Digicel

Digicel's comments

on

The Office of Utilities Regulation Supplementary Consultation Document

on

Cost Model for the Assessment of Fixed Infrastructure Sharing Rates

8th October 2021

OFFICIAL STATEMENT

We thank you for providing this opportunity for Digicel to make a submission on the Cost Model for the Assessment of Fixed Infrastructure Sharing Rates Draft Model. Digicel is, of course, available and would be happy to discuss our submission further.

The comments as provided herein are not exhaustive and Digicel's decision not to respond to any particular issue(s) raised in the Consultation Document does not necessarily represent agreement, in whole or in part nor does any position taken by Digicel in this document represent a waiver or concession of any sort of Digicel's rights in any way. Digicel expressly reserves all its rights in this matter generally.

Please do not hesitate to refer any questions or remarks that may arise as a result of these comments by Digicel to:

Digicel (Jamaica) Limited
Samantha Burke
Legal and Regulatory Director
14 Ocean Boulevard
Kingston, Jamaica
Fax: +1 (876) 922 7666
Tel: +1 (876) 619-5000
Email: samantha.burke@digicelgroup.com

"Sense-checking" exercise points to model flaws/shortcomings

Digicel notes that a number of previous substantive points it has raised in relation to Fixed Infrastructure Sharing Rates Draft Model have neither been adopted in a revised version of the model nor has objective reasons been provided for their being rejected. In this response we reinforce a number of those points including with further evidence from other jurisdictions.

Before engaging in the detail of the questions put forward by the OUR in the consultation we consider that in assessing the validity of any model, it is important that a "*sense-checking*" exercise is carried out on the outputs of the model against international benchmarks of prices for the same or similar services being considered in Jamaica. This is all the more important where so much of the input data is built around assumptions or parameter benchmarks rather being based on actual accounting/operational data. It is apparent from the model that Flow has either failed to provide the necessary information on the inventory of its network or it does not have reliable information in this regard. It is unclear for example why Axon would have to make assumptions about the *percent of ducts in use*, would require international benchmarking data on *average number of subducts per ducts* but at the same time "Operators" that could not provide it with reliable data in this regard are able to provide detail on the *average number of cables per subduct*.

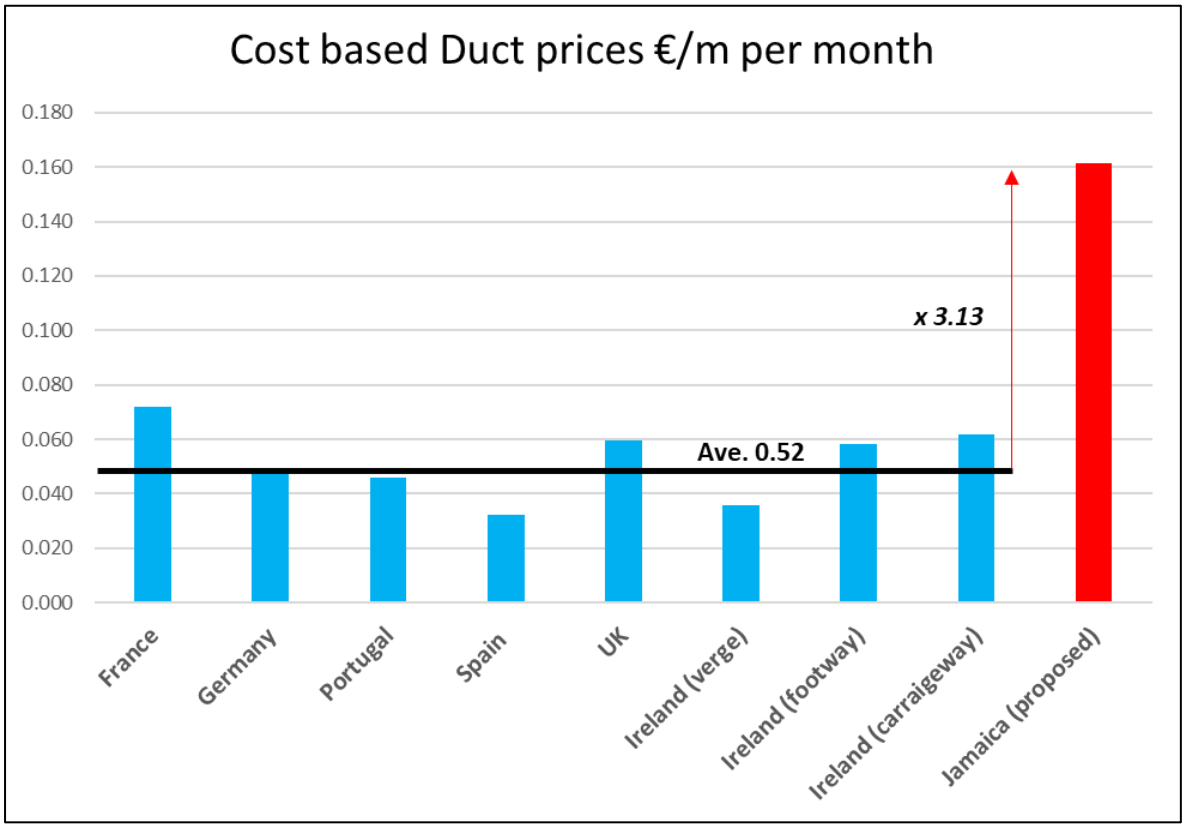
Even where information has apparently been sourced from industry, this is not qualified in any way beyond being attributed to "Operators". That raises concerns about transparency and the degree to which purported "Operator" data has been validated. Where data is attributed to being sourced from "International Benchmarks" there is again no greater granularity provided as to the actual source beyond this description. Against that backdrop of modelled parameters and variables, comparing the model's outputs to pricing produced by similar costing exercises will either provide a degree of comfort or raise appropriate concerns about the validity of the inputs. Such "sense-checking" exercises are regularly undertaken by regulators internationally where cost modelling is involved e.g., see Ofcom's approach of modelling the cost of a fibre network in the UK[1]. Where significant deviations are observed, it is likely to raise doubts about underlying assumptions and should prompt a more thorough review of the inputs in such circumstances.

Digicel has examined duct and pole output prices generated by the model with international comparators whose prices are the product of detailed cost modelling exercises. In this regard we have examined pricing in France, Germany, Portugal, Spain, UK and Ireland (where 3 variants of duct pricing has been estimated)[2].

[1] Paragraph 2.27 of "*Promoting Competition and Investment in fibre networks – Initial Consultation on approach to modelling the costs of a fibre network*", Ofcom, June 2019.

[2] France, Germany, Portugal, Spain benchmarks p.38 "*Best practice for access infrastructure*" – Wik-Consult Report for Vodafone, April 2019 [Wik-Voda Report]. UK from WIK-Voda Report and Ofcom. Ireland data from ComReg draft decision on CEI pricing [IRE-CEI Report].

Figure 1



From **Figure 1** we can see an alarming gap is observable between comparator set prices with proposed rental rates in the draft Jamaican[3] model. In fact the Axon model is generating outputs more than 3 times the average of benchmarks from other jurisdictions. While some differences is to be expected from country to country, it is nevertheless notable that the standard deviation of the comparator set of rates is just **€0.013** for a sample of countries that varies significantly from a topological, population density and climate perspective which means despite material differences in the characteristics of these countries the delta in cost-based duct estimates across the set is relatively narrow.

