
Office of Utilities Regulation

Cost Model for the Assessment of Fixed Infrastructure Sharing Rates – Draft Model

Consultation Document



OFFICE OF UTILITIES REGULATION

2021 January 18

Abstract

The Telecommunications Act ("the Act"), specifically Section 29A, empowers the Office to impose on operators the obligation to share infrastructure (tangibles and intangibles) and to determine the terms and conditions of a sharing arrangement. In keeping with the mandate established under section 29A, the OUR has developed and consulted on Infrastructure Sharing Rules ("the Draft Rules"). These Rules are currently awaiting promulgation. Once promulgated, the Rules will be applicable to all telecommunications infrastructure that is amenable to sharing.

This document has been prepared to facilitate discussion and consultation with operators and industry stakeholders in relation to the development of a fixed infrastructure sharing cost model carried out by the Office of Utilities Regulation (OUR), with the support of Axon Partners Group Consulting (Axon Consulting).

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Consultation Process

Persons who wish to express opinions on this Consultation Document are invited to submit their comments in writing to the Office of Utilities Regulation (“OUR”) by post, delivery, facsimile or e-mail addressed to:

Office of Utilities Regulation
P.O. Box 593,
36 Trafalgar Road,
Kingston 10

Attention: Fay Samuels
Fax: (1) 876 929-3635
E-mail: FISC@our.org.jm

Responses are requested by 2021 February 15.

Any confidential information should be submitted separately and clearly identified as such. The submission of confidential information should be accompanied by a detailed justification in keeping with section 7(6) of the Telecommunications Act.

Responses that are not confidential, pursuant to sections 7(6) and 7A of the Telecommunications Act, will be posted to the OUR’s website (<http://www.our.org.jm/>). Respondents are therefore requested, where possible, to supply their responses in electronic form to facilitate such postings.

Consultative Timetable

The timetable for the consultation is summarized in the table below:

Event	Date
Publish Consultation Document	2021 January 18
Responses to the Consultation Document	By 2021 February 15
Comments on Responses	By 2021 March 2
Issue Determination Notice	By 2021 September

Chapter 1: Introduction

Background

- 1.1. Infrastructure sharing has been identified as a means by which developing countries and other emerging economies can extend and improve the quality of Internet access services, especially for those marginalized communities that remain excluded from pervasive and affordable broadband. Globally, operators are also embracing the principle of sharing, as the traditional ownership model where individual network operators owned and/or operated the entire infrastructure required to provide services to their customers has been increasingly challenged.
- 1.2. Section 29A of the Telecommunications Act ("the Act") empowers the Office to impose on operators the obligation to share infrastructure (tangibles and intangibles) and to determine the terms and conditions of a sharing arrangement. In keeping with the mandate established under section 29A, the OUR has developed and consulted on Infrastructure Sharing Rules ("the Draft Rules"). These Rules are currently awaiting promulgation. Once promulgated the Rules will be applicable to all telecommunications infrastructure that is amenable to sharing.
- 1.3. Taking account of the realities of the Jamaican telecommunications sector, the OUR decided that proactive regulatory initiatives were necessary to address the sharing of fixed infrastructure. The OUR is of the view that the development of a tool by which to determine and validate fixed infrastructure sharing charges, will allow the OUR to discharge its mandate in an expeditious manner. As such the OUR has taken steps to develop a standalone fixed infrastructure sharing cost model to evaluate the costs of fixed infrastructure sharing services.
- 1.4. On 2020 January 8, the OUR published the Consultation Document, "Update of the Fixed Cost Model and Assessment of Fixed Infrastructure Sharing Costs - Principles and Methodology – Consultation Document" (Document No: 2020/TEL/001/CON.001). The document outlined the proposed methodology for the development of the Fixed Infrastructure

Sharing Cost Model. A data request was also sent to operators in October 2019.

- 1.5. Having analysed the comments made by stakeholders, the OUR published the Determination Notice entitled "Assessment of Fixed Infrastructure Sharing Costs – Principles and Methodology - Determination Notice" (Document No. 2020/TEL/021/DET.005) (hereinafter "the Methodology") on 2020 December 28. The document presented the determinations regarding the methodological framework, which will be used to develop the infrastructure sharing cost model.

Purpose of the Document

- 1.6. A draft Fixed Infrastructure Sharing Cost Model ("Draft Model") has been developed based on the methodological framework outlined in the Methodology. The purpose of this consultation is to present the Draft Model to operators and other stakeholders so they can provide comments on its inputs, algorithms and results.
- 1.7. Some of the inputs included in the model, which have been reported by operators, have been anonymised (multiplied by a random factor of $\pm 30\%$) to preserve the confidentiality of the information.
- 1.8. The OUR is of the opinion that Jamaican operators are in a good position to contribute to the development of this model. Therefore, the OUR invites them to provide their views and comments on the Draft Model.
- 1.9. The OUR encourages stakeholders to support all comments on the Draft Model with relevant arguments and also data, analysis, benchmarking studies and information based on the national situation, or on the experience of other countries, (if relevant) to support comments. The OUR is likely to give greater weight to comments supported by relevant, appropriate arguments and evidence.
- 1.10. After the conclusion of this consultation process, the OUR will address the contributions provided by operators and other stakeholders and a final version of the Fixed Infrastructure Sharing Cost Model will be developed.

