CABLE AND WIRELESS (JAMAICA) LTD.
COMMENTS ON

COST MODEL FOR FIXED TERMINATION RATES – DRAFT MODEL

11 August 2016

I. INTRODUCTION

1. Cable & Wireless (Jamaica) Ltd., dba "**FLOW**," welcomes the opportunity to respond to the Office of Utilities Regulation's ("**OUR**") public version of its Consultation Document, *Cost Model for Fixed Termination Rates—Draft Model*, dated 22 June 2016.

2. FLOW has identified two preliminary issues regarding the modeling and implementation period and the timing of the Comments on Responses to this consultation.

3. With respect to the draft model as presented in the Consultation Document, FLOW finds that it requires significant revision in respect of inputs and assumptions. Therefore, specific concerns are addressed in our answers below.

4. Please direct any questions you may have to Charles Douglas at charles.douglas@cwc.com.

II. PRELIMINARY ISSUES

Period for setting interconnection rates

5. In its introduction (paragraph 1.3) the OUR states that it "plans to determine wholesale interconnection rates for a period of five (5) years from (from 2016 to 2020)." We note that this period is consistent with the OUR determination made in this proceeding in July 2015. However, this proceeding has been significantly delayed, and we are now running more than a full year behind the schedule originally provided to stakeholders in November 2014. We are

already more than half way through 2016, and a determination will not be made on rates until late 2016.

6. The OUR in its consultation document on Principles and methodology based its reasoning for the 2016-2020 period on the fact that the model would be finalized and ready for use at the end of 2015.[1] Given that the OUR will reach a determination on rates a full year later than originally intended, it must reconsider these dates or the means of implementation. In particular, if the OUR keeps with the original duration and implementation dates—five years and 2016-2020, respectively—then the rates for 2016 will have to be retrospectively applied. FLOW believes this would be unfair, as it would impact the company's cash flow in an unplanned and significantly negative manner.

7. FLOW therefore believes that the OUR should maintain the duration and the implementation dates, but utilize existing rates for the 2016 period and the pure-LRIC based rates for 2017-2020. This solution is by far the easiest and most fair.

Date for submission of Comments on Responses

8. The OUR has set the date for comments on responses to August 17. Given the change in date for the submission from August 3 to August 11, we believe the date for comments on responses should be shifted to August 25.

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1 "Cost Model for Fixed Termination Rates – Principles and Methodology Consultation Document, No. 2015/TEL001/CON.001, page. 12, para. 3.7.

III. C&WJ'S RESPONSE TO OUR QUESTION 1: "DO YOU AGREE THAT THE DEMAND PRESENTED ABOVE REASONABLY REPRESENTS THE JAMAICA FIXED MARKET? "

9. With respect to voice traffic, we believe that the incoming and transit traffic figures are reasonable. However, we believe that the outgoing voice traffic should exhibit the roughly the same rate of decline as the other voice traffic (incoming and transit) in the forecast period.

10. The Broadband and leased line traffic data look reasonable.

IV. C&WJ'S RESPONSE TO OUR QUESTION 2: "DO YOU AGREE THAT THE MIGRATION PERCENTAGE ABOVE AND THE FINAL NUMBER OF NODES ARE REASONABLE AND ACCURATELY REPRESENT THE FORESEEABLE FUTURE OF THE JAMAICAN MARKET?"

11. As we understand it, Table 3 represents the percentage of legacy access nodes, by geotype, that are assumed to have been transitioned to the IP platform. We cannot comment at this time as to the breakdown by geotype as we are not aware of the assignments the OUR's consultants have made of specific nodes to geotypes. However, we can speak to the overall percentages.

12. It would appear that the OUR is assuming a more accelerated transition than is possible. Our experience in Caribbean markets shows that there is a limit on how many legacy sites per year can be realistically transitioned. Thus, we believe that, it is more realistic to assume that the 100% is achieved only in 2021 and that the overall transition progresses as follows:

Year	% of TDM access nodes transitioned
2015:	25%
2016:	34%
2017:	48%
2018:	62.5%
2019:	76%
2020:	91%
2021:	100%

13. With respect to the total number of access nodes estimated for 2020, we believe that the forecasted number of MSANs is low. It is important to keep in mind that even without growth in data services the number of MSANs will have to be significantly greater than the number of legacy nodes that were in operation. This is true even in the suburban and rural geotypes.