Looking at a more detailed a comparative assessment by considering labour costs[4] – a major component of trench/duct/subduct unitary pricing[5] – the breath of the gap observed in **Figure 1** becomes even harder to justify. Using just the minimum wage from the countries included in **Figure 1** above (and it is reasonable to assume engineers would likely earn a significant premium over the minimum wage in those countries) against the hourly engineering wage[6] identified in the model, we can see (**Figure 2**) that not only can the comparatively very high Jamaica duct prices not be explained by labour cost discrepancies, this variable in fact would put downward pressure on model outputs if actual data versus "international benchmarks" of unitary capital costs were used.

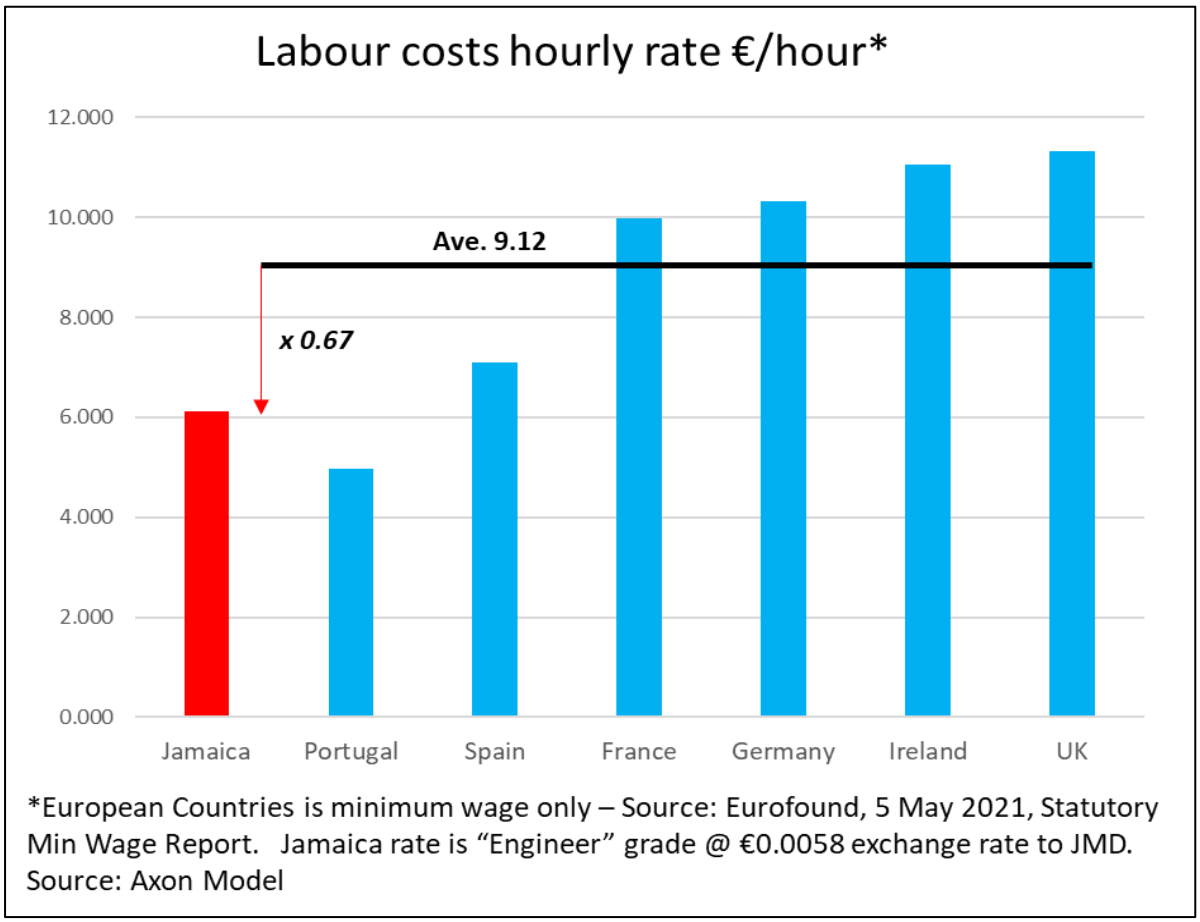
[3] Exchange rate of JMD$ 1 = €0.0058

[4] Although the Axon model relies on International benchmarks to inform unit price Capex (see sheet '1A INP Unitary Costs'), the model still provides an estimate of hourly Engineer wages of JMD $1,056 on sheet '2A INP NW' to inform feasibility assessment. This rate would probably be the high end of labour employed to carrying out civil works where a higher portion of less skilled labour would be deployed but that rate used here as a conservative comparative proxy for illustrative purposes.

[5] The unitary capex pricing in the Axon model has embedded labour costs based on international capex prices so may have implied labour costs significantly higher than is actually the case in Jamaica.

[6] Cell F61 on the "2A INP NW" sheet

Figure 2



*European Countries is minimum wage only – Source: Eurofound, 5 May 2021, Statutory Min Wage Report. Jamaica rate is "Engineer" grade @ €0.0058 exchange rate to JMD. Source: Axon Model

This evidence suggests that at the very least some degree of **normalisation** should be applied to International Benchmarks Axon are using to reflect these material discrepancies if labour costs in the benchmarked countries exhibit similar wage deltas. It is important to again stress that only minimum wage statistics are used for the European comparator set with qualified engineer staff in those countries likely to earn a significant premium above minimum wage. It would not be a difficult task for Axon to carry out a labour cost comparator assessment between Jamaica and its benchmarked sources to establish an appropriate normalisation factor for at least the labour intensive input prices (e.g. trench costs).

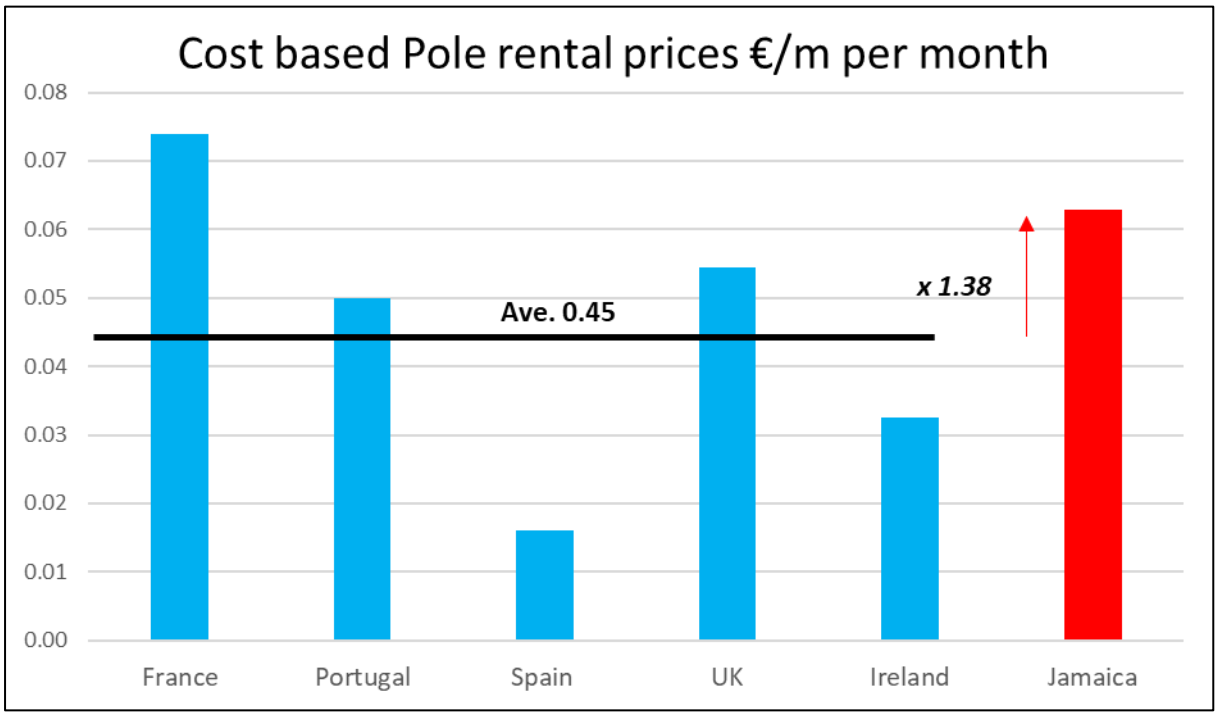
Turning then to the a high level assessment of pole rental prices (**Figure 3**)[7], again with a European comparator set we can see that while the significant delta observed in relation to Jamaican duct prices is not present here, it nevertheless remains on the high side which again raises concerns about the appropriateness of the asset input prices used in the model and further compounds an argument on the need for the application of normalisation factors to the international benchmarks being used by Axon. In the event that this exercise has already been carried out then the discrepancies observed requires some explanation or alternatively other aspects of the model need to be considered in greater detail.

