TRR
Telecommunications &
Radiocommunications
Regulator

PO Box 3547
Port Vila
Vanuatu
t: +678 27621
e: enquiries@trr.vu

TRR'S FINAL DETERMINATION CONCERNING FCC's REQUESTS FOR APPROVAL OF PRICING FOR SEVERAL SALES OF LEASED SUBMARINE CABLE CAPACITY

I. INTRODUCTION

1. On 31 March 2017, TRR provided interested parties with a Draft Determination on the above matters. In particular, TRR provided a Draft Determination on FCC's requests for approval of pricing for specific sales to Digicel, Speedcast, TVL and TelSat of additional leased capacity on the ICL Cable.

2. FCC's requests for TRR approval of pricing for these sales arises under TRR's Order No. 1 of 2017, which provides:

> "For a period of 12 months, prior to supplying, or agreeing to supply, further capacity on the ICL Cable, or agreeing to sell or transfer any rights to any capacity on the ICL Cable to ICL or any other party, Fidelity Communications Corporation ("FCC") shall first obtain the advance approval of TRR for the pricing and related terms of any such supply or transfer transaction, and in seeking such approval, shall provide substantiation that the price and other terms are cost-based, commercially reasonable, and not discriminatory, and that the transaction is not anti-competitive."

3. TRR allowed 15 days for FCC and other interested parties to provide comments, information or substantiation relating to TRR's Draft Determination.

4. Submissions were received from Digicel, FCC, TVL and TelSat. TRR has considered all of the points in these submissions, and now makes this final Determination, and the accompanying Order No. 2 of 2017.

5. Some of the factual background relevant to this Determination was the subject of findings and prior consultation by TRR, as part of the processes leading to:

   (i) TRR's "Determination And Findings Related To The Wholesale International Internet Services Market And Speedcast's Complaint Against Interchange Limited" ("TRR's June 2016 Determination") and TRR's Order No. 3 of 2016; and

(ii) TRR's Findings And Conclusions Concerning Further Steps Relating To The Supply By FCC Of Submarine Cable Capacity ("TRR's February 2017 Determination") and TRR's Order No. 1 of 2017.

6. Part II of this Determination summarises TRR's response to the main comments or submissions of interested parties. TRR has considered all of the points in these submissions. A party should not infer otherwise simply because a specific comment or point of a party is not discussed herein.

7. Part III of this Determination summarises TRR observations and findings.

8. TRR also notes that Digicel, TVL and TelSat all took exception to TRR redacting from its Draft Determination details of financial information of FCC, including as to its costs and IRU contracts with ICL. Digicel also requested TRR to provide all such information via an un-redacted copy of the Draft Determination.

9. TRR does not believe that it is required, or appropriate, for it to provide such financial formation of FCC to Digicel or other actual or potential customers of FCC. Such information is or is likely to be confidential to FCC and/or ICL. In addition, much of this information was obtained by TRR pursuant to Section 8 of the TRR Act, which prevents TRR from disclosing information so obtained without FCC's consent.

10. TRR also does not believe that these details are necessary for the interested parties to have a sufficient opportunity to comment on the Draft Determination. In particular, the methodology and assumptions of the Draft Determination are disclosed therein, and these comprise the most relevant and potentially contentious aspects of the Draft Determination.

11. From prior correspondence with Digicel and TVL in other regulatory proceedings, it also appears that they would not support such cost or financial information of their businesses being disclosed by TRR to third parties, and TRR has not in the past agreed to requests by other parties for such disclosure. TRR wishes to adopt a consistent and impartial attitude in such matters, and notes that, in the future, TRR is willing to explore with interested parties procedures for the disclosure and use of such information. One example is disclosure to nominated experts of an interested party who have given non-disclosure and confidentiality undertakings.

II. SUMARY OF SUBMISSIONS AND COMMENTS BY INTERESTED PARTIES

A. Overview Of Comments

12. Digicel, TVL and TelSat all generally supported the ultimate conclusion in the Draft Determination that FCC's proposed prices were too high, and should not be approved, and that pricing for these sales at the level identified by TRR, or even lower, was appropriate or required.

13. Digicel, TVL and TelSat also were in favour of TRR setting standard pricing for all FCC capacity sales, not just the specific sales on which FCC sought approval, and doing so consistent with, or lower than, the pricing set out in the Draft Determination. Such a

"standardized" pricing regime was seen as providing benefits in terms of certainty and stability, and promoting future capacity purchases.

14. FCC, on the other hand, took issue with TRR's findings as to FCC's costs, and cost-based pricing for FCC, and generally sought to claim that its costs and prices should be found to be significantly higher than in the Draft Determination.

15. FCC also seemed to be in favour of a broader ruling by, or agreement with, TRR to establish standard pricing for its capacity sales. FCC's support for such a broader framework also appeared to be contingent on FCC agreeing to the details of that framework or standardized pricing.

16. TRR has stated in it prior Consultation Paper, and Draft Determination, that it has given consideration to setting cost-based "price caps" or other standardized pricing for FCC sales generally (rather than only for specific sales pursuant to Order No. 1 of 2017). TRR also previously has discussed the advantages and disadvantages of this approach, and appreciates the further comments of interested parties in support of such an approach.