V. C&WJ'S RESPONSE TO OUR QUESTION 3: "DO YOU AGREE THAT THE AVERAGE DISTANCE EXTRACTED FROM THE GEOGRAPHICAL ANALYSIS PERFORMED, REASONABLY REPRESENTS THE PREVAILING AVERAGE LENGTH OF THE BACKHAUL NETWORK IN THE GEOGRAPHY OF JAMAICA? "

14. We understand from the methodology described in Section 5.3.1 of the description of the BULRIC model that, for the access rings in the TDM and IP networks, it is assumed that 10 nodes lie on a ring for urban dense and urban geotypes, and 5 nodes lie on a ring for suburban dense and suburban geotypes. We believe that, while in reality the number of nodes on a ring will vary within the same geotype, as well as across geotypes, on average, these are reasonable assumptions.

15. Based on the methodology described in Section 5.3.2, we further understand that, given these assumptions of the average quantity of nodes per ring, the

model then optimizes which nodes are located on a given ring in a manner to minimize the total length of the ring, or, stated differently, to minimize the average distance between access nodes. It is not clear from the methodology whether the distances minimized are road-based or straight-line distances.[2] They should be road-based.

16. There is enough ambiguity about the methodology to make it difficult to analyze fully the reasonableness of the resulting average distances of the rings. However, we suspect something is amiss for the following reasons:

    i. Logically one would assume that legacy node distances will always and everywhere be longer than MSAN distances as more MSANs are necessary to cover a given area than legacy nodes. In the model, however, for the urban dense geotype, the opposite is the case.

    ii. The average distances for the MSANs for each geotype seem significantly shorter than when we have conducted similar analyses elsewhere based on minimal road distances. In our analyses, for similar geotypes, the lowest urban dense average distance was 1.6 km and the highest suburban was 6.3 km. The overall average inter-MSAN distance for the urban dense, urban, suburban dense and suburban geotypes was 3.9 km. The weighted average of the OUR's distances is only 2.7 km, however. Thus, we suspect the OUR's estimated distances are too low.

17. With respect to the average link distance for the Minimum Distance Tree topology, it is difficult to sense check the average link distance of the nodes

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2 Footnote 7 in the description of the BULRIC Model indicates that the distances used for the Minimum Distance Tree methodology are road distances, but it is not clear regarding the rings.

without knowing the specific assignment of nodes to Rural and Rural Spread geotypes. However, the methodology that the OUR proposes appears valid.

VI. C&WJ'S RESPONSE TO OUR QUESTION 4: "DO YOU AGREE THAT THE RESOURCES OBTAINED ARE REASONABLE TO SATISFY DEMAND?"

18. Based on the description of the BULRIC model, we do not believe the resources covered in Table 7 are reasonable to satisfy modelled demand. With respect to the resource types, we would expect that, at minimum, the resources would include the following additional types:

i. Access Gateway Control Function (AGCF)
ii. Softswitch – Hardware/Software
iii. Media Gateway Control Function (MGCF)
iv. TDM to IP Converters
v. Home Subscriber Server (HSS)
vi. Voicemail System (VMS)
vii. Billing System
viii. International Exchange
ix. Interconnection Costs
x. Interconnection Service Specific Costs
xi. Points of Interconnect
xii. Sites (including electricity and fuel)

xiii. Traditional node CPUs

xiv. Civil Works and Ducts associated with the transmission network

19. Furthermore, it is not clear whether all the additional costs associated with a subsea fibre transmission system have been included, e.g., cable landing stations and far-end network access point charges.

20. With respect to the resource volumes, on the sole basis of the description of the BULRIC model provided, it is difficult for us to assess the forecasted volumes. However, we do have the following concerns:

i. The number of MSAN chassis appears low, relative to the number of NGN access nodes in Table 4. We would have anticipated twice the number of MSAN chassis in Table 7, based on the total number of access nodes in Table 4. The divergence is likely to be found in the dimensioning rule used for MSAN chassis, which may be flawed.

ii. The number of Edge Chassis appears low as well. While it is clear from the description of the BULRIC model how the number of Edge chassis are determined from the number of Edge nodes, it is *not* clear how the number of Edge nodes are determined in the first place. We would have thought that the number of Edge nodes for a Jamaican national network would have been over 100. Thus, an Edge chassis count of 55 would not be possible.

iii. A similar comment can be made for Distribution and Core chassis. We would imagine that by 2020 the number of Distribution nodes would be over 30. The number of Core nodes should be 6 over the modelled period. The number of chassis for each will, again, depend on the dimensioning rule. In which case, based on the node count, the chassis figures appear too low.

iv. Regarding fibre transmission, in our response to Question 3, we have discussed why we believe the fibre distances are low. By extension, the fibre kilometer number in Table 7 is low as well.

v. Regarding microwave transmission, although the description of the BULRIC model contains a discussion of how the number of towers is calculated, it does not describe how the underlying assumptions for that calculation (# of remote nodes in backhaul and % of remote nodes connected with microwave) were derived. We would have thought that, given the increase in demand for data services and need to push connectivity to more remote areas, the number of towers in the future would be greater than it is today. The number of towers in Table 7 indicates otherwise.