[7] France, Portugal, UK and Spain prices, *Ibid* Wik-Voda Report. Ireland *Ibid*, IRE-CEI Report. Exchange JMD$1 = €0.0058

It should be further noted that while the pole rental prices in the above analysis is on the high end of the scale for the comparator set, given that price at least falls within of a range that is below the highest price in the set, this only serves to heighten concerns about the enormous gap observed on duct prices in **Figure 1**. This is because if Jamaica were *genuinely* such a significant outlier in relation to duct pricing, then one would expect to see a similar trend in relation to pole prices. It is much more likely however (particularly based on labour cost analysis), that the true cost of duct rental in Jamaica should be materially lower. If following on from this latest review of inputs that the model continues to demonstrate the current **exceptional premium** over international comparators then this requires a comprehensive explanation from Axon and the OUR.

It should be noted that where data is not available – and as noted significant gaps in Jamaica specific data is evident in the input pricing of the model – the OUR can rely on international benchmarks to inform wholesale pricing in accordance with 33 (2) of the Act. In this regard international benchmarks based **on the outputs of final models** from several countries is likely to be much more reliable than ad-hoc benchmarking of input variables from multiple jurisdictions (as currently seems to be the case) where the comparator country samples changes from one benchmarked variable to the next.

Figure 3



Specific Questions

Q1. Do you agree with the parameters included in worksheet "2A INP NW" of the Fixed Infrastructure Sharing Cost Model?

Percentage of Ducts used

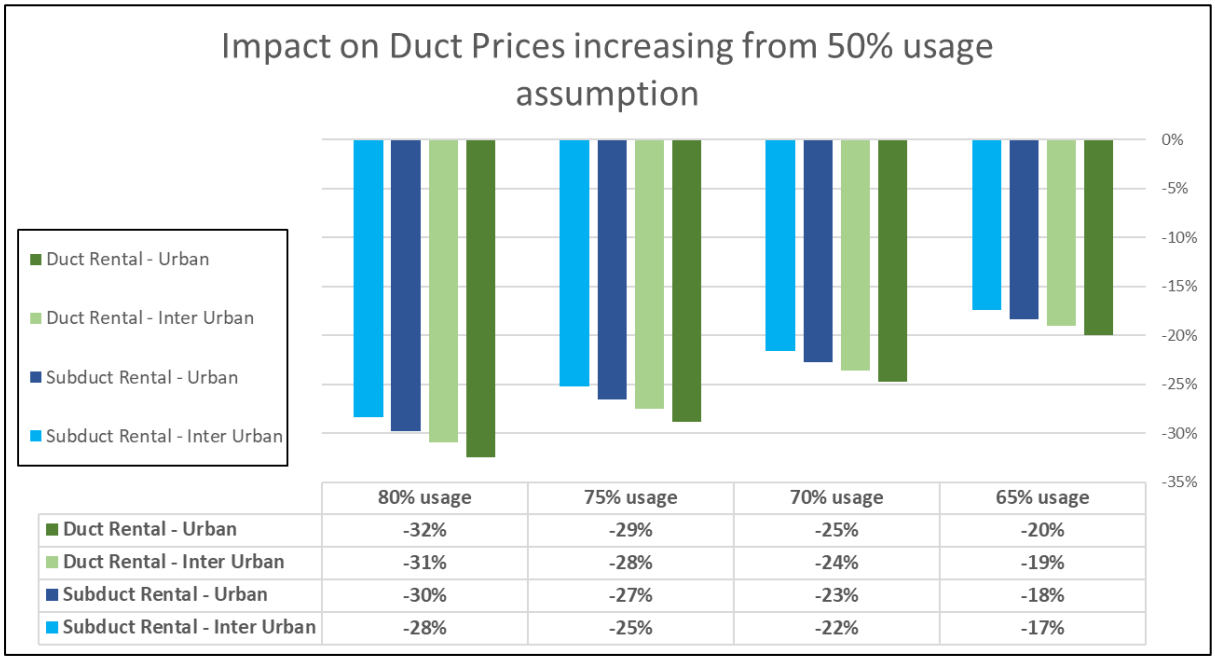
As has been previously noted by Digicel[8], this input variable remains of particular concern. Digicel consider the "*Percentage of ducts that are used*" (Urban/Inter Urban) is excessively low and arbitrary

[8] See response to Question 2 Digicel submission, February 22, 2021

and would amount to a material over-recovery of costs if it is not amended. The source of the assumption is attributed to the OUR's consultants Axon, but there is no justification or basis for the assumption provided. In this regard Axon has not identified the source of the "assumption" and it is clear that is not based on either information provided by operators or international benchmarks as if this had been the case, one would have expected it to be identified as such under the "Source Type" column on worksheet *'"2A INP NW'*. The OUR has reasonably put the onus on those making submissions to the consultation to support their positions with evidence and data where possible. It is reasonable that the same standard is applied to the OUR's own consultants (and shared with stakeholders) in relation to key data inputs and in particular where the outcome has such a material impact on output prices.

Figure 4 provides a sensitivity analysis of the impact on duct prices where more reasonable usage assumptions are applied. For example, increasing usage from ***50%*** to ***65%*** would result in as much as a 20% reduction in the output prices.

Figure 4



	80% usage	75% usage	70% usage	65% usage
Duct Rental - Urban	-32%	-29%	-25%	-20%
Duct Rental - Inter Urban	-31%	-28%	-24%	-19%
Subduct Rental - Urban	-30%	-27%	-23%	-18%
Subduct Rental - Inter Urban	-28%	-25%	-22%	-17%

Source: Sensitivity analysis based on Axon Model

In response to concerns raised by Digicel earlier this year in relation to "used" versus "usable" assumptions, Flow strongly disagreed that such a distinction needs to be made for modelling purposes noting that it supported "*how the OUR has modelled usage as the best practice approach to ensuring recovery of costs*". Flow did not however provide any evidence that this approach was in fact "best practice" (indeed there appears to be no evidence that in relation to this variable it is "practice" anywhere) and further stated if Digicel's approach were adopted infrastructure costs would never be recovered. This claim however runs entirely contrary to the reality on the ground in the Jamaican market.