17. In this Determination, TRR only addresses the specific sales presented for approval under Order No. 1 of 2017. TRR then will make a final Determination on the further issue of whether to implement a broader set of standardized prices or price caps (as referred to in TRR's prior Consultation Paper). TRR anticipates that this further Determination will be made within 30 days.

B. FCC Comments

18. TRR has considered all of the objections and points made by FCC, and summarises the main points below.

19. FCC makes several claims that TRR has incorrectly estimated or calculated FCC's costs.

20. First, FCC claims that the actual amount of FCC's capacity payments to ICL for FCC's third IRU is substantially ($[redacted]) greater than as stated by TRR in its Draft Determination. FCC claims it made this large additional payment to ICL for capacity ICL supplied under a prior IRU to another service provider, Wantok.

21. TRR previously addressed this claim, in Paragraphs 111 – 114 of TRR's June 2016 Determination. TRR found, among other things, that FCC had not provided documentation showing any such payment(s) to ICL, and that such payments would appear to be contrary to information provided to TRR by ICL.

22. More recently, in TRR's letter to FCC of 7 April 2017, TRR again requested that FCC provide documentation sufficient to prove that it paid an additional $[redacted] to ICL, as claimed. Such documentation would comprise bank transfer or similar records substantiating the specific payment or payments made.

23. FCC still has not provided any documentation showing the making of any such payments. Accordingly, TRR does not have a sufficient basis to find that any such payments actually were made, or to include any such payments in FCC's costs.

24. Second, FCC claims that TRR should not have used the period of FCC's IRU contracts (which are for at least 180 months) to calculate FCC's average costs. FCC says that TRR instead should have used the combined periods of FCC's current "debt" financing agreements, which it says are shorter.

25. The documentation provided by FCC identifies, in terms of debt financing, only a single loan, from a [redacted] bank, in the amount of $[redacted]. TRR has not been provided with any other loan agreements. FCC apparently seeks to describe its periodic capacity payments to ICL as "debt" financing, but that would not be accurate.

26. FCC's financial position thus appears to be, in summary, as follows:

   a. FCC has rights to sell IRU capacity, and earn revenue thereby, for a minimum term of 15 years;

   b. A substantial portion of FCC's expenses, being O & M payments and ongoing salary, administration and operational expenses, also will be for the entire term FCC has and sells its IRU capacity; and

   c. Certain other costs of FCC, being capacity payments and the above loan are payable over a somewhat shorter period, namely about [redacted] years.

27. The above circumstances do not, as FCC claims, mean that TRR is required to, or should, calculate FCC's average costs over a period shorter than the minimum 15 year term of FCC's IRU capacity. The reasons for this include:

   a. A large portion of FCC's costs are incurred over the entire period of its IRU capacity, and FCC also is able to earn revenue during that entire period, which accordingly is the most suitable period to calculate FCC's average costs;

   b. Using a shorter period would materially overstate FCC's costs during the period of its intended operations and rights to supply capacity. This would tend to inflate a calculation of cost-based prices, thereby suppressing demand and potentially damaging the telecommunications sector;

   c. FCC's financing costs under its loan agreement with European Bank are a small portion of FCC's total costs, and the period of this loan agreement and/or loan repayments may be extended and revised from time-to-time;

   d. TRR's approach of pricing over the useful life of FCC's IRU assets also is a common or widely accepted approach to pricing for submarine cable and other telecommunications infrastructure, and TRR sees no compelling or sufficient reason to abandon that approach here; and

e. TRR's cost estimates and pricing in the Draft Determination sufficiently took account of FCC's financing cost, by including these costs, and all other FCC costs, in the cost base used to identify approved pricing. Contrary to FCC's claim, TRR's approach therefore does not prevent FCC from recovering its financing (and other) costs.

28. FCC also claims that TRR has significantly under-estimated the average amount of stranded (or unsold) IRU capacity FCC may experience. In particular, FCC claims that, on average, it will not lease significantly more capacity than it currently has leased (at the start of Year 4 of the ICL Cable's operation). This claim is not supported by any demand projections or other data, and is inconsistent with:

   a. the increasing demand in Vanuatu for international bandwidth since the ICL Cable came into service, as shown by increasing amounts of capacity being purchased;

   b. the experience and expectation globally and in emerging markets for significant and ongoing increases in demand for international bandwidth; and

   c. statements by Vanuatu service providers, such as TelSat, that they expect increasing need for such capacity, especially at reasonable and cost-based prices.

29. FCC also claims, based on its view of its costs, that an appropriate price (including a 30% return), would be about $US319/Mbps/Month. TRR notes that this is materially below FCC's current base price, and the prices it put forward for approval by TRR pursuant to Order No. 1 of 2017.