VII. C&WJ'S RESPONSE TO OUR QUESTION 5: "DO YOU AGREE THAT THE UNITARY COSTS USED FOR THE RESOURCES ARE ACCURATE FOR THE TELECOMMUNICATION OPERATIONS IN JAMAICA?"

21. We do not consider the unitary costs used for the resources to be accurate. In particular,

i. Our previously submitted data to the OUR suggests the capex costs associated with sites may be as much as twice what the OUR is presenting in the Consultation Document.

ii. Air-conditioning units appear to be absent from the site costs.

iii. The capex associated with generators appears reasonable for a small sites, but not for larger sites. It is possible for example that the OUR has not adequately scaled or assumed back-up generators for larger, critical sites.

iv. With respect to fibre, the unit capex appears to exceed the cost of the fibre itself, but is nowhere near the figure for fibre plus associated ducts and civil works.

v. The capex for traditional exchange equipment is at least half of what we had estimated (and submitted to the OUR) on the basis of actual asset purchase prices discounted for cost trends. Furthermore, the

Input sheet does not provide any references to where the benchmarks were acquired so we are unable to confirm the appropriateness of those benchmarks.

vi. The majority of the NGN node and port equipment unit capex is significantly lower than what we had reported to the OUR. And again, the Input sheet does not provide any references to where the benchmarks were acquired so we are unable to confirm the appropriateness of those benchmarks. We will be providing specific invoice back-up for our numbers in a confidential submission.

vii. Much of the core switching software capex is priced close to zero with no explanation. We will be providing specific invoice back-up for more realistic pricing in a confidential submission.

viii. Interconnection costs and Interconnection specific costs have not been introduced at all. We will be providing detailed numbers on this in a confidential submission.

ix. Opex as a percentage of capex for NGN equipment is generally lower than what international benchmarks suggest.

x. The opex as a percentage of capex associated with TDM equipment is inexplicitly lower than the opex as a percentage of capex of NGN equipment. We therefore believe that the opex of the TDM equipment has been underestimated even more than the opex associated with NGN equipment.

VIII. C&WJ'S RESPONSE TO OUR QUESTION 6: "DO YOU AGREE THAT THE COST TRENDS ARE REASONABLE? "

22. Although we find the opex cost trends reasonable, the unit capex decline appears to be exaggerated in some cases. We believe experience shows that the maximum cost reduction should be -5% to -6% annually. This would be more consistent with

international benchmarks, including relevant equipment capex found in the 2012 Jamaican mobile model.

IX. C&WJ'S RESPONSE TO OUR QUESTION 7: "DO YOU AGREE THAT THE COST STRUCTURE SHOWN ABOVE IS REASONABLE FOR AN OPERATOR WITH THE DEMAND PRESENTED IN TABLE 1 AND IN TABLE 2?"

23. The cost structure presented in Table 8 does not appear unreasonable. However, as indicated in the foregoing, we have serious concerns with the absolute levels of each of these cost categories.

X. C&WJ'S RESPONSE TO OUR QUESTION 8: "DO YOU AGREE WITH THE ROUTING FACTORS USED?"

24. We disagree with the routing factors provided in the "Map Routing Factors" sheet. Indeed, we believe there must be an error as the traffic services appear not to use any transmission or switching facilities.

XI. C&WJ'S RESPONSE TO OUR QUESTION 9: "DO YOU AGREE THAT THE SERVICES' UNIT COSTS OBTAINED ARE REASONABLE?"

25. We do not find the services' unit costs reasonable. The fixed termination rates derived on the basis of pure LRIC models in Europe are generally higher than that derived in the OUR's cost model, which is counter-intuitive given the larger size of the European networks.

26. However, it is too early to judge the OUR results as there are clearly a number of cost items missing from the model. Including these missing items,

particularly the interconnection specific costs, will significantly change the results.

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