Firstly, it is reasonable to assume that Flow is already recovering its costs on ducts even in the absence of any other operator seeking to share its duct infrastructure and so any sharing of infrastructure is going to result in incremental revenue to Flow rather than having formed any part of its investment/ cost recovery strategy. Furthermore, it is reasonable to assume that most if not all of the excess

capacity installed by Flow at the trench design phase was provisioned for its own future needs and account needs to be taken of this, otherwise requesting operators will paying for capital investment targeted at supporting the incumbents future needs as well as their own. Finally, it is improbable that if Flows current duct headroom were really at 50%[9] it would seek to maintain that level of headroom through further investment even if Digicel gets access to existing ducts.

Flow's claim that if Digicel's approach were adopted providers would not be incentivised to deploy "*excess capacity*" is telling in this regard. The flip side of this argument is of course, if Flow were simply permitted to deploy capacity that was inefficiently excessive and allowed to apportion costs associated with excess capacity to access seekers, such a policy would reward inefficient investment (through "gold-plating") and result in higher prices for consumers and damage to competition. The **Draft Rules** are clear paragraph **7.1 (g)** that charges should be set in a manner that promotes **efficient use of assets** and thus an assessment of what threshold constitutes excess capacity is an important aspect that needs to be determined as part of the current exercise. An arbitrary figure that has such a material impact on pricing cannot simply be adopted in a model without a clear and objective justification for the figure chosen.

To be clear it is not Digicel's position that some headroom should not be provided for to cater for future requirements but 50% assumption appears to be entirely unsubstantiated, arbitrary and excessive. Concerns in this regard may be compounded by the inherent simplistic approach taken in the model that appears to take no account of **existing duct, subduct and cable diameters** which might assist in identifying the true scale of excess capacity. For example if currently occupied subduct has themselves got excess capacity then 50% duct headroom may underestimate the actual excess capacity implied by the model.

Where data is not available some degree of leeway on making assumptions may be reasonable but that degree of freedom needs to be balanced against the fact that model already takes a Current Cost Accounting Approach which, even if all assumptions were entirely accurate, will almost certainly result in an over recovery of costs for reasons outlined in Digicel's February 2021 submission (i.e. international best practice for duct access pricing is to apply Historic Cost Accounting standards to ensure over-recovery does not occur). Whether or not the correct balance is being achieved should also be informed by a comparison of **outputs** from international benchmarks as Digicel has highlight in the preamble to responding to the questions (**Figure 1**).

Evidence internationally also strongly suggests the 50% assumed headroom is excessive. In **Portugal**, the incumbent is required to reserve **20%** of usable internal space for alternative operators[10]. This raises an important issue of distinguishing between capacity **attributable** to facilitating competitive entry and the overall capacity the incumbent has chosen to deploy. In making this distinction by requiring a reserve of capacity for entrants, the incumbent is not incentivised to deploy excess capacity as a means to extracting higher rents from those entrants. Requiring Digicel or other providers to contribute to Flow's purported future requirements is not just unreasonable given such providers would have no input to investment decisions that can materially raise their costs, but it would appear to be contrary to the Draft Rules 7.1 (b) which states:

[9] A further implication of this is that if were a fair reflection of the headroom available in Flow ducts there should rarely if ever be a case where access is refused based on capacity constraints. Any such incidences would represent strong anecdotal evidence that an immediate review of this model input would be required.
[10] p.38 "*Best practice for access infrastructure*" – Wik-Consult Report for Vodafone, April 2019.

> *Infrastructure Providers shall **unbundle** distinct facilities and corresponding charges sufficiently so that the infrastructure Seeker pays only the **specific elements required*** [emphasis added]

By way of illustration if Digicel required access to 20% of unused capacity (bringing used capacity up from assumed 50% up to 70%), the current design of the model would have Digicel contributing to excess duct capacity 150% (30%/20%) above its actual requirements, while Flow would be contributing to just 60% (30%/50%) excess capacity above its existing requirements. This example is indicative of a service that is **not sufficiently unbundled**. An adjustment to the final output price could (discussed in greater detail in response to Question 5) also be applied to cater for such anomalies as a more granular mechanism for cost recovery for each of the output prices in the model will need to be considered in any event given the model does not do this e.g. are pole and duct costs to be recovered on a per operator basis, service basis, per cable basis etc? The model merely calculates the total cost that needs to be recovered per unit (e.g. per meter) but avoids how the apportionment of the cost across the unit is applied i.e. what portion of the meter is paid for by who.

Further evidence in support of amending this parameter above 50% is based on the approach taken in the **UK** and **Spain** where the regulator **limits the incumbents space reservation** which effectively amounts to maximum headroom of up to 33%[11]. As we can see from **Chart 4**, implementing a similar approach in Jamaica would reduce duct prices by ***c20%*** per meter.

In Ireland economic consultant's Cartesian recently modelled duct access prices for the Irish telecommunications market[12] on behalf of ComReg where its dimensioning assumptions in the model considered 4 subducts per duct with one of the sub-ducts assumed empty for future expansion i.e. **25%** of ducts not being utilised. Applying a similar assumption to the Jamaican model would result in a **25-29%** cost reduction for access to duct/subduct prices.

Average cables in each occupied subduct

Based on the current iteration of the model this figure is largely irrelevant and this in and of itself is a cause for concern. Whether the figure is set to 1.47 or 147, it has no impact on the cost of duct or subduct access (Urban or Inter-Urban) prices. The reason for this is that all fibre (including dark fibre) availability is deemed to be carried by Flow's aerial network. However, if we assume that some percentage of dark fibre is carried via ducts then this has the impact of increasing the per meter cost of dark fibre rental by virtue of dark fibre being required to make a contribution of higher duct/subduct costs. Worryingly however, there is no corresponding reduction in annual duct/subduct prices. Equally there is no change in pole costs even though a lower percentage of dark fibre is utilising pole carriage and thus contributing to its cost recovery. **Table 1** presents sensitivity analysis from the model that supports these claims.

[11] Ibid, page 39. The 33% calculation is based on limit of one duct where there are 3 or more ducts available.
[12] Cartesian Access Network Model – Specification Document – ComReg 20/101 (paragraph 4.57)

Table 1

Modelled Operator cost recovery under 2 dark fibre deployment alternatives with no change to underlying costs

Base on sale of single unit of each service i.e. 1 km per service and a single pole rented

Service	100% Aerial Dark Fibre		50% Aerial Dark Fibre		Delta	
	2020	**2021**	**2020**	**2021**	**2020**	**2021**
Duct Rental - Urban	325,896	334,265	325,896	334,265	-	-
Duct Rental - Inter Urban	251,247	257,737	251,247	257,737	-	-
Subduct Rental - Urban	154,711	158,930	154,711	158,930	-	-
Subduct Rental - Inter Urban	129,778	133,370	129,778	133,370	-	-
Pole Rental	4,017	4,275	4,017	4,275	-	-
Dark Fibre Rental - Urban	7,835	7,729	11,040	11,079	3,205	3,350
Dark Fibre Rental - Inter Urban	12,989	12,814	16,931	16,961	3,941	4,147
Total Cost recovery	886,473	909,120	893,620	916,617	7,146	7,498

No corresponding reduction in cost of other services

Over recovery of costs

From the table we can see the implications for dark fibre prices if 50% of the service is now catered for in ducts/subducts. Such a development would have not drive higher overall costs for ducts/subducts but more of the cost recovery for that investment would be recovered through dark fibre. However, although the second part of that causal relationship operates as one might expect there is no corresponding reduction in cost of duct/subduct rental which now ought to have to recover less than if the dark fibre service was not provided via duct.