30. In addition to the other problems referred to above, FCC's proposed approach and price do not appropriately treat risk and return. In particular, FCC's estimates of cost and demand are based on very conservative assumptions that minimise FCC's risk (e.g. high assumed stranded capacity and a short period for calculating average costs that is much less than the useful life of FCC's IRU assets). Despite this, FCC's proposed price includes a high rate (30%) of return. Such a rate of return would be consistent with significant risk being taken, which is not reflected in the remainder of the FCC modelling of costs and demand. Even if (which is not the case) it were appropriate for TRR to use FCC's highly conservative cost and demand assumptions, that would mean that a much lower rate of return would need to be applied (to reflect the risk-minimising nature of such assumptions). Such a lower rate of return would reduce bring FCC's suggested price of $US319/Mbps/Month to a level consistent with TRR's approved prices in the Draft Determination.

31. FCC also claims that TRR should apply an 'accounting principle' in which FCC's revenues are "matched" to expenses. FCC says that this would mean that its costs should be calculated based only on the amount of capacity leased at any particular point in time.

32. This argument is not accepted for several reasons. First, TRR is engaged in a regulatory cost-based pricing process, not an "accounting" process. It is a common and accepted practice in such a pricing process to utilize the total capacity, together with assumptions as to projected demand and un-used capacity (as TRR has done).

33. Second, FCC's approach, in which pricing at each point in time is based on the amount of capacity leased at that time, tends to leads to significant and undesirable price fluctuations that can adversely affect competition, suppress demand for cable capacity, and harm the development of the telecommunications sector. For example, under FCC's approach, early purchasers would pay very high prices, as little or no capacity has been leased, and prices would reduce for each purchase of incremental capacity, such that purchasers would have different prices, based solely on when they purchased. Such outcomes are not desirable, or necessary to implement cost-based pricing.

34. FCC also claims that TRR's approach does not provide sufficient support for a second cable from Vanuatu, which FCC says is necessary for redundancy purposes. This argument is misconceived. TRR's approach in this Determination is to apply cost-based pricing to the services supplied by FCC, and not to seek to assure that another cable is built.

35. Further, if a second cable were necessary or desirable in the near or medium term future for Vanuatu, nothing in TRR's cost-based pricing approach would prevent such an investment. On the contrary, cost-based pricing would, by definition, provide for an adequate or reasonable return on costs. TRR also notes that FCC has not identified specific and recent information to support a second cable currently being actively pursued for Vanuatu. Thus, FCC's reference to such a possible development is too speculative to warrant a change to TRR's approach.

36. In its Draft Determination, TRR also identified several instances of price discrimination in FCC's proposed pricing that was not justified by objective cost or similar considerations. FCC claims that each of these instances of discrimination is sufficiently justified.

37. A sufficient justification for price discrimination typically would involve objective considerations, such as a lower cost of supply, or a volume or term discounts corresponding to reduced supplier risk. The justifications offered by FCC are not of this nature, or sufficient.

38. For example, FCC incorrectly claims that a lower price to Speedcast was justified because Speedcast was the only customer to commit to capacity "pre-launch". This argument fails for several reasons. First, Speedcast's initial contract with FCC was entered into after the ready-for-service (or "launch") date of the ICL Cable, and after FCC's first two purchases of IRU capacity. Second, even if Speedcast were entitled to some discount for a "pre-launch" commitment, that discount would have been reflected in its initial capacity contract with FCC, which has now expired. FCC's proposed and prior pricing to Speedcast also never was, as FCC claims, "approved" by TRR, as TRR repeatedly has made clear to FCC in prior correspondence.

C. Digicel Comments

39. Digicel strongly supported the prices in TRR's Draft Determination being applied to the specific sales at issue. Digicel also submitted that after dealing with these sales, TRR should proceed to establish a simple and non-discriminatory set of cost-based pricing applicable to future FCC sales.

40. Digicel relied in part on a set of prices recently imposed by regulation in Tonga for Tonga – Fiji Cable. This pricing regulation is included as Attachment 1. Digicel submitted that this regulation shows the workability of such a regulatory approach in Vanuatu, and that the prices set for the Tonga Cable supported prices for the ICL Cable being even lower than those identified in TRR's Draft Determination.

41. TRR agrees that pricing for a comparable cable, such as that from Tonga to Fiji, is relevant to pricing for capacity on the ICL Cable. Indeed, FCC and ICL previously have contended that initial pricing on the Tonga Cable, prior to the above regulation, should be used as a benchmark for pricing on the ICL Cable.

42. TRR also notes, however, that relevant differences between the ICL Cable and Tonga situation also would have to be taken into account in any such analysis.

43. The Regulation establishing prices for the Tonga Cable involves minimum commitments to capacity by each of the relevant customers, which has not yet occurred in Vanuatu. TRR previously sought to involve interested services providers (and FCC and ICL) in a process in which such matters could be addressed. TRR renews that invitation, and notes that such minimum commitments can reduce risk for all parties, and facilitate agreed pricing reductions.

44. However if operators do not come forward to participate in such a process with TRR, then in any future regulatory steps, TRR will make a reasonable forecast of utilization based on the available information.

45. Digicel also made several comments about the effective date of approved pricing for the specific sales at issue in the Draft Determination. Digicel claimed that all of the approved pricing should have the same effective date, and suggested 1 April 2017, or perhaps even backdating this pricing to include the periods of pre-existing customer contracts with FCC.

