive near Winters Road.

60. New Zealand Transport Agency has advised that until wider Christchurch transport priorities have been confirmed there is some uncertainty around the construction timing of this project. It is unlikely construction will commence before 2016/17.

61. In any event, its relevance to the Orion 66kV overhead alternative is limited because it does not seem to provide any useful solutions to the general challenge of the line being built in an urban residential area with associated easement costs.

Urban Infrastructure Corridors

62. Urban infrastructure corridors are referred to in the Christchurch Urban Development Strategy (UDS). Strategy partners in the UDS are Environment Canterbury, the Christchurch City Council, Selwyn District Council, Waimakariri District Council, the NZ Transport Agency and Te Runanga o Ngai Tahu. Orion is not a strategic partner in the UDS except to the extent that it is 89% owned by Christchurch City Council and 11% by Selwyn District Council.

63. Urban infrastructure corridors that are part of the UDS appear to focus only on the construction of sustainable and efficient transport corridors. More recently (2012) the Greater Christchurch transport Strategy has been released. This Statement is designed to "help guide the development and management of Greater Christchurch transport programmes and partners' investment strategies towards a strong and resilient future. It responds to the CERA Recovery Strategy Built Environment goal of developing a transport system that meets the changed needs of people and businesses and enables accessible, sustainable, affordable and safe travel choices"[15].

64. The partnership comprises of UDS partners - Environment Canterbury, Christchurch City Council, Selwyn and Waimakariri district councils, NZ Transport Agency – along with Christchurch International Airport Limited, KiwiRail, Lyttelton Port of Christchurch, Canterbury Earthquake Recovery Authority (CERA) and the Ministry of Transport. Again, Orion is not a partner, and it appears to be solely focussed on transport rather than other infrastructure.

65. On the basis of these developments it is hard to see how Orion would benefit from building an overhead 66kV line through new corridors any more than it stands to do with the existing roading network. Ultimately, any ability to build an urban overhead line cheaply and / or efficiently is governed by the Christchurch City Council planning framework. The term "urban infrastructure corridor" is not used in the Christchurch City Council plan.

[15] See Greater Christchurch Transport Statement - 2012

What are the planning and implementation benefits as between the two options?

The Planning Framework

66. The Christchurch City Council Plan was made operative on 21 November 2005 with various outstanding appeals being resolved after that date (and no appeals currently outstanding). There are a number of plan changes either in preparation or in progress but none of them specifically relates (by title) to infrastructure corridors.

67. Rule 4.4.2 in the Christchurch City Council Plan clearly discourages overhead lines by making them a non-complying activity.

68. The consequences for Orion of overhead lines being a non-complying activity are accurately described in a letter to Orion dated 10th May 2013 provided by resource and environmental consultants RMG, which forms part of the supplementary information package.

69. Essentially, Orion would have to apply for a Notice of Requirement to designate the planned 66kV route for an overhead line. This process would require a formal Hearing which could last several weeks or months. It would likely be attended by, and receive submissions, from many hundreds of interested parties, especially as overhead power lines are almost universally disliked from a landscape and visual perspective. Any decision would be subject to appeal to the Environment Court which could take many more months.

70. Section 171(1)(b) of the RMA requires a Hearing, when considering the Notice of Requirement and submissions, to have regard for "whether adequate consideration has been given to alternative sites, routes or methods for undertaking the work." The Hearing evaluation process will factor in economic considerations but only as part of a wider canvas including landscape and visual effects.

71. Orion would therefore need to demonstrate that all possibilities had been considered and that alternative methods and routes were less preferable than the proposed overhead route. Given that Orion itself remains adamant that undergrounding is the preferred methodology for a range of reasons (mainly related to landscape and visual effects) of which cost is only one, it is hard to imagine how it would be prepared to advocate willingly or convincingly to a Hearing for an overhead alternative.

Summary of planning and implementation challenges

72. There are four key factors that mean under current regulatory and planning frameworks it would be extremely challenging, costly, and likely to require extensive timeframes to implement an overhead line project.

    - The Christchurch City Council has shaped its planning framework, to be unfavourable towards the construction of any overhead lines. With a few exceptions that are not applicable in this case, an overhead line is regarded as a non-complying activity;

    - The formality of an RMA process would require many months of preparation, receive several hundred (maybe thousands of) submissions opposing the

application, take several months to hear, and then be subject to appeal to the Environment Court which may take several more months;

- Negotiating with private landowners (in this case up to 400) to reach an easement compensation agreement would take many weeks in the case of some more challenging landowners, and might even result in the need to implement compulsory acquisition processes under the Public Works Act; and

- In the end, any RMA application to designate an overhead corridor would require the support and advocacy of Orion as the requiring authority. Orion is clearly opposed to the overhead alternative, and has a strong preference instead for an underground option.

73. Analysis of comparative costs and alternative routes would only become relevant if Christchurch City Council became more permissive in its planning framework in relation to the construction of overhead lines in urban areas, which is not anticipated.

Yours sincerely

W M Mills
Director