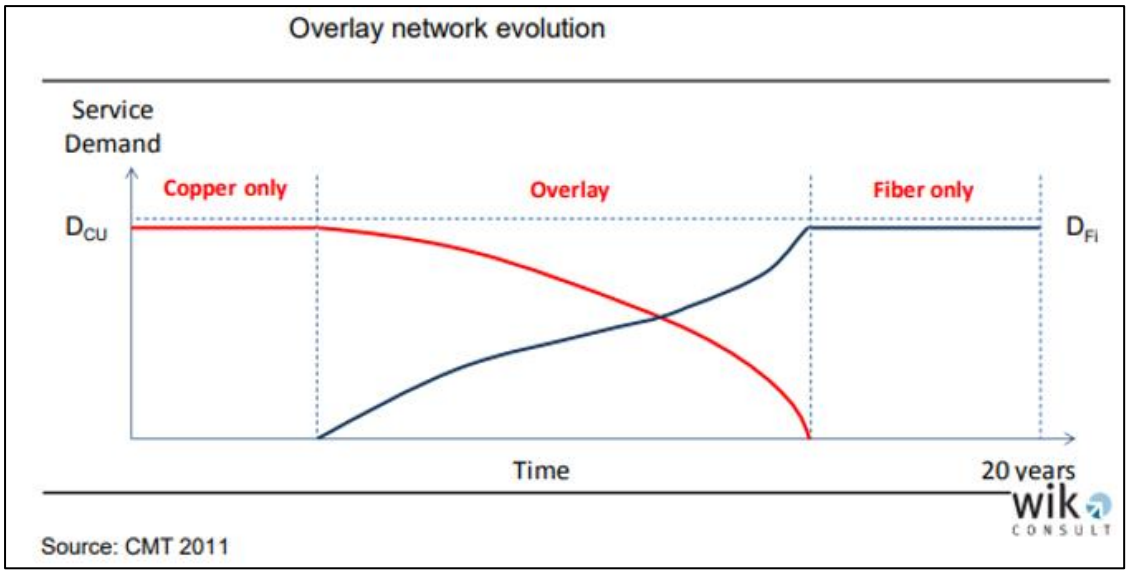
We can see from the sensitivity analysis while dark fibre prices are contributing more to duct cost recovery, an increase in the other types of cable (i.e. copper) makes no additional contribution to duct costs regardless of the quantity of cables deployed. The implications of this is that cost causality principles are not being observed in the model where copper cable investment appears to be free-riding duct/subduct investment. This in turn can lead to an outcome where access seekers are effectively subsidising Flow copper services. This approach appears to be contrary to **Clause 7.1 (h) of the Draft Rules**.

Furthermore, the model suggests that the source of the 1.47 cables per/subduct is based on information supplied by "Operators". As such presumably the same "Operators" indicated that no fibre was being carried by ducts and by implication this means all cables carried by duct are copper cables. This claims does not seem credible in light of the excess duct capacity available on urban and inter-urban routes implied by the model. It is unclear to what extent Axon or the OUR has attempted to rationalise such anomalies but it is critical from a transparency perspective that such outcomes are objectively justified and in accordance with **efficiency principles** enshrined in 29A (1) of the Act and Clause 7.1 of the Draft Rules.

It is critical that fair proportion of duct/subduct pricing is attributed to copper services. In this regard we refer to the approach taken by the Spanish regulator (CMT) when it built its initial infrastructure model in 2012. CMT determined that "*the initial copper demand and the final fibre demand will be used to dimension the required civil infrastructure. The costs assignable to each of these infrastructures will be assigned appropriately* ***according to the duct space consumed***"[13] [emphasis added]. We reproduce in **Figure 5** a graphical representation of this approach to the CMT modelling exercise. The Jamaican model has not been developed to allow for a shifting copper to fibre dynamic over time but nevertheless should be able to apportion a greater allotment of duct/subduct costs to copper services where cable volumes are increased in the model (even where underground fibre is held at zero(.

[13] Section 6.2 of "*Bottom up cost model for fixed access network in Spain* – Model Description" – December 2012

Figure 5 – CMT Original Chart



Percentage of lit strands in a cable

Digicel contends that the cost of excess capacity on a fibre cable (which is the percentage of unlit strands i.e. dark fibre) should not be paid for by the access seeker that does not own the fibre. There are a number of different scenarios by which the OUR can approach this issue. To assist in the analysis please see **Figure 6.** The left most bar represents the current situation where on "*Urban*" links the modelled Operator ("MO") is estimated to have c30% of lit pairs. As no infrastructure sharing on dark fibre has yet taken place the entire cost of the fibre line is recovered by the owner.

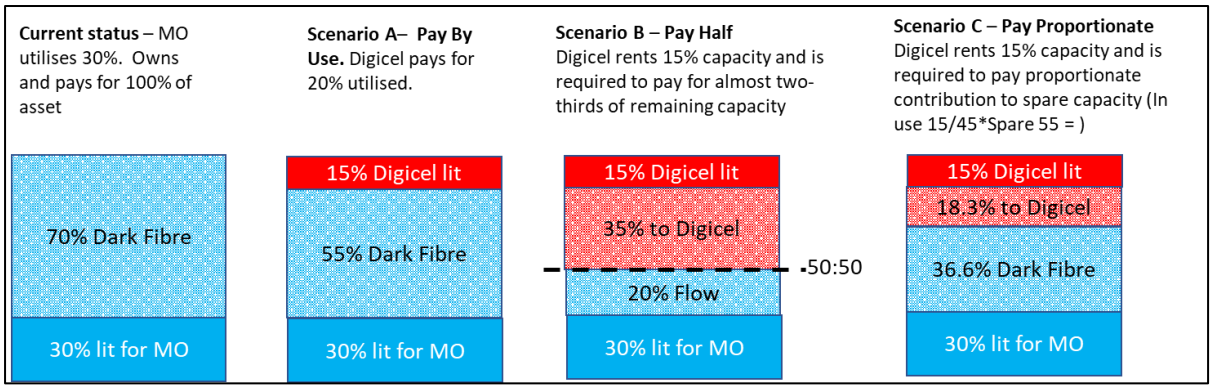
The second bar (**Scenario A**) assumes Digicel now rents and lights up 15% of capacity on the fibre cable. This scenario represents the position that Digicel advocates for as being fair and reasonable i.e. that the requesting operator pays only for the number of lit strands it rents. Digicel consider this is also consistent with the unbundling requirements of **Draft Rules 7 (b)** which seeks to protect access seekers from paying for more services than it requires. **Scenario B** covers one possible (albeit inappropriate) interpretation of the current model i.e. even if Digicel requires just 15% of the entire cable capacity it must contribute to half of its costs. In this scenario Digicel would be contributing to almost two thirds of the cost of the spare capacity, while the MO would be contributing to just one third of those costs yet all of that spare capacity represents a business opportunity for the MO. This approach in Digicel's view is clearly not compliant with the Draft Rules from an unbundling perspective.