46. TRR has not, in this Determination, implemented either of these suggestions.

47. TRR is here implementing its Order No. 1 of 2017, which relates to approval for specific sales of additional capacity. Order No. 1 of 2017 thus covers any sale of capacity after its effective date, including the supply of additional capacity under an existing agreement or supply of capacity after expiry of a prior agreement. As to any such supply, the date on which the supply begins is the appropriate date for the approved pricing to take effect.

48. Digicel also expressed concern that FCC's proposed prices involved unlawful discrimination. TRR confirms that, as stated in the Draft Determination, it has

considered whether proposed pricing involves unjustified price discrimination and has not approved any pricing that involves unlawful discrimination.

D. TVL's Comments

49. TVL agreed in principle that TRR should reject the pricing proposed by FCC as being excessive and/or discriminatory.

50. TVL also expressed concern that the revised pricing in the Draft Determination may still be excessive. TVL submitted that a rate of return of 25-30% was excessive for FCC. TVL stated that such returns would be more appropriate for the risks taken by the entity that constructed and owned the cable (ICL), rather than a reseller of capacity such as FCC, whose risks were materially lower.

51. TVL also stated that the risks of the owner/operator of the ICL Cable presumably were already included in the amounts paid by FCC to ICL, and that such risks should not, in effect be double-counted (as that would impose unduly high prices on consumers). Having regard to these matters, TVL suggested that a rate of return of 14% - 18% was more appropriate to apply to FCC.

52. TRR agrees that identifying the appropriate return, or range of returns, for FCC is not an exact science, and that reasonable arguments exist for applying rate of return lower than 25%-30%.

53. TRR's approach has not been to make a finding that any specific rate of return is "correct", and others are not. Instead, TRR believes that for the purpose of this Determination it is sufficient to find that, in light of the other assumptions in its analysis as to future demand and costs of FCC, an appropriate rate of return for these sales falls into an approximate range of about 20% - 30%TRR then has approved maximum prices consistent with this range, and there being dispute or room for debate as to TRR's modelling of demand and costs. The overall result is approved pricing that appropriately balances the competing concerns of not having prices set too high, or too low, for these limited and specific sales. TRR can and will revisit such rate of return issues in any further Determinations of FCC pricing.

54. TVL also stated that, due to a recent change in management, it no longer wishes to acquire the additional capacity on the terms identified to TRR in early March 2017, and referred to in TRR's Draft Determination, and thus that it is "too late" for TRR to make a determination about that proposed supply.

55. TRR notes that:

(i) generally, speaking, TVL and other service providers should not expect that TRR's regulatory processes will conform to arbitrarily short deadlines arising from administrative or managerial circumstances internal to individual service providers; and

(ii) in this instance, TRR only was advised of TVL's need to acquire additional capacity a few days in advance, and TRR acted promptly to facilitate the supply of that capacity and commence this regulatory process. Especially as such pricing matters are contentious, it would be unreasonable for TVL to have expected a decision by TRR within a significantly shorter period than has occurred.

56. Several days ago, FCC also advised TRR of the new, revised request of TVL for additional capacity from FCC, and the terms proposed by FCC for such capacity, from 1 May 2017. TRR has addressed this request for capacity below, on the basis that TVL and FCC prefer a final determination of this request now (subject to the reconsideration and other review processes in Part 9 of the Act). TRR also notes that FCC also provided additional capacity to TVL, subject to Order No. 1 of 2017, from about March 2017, and accordingly has specified the maximum approved price for that sale of capacity (which was referred to in TRR's Draft Determination)

E. TelSat's Comments:

57. TelSat agreed in principle with TRR's Draft Pricing Determination and offered information in support of such pricing. For example, TelSat detailed reasons why it believes FCC did not face large risks of stranded capacity in the future or over the term of its IRUs. On that basis alone, TelSat contended that pricing in FCC's price list was excessive. TelSat stated:

> "FCC is basing their prices on short term leasing by the ISPs, but they know that we are not going anywhere and whether we change ownership or not, we will need bandwidth long term, so they are not at risk of suddenly having no customers. In fact, bandwidth requirements will only increase as time goes by, for a few reasons:
>
> 1/ The population is always increasing and therefore the number of users increases.
> 2/ The use of the bandwidth is changing from basic emails and video to HD and 4K video on many new platforms.
> 3/ Users tend to view more video when the speeds are better and there is no buffering.
> 4/ The networks are expanding to new areas and new customers
> 5/ Websites are adding more video content because of the faster speeds available nowadays."

58. TelSat also stated that significantly lower prices than proposed by FCC were supported by satellite pricing for international bandwidth. Telsat noted that satellite capacity generally is significantly more expensive than for submarine cable, and that current satellite prices ($US270/Mbps/Month) were significantly below FCC's proposed base price.

59. The above points of TelSat are consistent with the approved pricing in this Determination and related findings of TRR, as referred to below.

III. ANALYSIS OF COSTS-BASED PRICING INFORMATION

60. The specific proposed sales of leased capacity on the ICL Cable that have been submitted to TRR pursuant to Order No. 1 of 2017, are as follows:

   (i) To Digicel: [redacted] Mbps of capacity for a total of [redacted] Mbps of capacity, under a [redacted] term [redacted] of [redacted], for a price of US$[redacted]/Mbps/Month.

   (ii) To Speedcast: [redacted] Mpbs of capacity for a [redacted] term (for the purpose of [redacted]), for a price of US$[redacted]/Mbps/Month;

   (iii) To TVL: [redacted] Mbps of capacity for a total of [redacted] Mbps of capacity, for a [redacted] term, [redacted], for a price of US$[redacted]/Mbps/Month.

   (iv) To TVL, an additional [redacted] Mbps of capacity, for a total of [redacted] Mbps, for a month-to-month term, for a price of $US[redacted]/Mbps/Month.

   (v) To TelSat:

      a. [redacted] Mbps for a term of [redacted], for a price of $US[redacted]/Mbps/Month; or

      b. [redacted] Mbps increasing up to [redacted] Mbps as needed, for a [redacted] term, for a price of $US[redacted]/Mbps/Month; or

      c. [redacted] Mbps [redacted] to [redacted] Mbps for a term of [redacted] for a price of US$[redacted]/Mbps/Month.

IV. FCC Cost Information

61. The relevant cost information for of FCC's pricing includes information as to its historic and future costs, demand and revenues, and margins currently and over the expected life of the IRU capacity acquired by FCC.

62. By far the largest components of FCC's direct cost are:

   (i) the IRU capacity payments it has made or is obligated in the future to make to ICL, and

   (ii) the periodic Operations and Maintenance (O & M) payments it makes to ICL.

A. Capacity Payments

63. FCC's capacity payments are different for the various IRUs it has entered into with ICL.

64. As referred to in Paragraphs 88, 92, 101, 111 and 114 of TRR's June 2016 Determination, these capacity payments (exclusive of O&M payments) were as follows:

(i) FCC's First IRU (in December 2012): involved an up-front capacity payment of $US[redacted] for [redacted] of capacity for a minimum term of 15 years. This translates to about $US[redacted]/Mbps/Month, over the 15 year term.

(ii) FCC's Second IRU (in January 2014): provides for FCC to acquire [redacted] of capacity, for a base term of 15 years, for a price of $US[redacted] (exclusive of O & M). The above price of $US[redacted] was to be paid by [redacted] payments of $US[redacted]. The price for the [redacted] acquired by FCC was about $US[redacted] /Mbps / Month, over the 15 year term.

(iii) On the basis that the total initial [redacted] x STM-1 of capacity ICL sold to FCC represents about [redacted] Mbps of capacity ([redacted] Mbps), the above price of $US[redacted] is about $US[redacted] / Mbps / Month, over the 15 year term;

(iv) FCC's [redacted] IRU (in [redacted]): was for [redacted] of capacity, for a term of 15 years, for a price of $US[redacted] payable as follows: $US[redacted] up front and $US[redacted] (exclusive of O & M charges). The above price of $[redacted] paid by FCC for [redacted] is a price of about $US[redacted] / Mbps / Month, over the [redacted] year term;

(v) Based on the above information, the average capacity payments of FCC, across the total of [redacted] IRU capacity purchased by FCC, would be at or about US$[redacted]/ Mbps/Month, over the [redacted] year terms.

65. FCC's average capacity payments over the period of its IRU contracts with ICL is calculated as follows:

$$Average\ Unit\ Cost\ of\ Capcity\ per\ Month = \frac{\frac{Total\ Cost\ of\ All\ Capacity\ Purchased}{Total\ Capacity\ Purchased}}{Number\ of\ Months\ in\ IRU\ Contract\ Term}$$

66. As referred to above, the inputs to this calculation are:

(i) the total capacity payments total capacity across all of FCC's IRU contracts, which is $[redacted];
(ii) the total capacity purchased, which is [redacted] Mbps; and
(iii) the contracted term of the capacity, which is 180 months.

Applying the above formula gives an average capacity cost of US$[redacted]/Mbps/month.

B. O & M Payments

67. TRR has over time received documents and submissions from FCC as to its actual O & M costs. These arise under FCC's IRU contracts with ICL, and generally are to be paid on quarterly basis to ICL.

68. For example, FCC provided documentation to TRR identifying its O&M payments for February 2016 of US$[redacted] (which equates to a total annual cost of US$[redacted]). FCC's 2015 Financial Accounts identify a similar amount for "Operations, Repairs & Maintenance" of US$[redacted] (or on average US$[redacted] per month).

69. In October 2016, FCC stated that it O&M costs were approximately US$[redacted]/Mbps/month. This was not substantiated by documentation of FCC showing its monthly O & M payments. At this time, FCC had leased around [redacted]Mbps of capacity. For that amount of capacity, the stated figure of US$[redacted]/Mbps/month would result in total annualized O & M costs of about $US[redacted] (US$[redacted] = US$[redacted]/Mbps/Month), or about $[redacted] per month). This figure is consistent with the total O & M costs in FCC's 2015 Financial Accounts. Leasing of additional capacity by FCC above [redacted]Mbps would cause these per unit O & M costs to decrease.