While Digicel contend that there is no sound economic arguments as to why it should pay for any excess capacity on the cable (and so promotes Scenario A), **Scenario C** at least incorporates an approach to it contributing to spare capacit in a fairer more proportionate manner. In this regard the spare capacity (unlit fibre) costs are shared between operators in proportion to the percentage of lit strands each has. In the example in **Figure 6**, Digicel contribute to one third of the costs of excess capacity given it is taking up one third of the lit strands on the cable. In further justifying this approach it is important to remember that at the ends of the lit strands are chargeable services/units to retail customers. This means if one operator is utilising double the capacity of another then it clearly has circa double the level of retail activity associated with traffic on that cable. **Scenario C** will allow for an even spread of cost recovery across all chargeable retail units (regardless of the operator retail customers are with). Adopting **Scenario B** would result in significant competitive distortions as in the

example provided, Digicel's customers would be paying disproportionately for excess capacity by comparison to the MO.

In practice how **Scenario C** would be applied using the current outputs of the model which indicates the rental cost associated with 1Km of Urban dark fibre would equate to **JMD$ 7,729** per year, Digicel contribution to this cost would be JMD 7,729*0.333% = JMD $ 2,576/Km of rented dark fibre.

Figure 6



Percentage of fibre cables that are aerial

Digicel has consistently made a case for why submarine dark fibre rental needs to be modelled separately yet the model continues not to make this distinction and assumes 100% of dark fibre is carried aerially. The OUR will be aware that Flow has in fact a submarine Inter-Urban fibre network. In response to Flows claim that if Digicel considered this service relevant to the Infrastructure Sharing cost assessment it should have raised this in response to a January 2020 consultation. In the first instance, the legal basis on which Flow claims such an exercise would be outside the current "process" is unclear. Operators' legal obligations with respect to providing infrastructure access are subject to the existing legislation and the Draft Rules when promulgated in Jamaican law. Where a dispute arises in relation to the access to subsea cables such requests and potential disputes will have be dealt with in the same manner as for example, pole access. It is therefore practical and efficient that an estimate of subsea cable rental is modelled at this juncture. It would appear to be much more efficient to carry out that exercise as part of the current "process" than to potentially seek to employ external consultants at some stage in the future to revisit this issue. In addition the prospect of a dispute arising is likely to be substantially mitigated where indicative pricing has been calculated as part of the current modelling exercise.

Secondly and in any event, Digicel would point out that it has raised this issue as far back as 2017 in response to the **Proposed Rule Making** consultation. In response to the same consultation it also indicated that of the services listed, which included "Dark Fibre", any other forms of infrastructure sharing required would simply be "*variants or subsets*" of those listed markets. It is clear that subsea cable is such variant and no different in that regard than "Inter-Urban" or "Urban" rental of dark fibre over poles. The fact that Digicel's is seeking to have this particular variant covered by cost model in no way lends support to Flows suggestion that costing exercises "*should only be undertaken in response to a legitimate and specific infrastructure sharing requests*" because there are too many variants to consider. That position is diametrically opposed to the views of multiple regulators across the world including the European Union. Simply because there is not a single variant of a service type, to argue that a modelling exercise incorporating a number of subsets of that service type is pointless, again runs contrary to best practice globally. In the UK Ofcom has defined different geographic

markets for the same service where different costing mythologies apply. In Ireland ComReg has proposed different access pricing for poles and ducts depending on the type of operator making the request and the geography wherein the request applies.

The underlying basis for such pricing divisions is informed by market definition analysis consistent with competition law principles in defining the relevant product and geographic markets. For example, in Jamaica it is clear there is a market for Dark Fibre. It is equally clear that there is a geographic dimension to that market (i.e. Urban v Inter-Urban). It is equally clear that Inter-Urban dark fibre can be provided over poles, via ducts or via subsea cable. There are no other alternatives (Digicel is aware of) to those three forms of carriage in Jamaica and thus the suggestion that there are simply too many variants of dark fibre access **does not stack up on an economic or practical assessment**. The first two scenarios are catered for in the model while the third is glaringly absent.

Even if Flow were to argue that there is in fact a specific geographic market for dark fibre rental on a per route basis e.g. from Mandeville to Christiana (both inland), the existing model can be used to inform negotiation and disputes in relation to such an access request because the current model derives a prices **for land based dark fibre rental** via duct and pole. If however, Digicel or another provider requests subsea dark fibre access from Ocho Rios to Montego Bay, there is currently no reference point in the model to inform those negotiations or disputes unless it is the OUR's position that the existing dark fibre prices in the model does cover the subsea scenario.

Question 2: Do you agree with the relationships and usage factors defined between the different resources and service included in the Fixed Infrastructure Model?

Many of Digicel's concerns in this regard are covered in response to Question 1. In particular we draw attention to our response on the "***average cables to subducts***" and the associated relationship analysis covered in this section and in **Table 1**. Where fibre cables are included in ducts (by reducing the aerial cable assumption below 100%) dark fibre costs increase by virtue of more duct costs being attributed to dark fibre. However, where fibre carriage is maintained at 100% aerial and the number of cables in a duct is increased from its current level of 1.47, it has no impact on duct/subduct rental prices. There is an inherent contradiction of principles in this as it implies the model has been constructed in such a manner that copper cables contribution to cost is capped even if subsequent revisions of the model identifies that 1.47 underestimates copper cable occupancy.

Consequently, while fibre services clearly contribute to the recovery of duct/subduct charges when put underground, the contribution of copper cable services to such recovery appears to be non-existent. This might explain why current proposed unit costs are more than 3**00% higher than international benchmarks**. When the model is adjusted to assume there is underground fibre cable then subsequently increasing the "*average cables to subducts*" will result in a reduction in dark fibre price, all else being equal, and that is as you would expect to see as this implies more cables take on more costs of the ducts/subducts. However, where cables take on more costs of ducts/subducts then the rental prices for these services should fall if over-recovery of costs is to be avoided but the model does not make such an adjustment. This is a design flaw.

Furthermore, if increased cable occupancy takes on more costs when some percentage of fibre is assumed to be underground, then increased cable occupancy should also take on more costs even where fibre is 100% aerial because higher copper cable occupancy should be attract more of those costs. Again the model is not demonstrating outputs consistent with this logical correlation. In Digicel's view this constitutes a potentially serious flaw in the model that needs requires explanation if not amended.

Also covered in response to **Question 1** was cost recovery relationships based on subduct "use and availability", and "dark and lit fibre". The model does not currently provide guidance on the apportionment of costs in these scenarios and we provide greater insight to the implications fo this in response to Question 5.

Q3. Do you agree with the unit costs and useful lives considered in the Fixed Infrastructure Sharing Cost Model?

Unit Costs and Useful Lives

Given the preamble to this section of the consultation question covers useful asset lives for "each of the assets defined" and not just ancillary services, Digicel understand the question relates to providing evidence on unit capex/useful lives etc in relation to all defined assets within the model.