70. In February 2017, FCC claimed that ICL had increased the O&M charges of FCC from US$[redacted] to US$[redacted] per month. This would be a very substantial increase in O & M payments, and so far has not been substantiated by FCC by providing documentation showing such increased monthly payments by FCC to ICL, or explaining how such increased payments validly arise under the IRU contracts. Accordingly, TRR requests that FCC provide supporting information identifying when and why such a cost increase occurred or was agreed with ICL, and the basis on which these increased payments are claimed to be required (i.e. to be costs within the definition of O & M costs in the IRU contracts).

C. Other FCC Costs

71. FCC has costs other than for Capacity and O & M payments. These other costs are for interest/financing, and administration.

72. TRR has received some documentation from FCC about these other costs, namely FCC Financial Statements and supporting information for the year ending 31 December 2015. These materials identify such annual costs during this period of about US$[redacted] per month.

73. FCC recently claimed that as of February 2017, these financing and administration costs were US$[redacted] per month. TRR has not seen substantiation of this figure or of such costs currently, but they are generally consistent with the prior information considered by TRR.

D. Overall Observations About FCC's Costs

74. The above information supports the following observations as to FCC's costs:

(i) The average capacity payments of FCC, across the total of [redacted] IRU capacity purchased by FCC, would be at or about US$[redacted]/ Mbps/Month, over the 15 year IRU terms;

(ii) FCC's O & M costs during 2015 and 2016 appear to have been as low as US$[redacted] per month, or US$[redacted]/Mbps/Month for FCC's total capacity of [redacted] Mbps. FCC claims that these costs recently have increased significantly, to about US$[redacted] per month, but this has not yet been substantiated or explained;

(iii) FCC claims that it currently incurs US$[redacted] per month in other (financing and administration) costs, although this has not been substantiated;

(iv) Using the above figures FCC's total O & M and other costs would be as much as US$[redacted] – US$[redacted] per month, or US$[redacted] – $US[redacted] /Mbps/Month per unit across the total capacity acquired by FCC. FCC's total per unit costs across all capacity it has leased currently thus does not appear to be greater than US$[redacted]/Mbps/Month (being: US$[redacted] + US$[redacted]/Mbps/Month).

V. Pricing Considerations

A. General Considerations

75. In its prior Determinations, TRR made observations as to the requirements and parameters for pricing under the TRR Act. These include pricing being "cost-based" (i.e. cost plus a reasonable return on investment), and pricing being non-discriminatory. This and related matters are considered below in relation to the specific pricing approvals presented to TRR at this time.

76. This Determination only concerns the specific capacity sales presented to TRR for approval, as referred to in Part I above. It does not involve a ruling as to any other proposed sales in the future. Such future sales would be the subject of a further approval process pursuant to during the 12-month period of Order No. 1 of 2017 (or any extension of that Order). Pricing for such future sales also may be lower, or higher, than for the sales in this Draft Determination (depending on the terms of those sales, and the cost and other relevant information then available to TRR at the time). It accordingly would be incorrect for Interested Parties to treat the approved prices in this Draft Determination as being determinative of future prices.

77. The specific pricing approved for the sales the subject of this Draft Determination also could be modified by TRR if material changes in circumstances or new cost or other information is presented to TRR warranting such a revision.

78. TRR has adopted this approach, as referred to in its June 2016 Determination and February 2017 Determination, in part to seek to avoid, if possible, a more intrusive or far-reaching form of regulation, for example, implementation of price caps generally for the range of different amounts and terms of capacity offered by FCC. Whether such further regulation is, in fact, required, will continue to be the subject of market monitoring and assessment by TRR, (as referred to in its February 2017 Determination).

79. The more limited regulatory approach embodied in Order No. 1 of 2017 also seeks to address, or at least begin to address, the market "disconnect" referred to in TRR's prior Determinations, which is reflected in continuing disagreements between FCC

and its customers, regarding pricing, and to allow regulatory flexibility to deal with changing circumstances or new information.

80. The specific pricing approvals presented to TRR in this Determination represent a small portion of the total capacity FCC has to sell, and involve for the most part sales of capacity for very limited committed terms. Accordingly, the pricing approved for these specific sales will not of itself have a large or pervasive effect on FCC or its customers.

B. Price Discrimination

81. The proposed pricing presented for approval in this Draft Determination involves price discrimination that does not appear to be justified based on cost or other relevant considerations. This is an important consideration under the TRR Act, and FCC's Exception.

82. Examples of such price discrimination in the pricing presented by FCC for approval are referred to below:

    (i) FCC proposes to charge TelSat $US[redacted]/Mbps/Month for [redacted] Mbps of capacity for a term of [redacted], and proposes to charge Speedcast US$[redacted]/Mbps/Month for [redacted] Mbps of capacity for a term of [redacted] year; and

    [redacted]

83. TRR also is concerned that FCC's proposed pricing appears to involve unjustified discrimination by reference to the pricing FCC has advised it has provided to another customer, [redacted]. In 2015, this pricing initially was US$[redacted]/Mbps/Month for capacity of [redacted] Mbps, for a term of [redacted], and during late 2016 and currently is said to be $US[redacted]/Mbps/Month. In its Submissions, FCC made no specific attempt to explain or justify this pricing or discrimination. TRR does not see at present any justification for the difference between the prior and/or current pricing for this customer, and the pricing proposed by FCC for the sales at issue in this Determination.

C. Cost-Based Pricing

84. Cost-based pricing for a long-term telecommunications assets, such as the ICL Cable (or FCC's IRU rights in that Cable) takes account of the projected returns over the life of the asset, having regard to relevant factors such as anticipated demand and risk. This process necessarily involves making, on the basis of available data, assumptions as to future matters and reasonable returns having regard to the risks taken and other relevant factors.

85. For example, in the case of submarine cable capacity services, cost-based pricing refers to prices based on the costs incurred by the supplier, using an appropriate cost standard, spread over the economic life of the asset, plus a return on those costs that

represents a fair and reasonable return based on relevant factors, such as the nature of the services and the risks incurred by the supplier, on a risk adjusted basis.

86. In the case of pricing by an owner of a submarine cable, the useful life of the cable may be up to 25 years. FCC is not, however, the owner of the ICL cable, and instead has IRU rights to cable capacity for a committed period of 15 years. Accordingly, the relevant period for assessing cost-based pricing for FCC is 15 years, unless sufficient reasons appear for using a lesser, or greater, period.

87. In its letter to TRR of 27 February 2017, FCC has proposed that TRR use a shorter period of 10 years. TRR has addressed this submission above, and decided to use a period of 15 years for the cost-based pricing in this Determination.

88. The proposed pricing of FCC the subject of this Determination is significantly above the average costs of FCC for the 15-year term of its IRU capacity (as referred to in Part II above). For example, the proposed pricing to [redacted] for [redacted]Mbps of capacity for [redacted] of US$[redacted]/Mbps/Month is more than [redacted] times the current average costs of US$[redacted]/Mbps/Month. The lowest proposed price, of [redacted]/Mbps/Month, is about [redacted] times this average cost.

89. This differential between average costs and proposed pricing does not appear to be warranted for supply of this type of service generally, or to be justified by other factors.

90. For example, public information concerning telecommunications capacity infrastructure returns, and in particular returns for submarine cable, generally indicates that returns are more likely to on the order of 25-30% above cost, at most, depending on the risk characteristics, and may be materially less. As discussed further below, FCC has not provided sufficient justification for prices that are [redacted]%, or more, above its average costs.

91. FCC has sought to support the large differential between its proposed pricing for the supplies at issue in this Determination, and its average costs, by reference to the fact that FCC is assuming large or unusual risks in entering into its long-term IRU contracts.

92. TRR agrees that the risks faced by FCC, as a supplier, are relevant to assessment of a reasonable return or range of return on FCC's costs (i.e. the level of its pricing above those costs). However, the risks faced by FCC are not sufficient to support the large differences between the pricing proposed by FCC and at issue in this Determination, and FCC's average costs.

93. A primary risk faced by FCC in entering into its IRU contacts for a committed 15 year term is that there may be periods in which all of the capacity acquired by FCC is not utilized at all. Due to such "stranded" capacity, FCC may incur materially greater costs than its average costs referred to in Part II above. A related type of risk is that other sources or providers of capacity may emerge who have a lower cost-base than FCC, such that in order to sell capacity, FCC would, at some later stage in the term of

its capacity, have to charge prices that result for some period in negative or less than reasonable returns.

94. FCC has not substantiated that there is a significant or major risk of a large amount of stranded capacity, on average, over the life of its IRU contracts. The reasons for this include that:

(i) Demand for internet capacity has tended to increase significantly over time in developed and emerging telecommunications markets. This is a reasonable assumption also for Vanuatu, where internet usage has been growing and internet service does not yet reach or is not yet used by a substantial portion of the population;

(ii) In the first few years of its business, FCC already has sold a substantial portion of its total capacity. For example, on and after September 2015, FCC had acquired [redacted] Mbps of capacity, and by mid-2016, it had leased [redacted] Mbps of that capacity, and it currently has or is about to have leased 900Mbps of capacity;

(iii) The maximum approved pricing in this Determination is materially below that in FCC's current price list, and such lower pricing has a significant potential to increase demand in the future; and

(iv) Customers in Vanuatu have generally acquired leased capacity (rather than IRU capacity from ICL), and FCC currently is the main or only provider of such leased capacity.

95. Even if such a risk was substantiated at this stage, it would not justify the proposed pricing of FCC at issue in this draft Determination. This is illustrated by the Table below, which identifies the effect of assuming substantial stranded capacity of FCC, on average over the life of its IRU contracts. Scenario "A" assumes no stranded capacity on average over the life of this IRU capacity, and Scenarios "B" and "C" assume substantial amounts of such stranded capacity, on average over the life of this capacity.