Asset Lives of Ducts

The model assumes duct asset life of just 35 years. We would note that in preparing its statutory accounts Cable & Wireless has historically used assumption of 40 years. Prior to consolidated reporting following the merger with Flow we can see this from extract from C&W St. Kitts & Nevis in 2017[14]:

Table 2

	Estimated Useful Lives
Cables and transmission equipment	up to 20 years
Network equipment	3 to 25 years
Office equipment and computers	4 to 10 years
Plant and machinery	5 to 40 years
Computer equipment	4 years
Ducting	40 years
Freehold buildings	40 years
Leasehold buildings	up to 40 years or term of lease if less

Turning to international evidence (also covered under the next section) we would further note that the European Commission's 2013 Non-Discrimination Recommendation[15] notes:

> "*NRAs should set the lifetime of the civil engineering assets at a duration corresponding to the expected period of time during which the asset is useful and to the demand profile. This is normally* ***not less than 40 years*** *in the case of ducts*" [*point 36*]

Asset Lives of Poles

As previously noted Digicel regard the asset life of poles in the model to be too short at 20 years. In addition to evidence already presented in our last response in relation to the North American market, it is worth nothing that in the UK, Ofcom has recently issued a direction[16] to BT Openreach that it "*must ensure the accounting asset life of poles reflects their useful economic life*". This direction

[14] C&W 2017 Annual Report St. Kitts

[15] 2013/466/EU: "*Commission Recommendation of 11 September 2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment*"

[16] See Table 5.3 of BT Regulatory Reporting Requirements 2020, Table 5.3

followed on from analysis by Ofcom that highlighted evidence of pole lives being "*significantly older*"[17] than the 18 years BT Openreach had used in previous regulatory reporting systems. The Ofcom approach is consistent with that advocated by the European Commission in relation to *point 36* of the 2013 Non-Discrimination Recommendation quoted above i.e. the useful life is what is relevant on a forward looking basis.

Similarly in Ireland, the incumbent has been directed by the regulator to apply 30 year asset life to (wooden) poles and 40 years to ducts[18] as can be seen from the following extract of its most recently published regulatory accounts:

Table 3

Asset Class	Estimated Economic Life (Years)
Buildings	40
Transmission Equipment	
Duct	40
Poles	30
Overhead cable	15
Underground cable	20
Other local network	8-20

In relation to the UK and Ireland it is worth noting that both are Northern European countries that regularly experience severe weather conditions in winter months. We would further note that In France the regulator has set an asset life of 25 years for poles[19].

Finally, further evidence from North America where the **Florida State Senate** recently (May 2021) passed on the **Broadband Internet Infrastructure Bill**[20] they defined the "*useful life*" of wooden utility pools to be **30 years** and notably **50 years** for concrete utility pools i.e. double the asset life current assumed in the Axon model. Applying a 50 year asset life to concrete poles in the model would reduce the annual cost recovery by over 10%. Axon source for the 25 year asset life assumption on concreate poles is attributed to "Operators" but it is unclear what has informed operator's submissions in that regard and the extent to which those claims has been validated.

Relationship between asset lives and fully depreciated asset assumption

Digicel consider that the model's assumption that only 20% of Flows civil infrastructure assets has to date been fully depreciated appears generously conservative i.e. the number is likely to be considerably higher and again this underestimation could be a significant contributory factor to why Jamaica is such an international outlier in terms of the costs being generated by the model (see **Figures 1 & 3**). It is entirely unclear as to the basis for Axon's 20% "industry average" assumption. The inputs to the average calculation should be published by the OUR to assess the appropriateness of the benchmarked operators.

[17] *Ibid* fn 138
[18] See section 5.13 of Incumbent Regulated Accounts for 2020.
[19] *Ibid* Wik Vodafone Report, Table 2-1.
[20] CS/CS/HB 1239 Broadband Internet Infrastructure 25 May, 2021

While it is impossible for Digicel to be precise on what the appropriate figure should be as this would require a full forensic review of historical internal accounting information at Flow there are assessments the OUR/Axon can carry out to validate the figures historically and annual assessments that can inform whether or not this figure should be amended going forward.

In the first instance a detailed review of Flows historical Fixed Asset Register (FAR) ought to be the first port of call. This is precisely what Axon has done very recently for the Danish telecommunications regulatory (DBA) in examining the costs of the incumbent TDC. In carrying out its exercise for the DBA in this manner, Axon estimated that the ratio of fully depreciated assets on TDCs copper network equated to **36.8%**. Critically however, Axon note in the "Excel Model Manual"[21] they produced for the DBA that this figure was likely to be underestimated for a number of reasons and that the DBA recommended the copper network fully depreciated rate to be increase to **50%.**

Of significant importance and relevance to the current Jamaican exercise, Axon supported this proposition by DBA noting "***this outcome is also supported by the results of the confidential benchmarks available to Axon***".

It is difficult to reconcile Axon's estimate of the "*industry average*" source as applied to the Jamaica model with their statement in the Danish model manual indicating that their **benchmarking exercise** suggests a fully depreciated rate of 50% should apply. Setting fully depreciated assets to 50% in the Jamaican model would **reduce duct/subduct price by c*33%.*** While this change would still make Jamaica an international outlier by comparison to the comparator set covered in **Figure 1**, it would at least reduce the gap from *3 times higher* than the average to double the average.

It is important to stress that it makes no difference that the Jamaican model is a CCA model and the Danish model is a LRAIC model. The commentary in the Danish Axon document pertains to an assessment and benchmarking of "fully depreciated" assets independent of costing methodology.

On a forward-looking basis there are means by which the OUR can assess the appropriateness of the final figure used (which in Digicel's view ought to be much closer to 50% than 20%) and amend as it goes. For example, if the appropriate useful asset life of wooden poles is 20 years then if Flow are to maintain the network to a '*fit for purpose*' standard it must observe an annual pole replenishment programme that meets the expectations of that useful life assumption. In this scenario for every 100 poles currently on its network it would need to replace on average 5 poles per year if the network is not to fall into disrepair. The OUR will be in a position on an annual basis to assess what percentage of poles has been replaced going forward. Where evidence emerges that this has not occurred then it should result in either increasing the percentage of network assets assumed to be fully depreciated (because asset replacement is **not keeping pace** with asset deprecation) or it should extend the assets lives of poles having been inappropriate in the first instance.

Similarly, the OUR can carry the same exercise in reviewing Flow's detailed capital expenditure accounts over the last 3 to 4 to 5 years to establish if the rate of pole replacement is consistent its 20 year asset life assumption and making adjustments to the fully depreciated assumption and/or asset lives accordingly as noted above. Jamaican trade data may also be a useful source of information to establish the trend of importation of utility poles.[22]

---

[21] Development of the Danish LRAIC model for fixed networks, Excel model manual, Axon Partners Group, 4 May 2020.

[22] Although this may also crossover with JPS import requirements it will provide a useful validation reference point nonetheless.

Digicel would conclude its response to this point by stressing the importance of the OUR determining a fair and reasonable estimate of fully depreciated assets and in light of the new evidence that Axon has only **recently carried out a benchmarking exercise** that supports a view that a 50% figure is justifiable, a significant revision to the current 20% figure ought to now occur.

Q4. Do you agree with the inputs included in the Fixed Infrastructure Share Cost Model regarding ancillary services?

Feasibility study

Digicel considers that the allocation of feasibility study costs should be considered on a **case-by-case basis**. The Draft Rules clearly contemplates three possible outcomes from the Infrastructure Seeker **OR** the Infrastructure provider covering the costs of the feasibility study, to a scenario where both operators share those costs. Where there is a net cost to the Infrastructure Provider associated with the feasibility study then some form of compensation is justified. However, where it is the net beneficiary it should be obliged to cover the full cost of the feasibility study.

Determining whether or not Flow is a net beneficiary from a feasibility study associated with infrastructure sharing arrangements would be a relatively straightforward exercise that could be captured by the following conditions;

> If ***X – YD > 1***, then Inf. Seeker contribution to Inf. Provider = X – Y,
>
> If ***X – YD < 1***, then Inf. Provider covers entire cost of feasibility study,
>
> Where **X** = Cost of feasibility study, **YD** = Expected Discounted Revenue earned by Inf. Provider from sharing access over the contractual period.