Scenarios:	**A**	**B**	**C**
Total capacity costs to FCC	[redacted]	[redacted]	[redacted]
Assumed average utilisation	[redacted]	[redacted]	[redacted]
Average stranded capacity	[redacted]	[redacted]	[redacted]
Cost per unit utilised per 15 ys	[redacted]	[redacted]	[redacted]
Number of months	[redacted]	[redacted]	[redacted]
Cost per Mbps/ Month	[redacted]	[redacted]	[redacted]
Rounded Cost per Mbps/Month	[redacted]	[redacted]	[redacted]
Total O&M + Other Costs per Mbps/Month	[redacted]	[redacted]	[redacted]
Assumed average utilisation	[redacted]	[redacted]	[redacted]
Average stranded capacity	[redacted]	[redacted]	[redacted]
O&M + Other Costs per Mbps/Month	[redacted]	[redacted]	[redacted]
Rounded	[redacted]	[redacted]	[redacted]
Total Costs per Mbps/Month **Mbps/Month**	[redacted]	[redacted]	[redacted]

96. The prices approved by TRR in this Determination also allow cost recovery and a return on investment by FCC, even at high levels of stranded costs that do not seem likely to occur, such as the level referred to in Column C above.

97. The total unit cost figures in the above Table also appear likely to overstate FCC's average costs over the life of this IRU capacity, as the current amount of O & M costs, which are the largest single component of costs, has not been substantiated, is claimed to have increased significantly in recent months, appears to be high, both as a proportion of FCC's total costs and in absolute terms, and in any event such per unit O & M costs would be expected to decrease over time, as increased capacity is sold.

98. TRR therefore believes that the cost, demand, and rate of return parameters referred to above contain sufficient conservatism to protect FCC against, and compensate it for, risks taken in acquiring IRU capacity.

VI. Approved Maximum Prices

99. Based on the information available to TRR at this time, and having regard to the discussion of pricing information and considerations referred to above, it appears that a reasonable estimate of FCC's unit costs is about $[redacted] to [redacted]/Mbps/Month on average over the term of FCC's IRU capacity. For the mid-point of this cost range ($US[redacted]/Mbps/Month), an average price of $US[redacted]/Mbps/Month would correspond to a return of 30% above costs.

100. The nature of this Market so far has been that customers generally have acquired modest amounts of capacity (e.g. 100 – 250Mbps), for short or limited terms (e.g. less than or up to 3 years). This trend in the Market could change if more substantial discounts were available for longer term and/or larger capacity purchases. The approved maximum pricing in this Determination therefore should not limit the potential in the future for such discounts to be provided, especially as such purchases can reduce prices and risks for FCC. Accordingly, the maximum pricing for the lower volume and/or shorter term capacity purchases presented for this Determination would be expected to be materially above the average cost and price range referred to above. TRR also notes that interested parties have agreed that lower prices should apply for longer term and/or larger amounts of capacity, and that TRR has applied this principle in this Determination.

101. For the limited purpose of this Determination, and based on the information and submissions received, and the analysis of TRR (as summarized herein), TRR concludes as follows:

    (i) The prices presented by FCC for approval, are not approved;

    (ii) Further, TRR approves the following sales of additional capacity on the condition that those supplies are at a price not greater than the maximum prices set out below. These prices are to apply from the dates the additional capacity began to be supplied by FCC, unless otherwise stated below:

(iii) For the supply to Digicel of [redacted] Mbps of additional capacity for a total of [redacted] Mbps of capacity, under a [redacted] term [redacted] of [redacted] years, a maximum price of US$[redacted]/Mbps/Month.

(iv) For the supply to Speedcast of [redacted] Mbps of additional capacity for a [redacted] year term (for the purpose of Speedcast continuing to supply capacity to [redacted]), a maximum price of US$[redacted]/Mbps/Month;

(v) For the supply to TVL of [redacted] Mbps of additional capacity for a total of [redacted] Mbps of capacity [redacted] term until 30 April 2017, for a price of US$[redacted]/Mbps/Month.

(vi) For the supply to TVL of a total of [redacted] Mbps of capacity [redacted] term from 1 May 2017, for a price of US$[redacted]/Mbps/Month.

(vii) For a supply to TelSat of [redacted] Mbps for a term of [redacted], a maximum price of $US[redacted]/Mbps/Month; or

(viii) For a supply to TelSat of [redacted] Mbps increasing up to [redacted] Mbps as needed, for a [redacted] term, a maximum price of $[redacted]/Mbps/Month.

102. As stated in TRR's Draft Determination, TRR has not approved the supply of any caching capacity to any of the above customers, and does not do so in this Determination.

103. Despite numerous requests from TRR, FCC has not provided sufficient information from FCC, as required by Order No. 1 of 2017, to support FCC's proposed pricing for such caching services being cost-based and non-discriminatory. Accordingly, this proposed caching pricing is not approved at this time, nor is any other maximum pricing for this supply of caching capacity. TRR urges FCC to promptly provide relevant information so that TRR can give further consideration to the proposed pricing for this supply.

104. To the extent, as appears, that FCC has commenced supply of such capacity, it has done so in violation of Order No. 1 of 2017, and subject to pricing for such supply being determined by TRR.

105. If FCC does not promptly address the above matters with TRR relating to caching capacity, TRR may impose fines or take other enforcement action without further notice to FCC.

Signed on 2/05/2017

REPUBLIC OF VANUATU
OFFICE OF THE TELECOMMUNICATIONS REGULATOR
BUREAU POUR LE RÉGLEMENT DE TÉLÉCOMMUNICATIONS
RÉPUBLIQUE DE VANUATU

Dalsie Baniala
Telecommunications & Radiocommunications Regulator