Based on these conditions, the Infrastructure Seeker would pay the full cost of the feasibility study if ultimately no infrastructure sharing agreement was reached at the end of the process or both operators would share the costs where an agreement was ultimately reached but where the expected discounted revenues does not cover full cost of the feasibility study. By contrast, the Infrastructure Provider would bear the full costs of the feasibility study where upon reaching agreement its expected discounted revenue from the arrangement is greater than the costs of the feasibility study.

These conditions will also promote the principles of fairness and efficiency e.g. Infrastructure Seekers will not request feasibility studies unless they are serious about entering into arrangements as they will ultimately bear the costs where they decide not proceed with renting the services. In turn, the Infrastructure Provider will have an incentive to carry out the study in cost effective manner where it must bear some or all of the costs of the feasibility study in the event that an arrangement is ultimately entered into.

It is clear from the Act that in making such assessment the opportunity costs of the Infrastructure Provider **should not be considered** in an assessment as to whether or not it is a net beneficiary as this is strictly prohibited under Clause 7.1 (f) of the Draft Rules.

Question 5: Do you agree that the services results obtained in the Fixed Infrastructure Sharing Cost Model are a reasonable reflection of the inputs outlined and the methodology determined?

If the inputs of the model are wrong and wrong by a wide margin (and Digicel contend that this is the case[23] for a large number of inputs for reasons outlined above) then it is a secondary issue as to

[23] Even when allowing for +/-30% randomisation factor in certain instances

whether or not the outputs are a fair reflection of those inputs because correctly arriving at the wrong answer makes the answer no less wrong. Setting aside this concern for the moment, Digicel would query whether the outputs of the model are purely a function of the inputs and the "methodology determined" as seems to be implied by the question.

In this regard there are a number of important decisions inherent in the model that was simply not considered in the methodology determined. For example, as outlined in response to question 2 above the model does not properly consider the allocation of duct/subduct costs to existing copper services. The same analysis also highlighted a modelling flaw that where dark fibre takes on more duct/subduct costs when an assumption about underground fibre is introduced, there is no corresponding reduction in duct/subduct rental prices and relying on its outputs in the underground fibre scenario would lead to over recovery of costs.

We would also reiterate that if so much of the model is reliant on benchmark data for inputs, one is far less likely to fall into error by simply using benchmarking data on model outputs from other jurisdictions because by definition it will inherently smooth out residual errors that might be present in benchmarked inputs.

As a "sense-checking" exercise the OUR should require Axon to carry out its own benchmarking exercise based on model outputs rather than inputs. This top down approach to benchmarking should not prove time consuming or costly as it is clear Axon has already access to a significant benchmarking data base on infrastructure sharing as evidenced by work it has carried out for the Danish regulator.

Final decision needs to clarify that prices are indicative of single operator costs only

It is important that in finalising the model that OUR clarify the prices generated in the "6A OUT SUMMARY RESULTS" are indicative unitary costs of the various services that covers the ***entire cost of the investment*** and on-going maintenance of the various network elements and are not the charges that would apply where **more than one operator** (including Flow through self-supply) is utilising the assets. This may be self-evident to those close to model development and the OUR but may lead to unnecessary confusion during negotiations where it is not clearly stated.

For example, while the model indicates that the pole rental costs will be recovered based on a charge per pole of **JMD$ 4,275** per year in 2021, clearly where the pole is carrying cables owned by more than operator both operators would not have to pay this sum but rather the cost of the pole would have to be shared either between cables using the services or on a per operator basis.

Clearly charging two operators JMD$ 4,275 will lead to double recovery of costs on each pole (***2*$4,275= $8,500***) where both operators are utilising those poles but this needs to be clearly called out. For example, such clarifications were provided by the Irish regulator as part of its recent pole and duct pricing review. In this regard, while it published prices in a similar format (albeit materially lower) to those in the Axon model, it noted that "*the pole access price may vary depending on the number…of users of the pole. For example, [the incumbent] and one other operator have cables on a pole then all the pole costs are split 50:50 between [the incumbent] and the other operator*". Similarly for duct access, while again publishing prices in a format similar to Axon it noted that such "*costs should continue to be shared among…users based on…the per metre cost of the duct network divided* ***by the total number of cables*** *(copper and fibre) using the network*" [**emphasis added**]. In the case of the latter clarification provided we would note that the current OUR consultation and model is silent on ultimate splitting of duct costs notwithstanding Digicel consider a **per cable basis split** to be the only logical and reasonable approach if compliance with the Draft Rules is to be observed.

In relation to pole costs the consultation and model are also silent on the apportionment of costs between copper and fibre cable. Digicel would suggest there is a strong case that an allocation of costs should take account of the **type and number of cables** carried by the poles. It is well understood that copper cables for example are significantly heavier and result in more pole maintenance operating expenditure. A report prepared by WIK in 2019 noted in that "*US operator Verizon has noted that overall, operating a fibre network is 60 % cheaper compared to operating a copper network due to savings in required buildings (60-80 %), energy (40-60 %) and maintenance (40-60 %).* The report goes on to note that part of the reason for this is that "*the use of fibre networks as opposed to copper networks* ***results in more efficient use of ducts and poles by thinner and lighter fibre cables***"[24]. This view is further supported by Ofcom who in 2018 noted:

> *Fibre also has installation benefits compared with copper. Fibre cables can be significantly smaller than copper cables: first, because the fibres are significantly thinner, second because the coating can be thinner because no effective electric insolation is required, and third only one fibre strand is needed for transmission in both directions. Furthermore fibre is significantly lighter than copper, so easier to install on aerial poles.*[25]

Consequently, infrastructure price negotiations (or formal disputes in the event of failed negotiations) ought to account for a fair distribution of annual pole costs based on the quantity and type of cable being carried by the pole. Flow's submission of 8 April 2021 appears to reject Digicel's proposal that account should be taken of copper services but we do not understand the point ultimately being advanced by Flow in this regard. Flow has an extensive copper network and by logical extension a significant allocation of costs from existing infrastructure must be allocated to copper services. Simply because the model or consultation is not measuring the costs of third party access to copper services does not mean the methodology for calculating costs of services considered should not take account of cost allocations to other services utilising the infrastructure. In fact failure to do so would amount to unfair cross-subsidisation of copper services by third party access seekers.

Indeed as noted by Flow in its most recent submission that what is produced by the model is largely "*illustrative examples*" of infrastructure sharing scenarios. To a large extent this is true because for example, Axon has simply calculated **the total cost to be recovered** by a pole or duct per km etc for a single operator. However, it is clear that illustrative output can be used to share costs depending on how many copper cables currently occupy a duct, or how many operators are utilising a pole etc. Such specific scenarios can be easily applied to the illustrative case of a single operator cover the total cost.

The final decision needs to be clear on this fact however self-evident it may appear in order to avoid unnecessary confusion and recent responses suggest such confusion may have already arisen. In this regard, Digicel consider it would be helpful if an annex to the final decision provided some scenario based examples of how pricing might apply where 2 or more operators has access to various types of services considered in the model.

---------- END ----------

[24] P. 48 "*Copper Swith-Off, fibre take-up and ULL tariffs in France*", WiK Consult, September 2014,
[25] Benefits of Ultrafast Broadband – Paper prepared for Ofcom, February 2018