Structure of Document

1.11. The remainder of the document is structured as follows:

- **Chapter 2** outlines the legal and regulatory framework that describes the remit of the OUR in regard to the setting of infrastructure sharing rates.
- **Chapter 3** provides a description of the consultation documentation and
- **Chapter 4** presents details on the significant aspects of the model.

Chapter 2: Legal and Regulatory Framework

2.1. The power of the OUR to regulate telecommunication services and facilities is articulated in the Telecommunications Act, of which the main objectives are:

- (a) *To promote and protect the interest of the public*
- (b) *To promote universal access to telecommunications services for all persons in Jamaica*
- (c) *To facilitate the achievement of the objects referred to in paragraphs (a) and (b) in a manner consistent with Jamaica's international commitments in relation to the liberalization of telecommunications; and*
- (d) *to promote the telecommunications industry in Jamaica by encouraging economically efficient investment in, and use of, infrastructure to provide specified services in Jamaica.*

2.2. As part of its overall functions to regulate specified services and facilities under section 4(1) of the Act, and in keeping with its express power to determine the rates which may be charged in respect of the provision of a prescribed utility service under section 4(4) of the Office of Utilities Regulation Act ("the OUR Act"), the OUR is authorised to determine the prices charged by telecommunications operators for the provision of services.

Section 4(1)(a) of the Act states:

"(1) The Office shall regulate telecommunications in accordance with this Act and for that purpose the Office shall –

(a) regulate specified services and facilities"

Section 4(4) of the OUR Act states:

"(4) The Office shall have power to determine, in accordance with the provisions of this Act, the rates or fares which may be charged in respect of the provisions of a prescribed utility service."

- 2.3. A "specified service" is defined in section 2 of the Act to mean, inter alia, a telecommunications service, while a "prescribed utility service" is defined in section 2 and the First Schedule of the OUR Act to include the provision of telecommunications services.
- 2.4. With respect to infrastructure sharing, express provisions regarding the powers of the OUR to impose an infrastructure sharing obligation and to determine the terms and conditions of the infrastructure obligation are set out in section 29A of the Act which reads as follows:

"(1) Subject to subsection (3), the Office may -

(a) impose an infrastructure sharing obligation on a licensee, where the Office considers it to be justified having regard to any of the following considerations –

(i) matters relating to public health or to the environment or town planning or other development considerations;

(ii) economic inefficiencies; or

(iii) physical or technical impracticability;

(b) determine the terms and conditions of any infrastructure sharing obligation imposed pursuant to paragraph (a); and

(c) hear and determine complaints made by licensees and disputes in respect of charges and other terms and conditions of the infrastructure sharing arrangement.

(2) All infrastructure sharing arrangements made by the Office shall include the making of rules, after consultation with the Minister, for the apportionment of the costs of sharing infrastructure; and the rules shall be made in accordance with the principles set out in section 33.

(3) In determining whether to impose an infrastructure sharing obligation on a licensee, or in determining the terms and conditions of an infrastructure sharing obligation imposed under subsection

(1), the Office shall consult with licensees, the relevant environmental and planning authorities and the Authority.

(4) In this section-

"infrastructure sharing" means the provision to licensees of access to tangibles used in connection with a public network or intangibles facilitating the utilization of a public network;

"intangibles" includes agreements, arrangements, leases, licences, franchises, rights of way, easements and other similar interests;

"tangibles" includes-

- a) lines, cables and wires;*
- b) equipment and apparatus;*
- c) towers, risers and masts;*
- d) conduits, tunnels and ducts;*
- e) manholes and other holes and pits;*
- f) poles and antennae;*
- g) huts and landing stations; and*
- h) land, building and other real property."*

2.5. In accordance with its powers under section 29A of the Act, on 2017 March 30, the OUR published and consulted on a Notice of Proposed Rule-Making on Infrastructure Sharing which included Proposed Infrastructure Sharing Rules - Document No. 2017/TEL/002/NPR.001. (Infrastructure Sharing NPRM). The OUR further published on 2018 February 9 its comments on the responses received from this consultation in the document - Infrastructure Sharing: OUR's Comments on Responses to Notice of Proposed Rulemaking (Document No. 2018/TEL/003/RES.001), which document in combination with the Infrastructure Sharing NPRM the proposed infrastructure sharing rules to be promulgated (the "Draft Rules").

The Draft Rules, which were developed in accordance with section 33 of the Act, are yet to be promulgated, but outlines the guidelines proposed by the OUR for, inter alia, the assessment of rates for shared infrastructure. While the Draft Rules are not yet in effect, the proposals in this Determination Notice are consistent with the provisions of the Draft Rules, so as to ensure consistency in the overall regulatory framework when the Infrastructure Sharing Rules are put into operation.

2.6. Clauses 7.1 to 7.4 of the Draft Rules state:

7.1 An Infrastructure Provider shall set infrastructure sharing rates in accordance with the following principles:

- a. Charges for infrastructure sharing shall be determined in a transparent manner - details as to how charges for infrastructure sharing have been determined, shall be disclosed to the Office upon request.*
- b. Infrastructure Providers shall unbundle distinct facilities and corresponding charges sufficiently so that the Infrastructure Seeker pays only for the specific elements required.*
- c. Charges for the provision of infrastructure shall be structured in such a manner so as to distinguish and separately price for the following aspects:
 - i. The implementation of sharing including testing;*
 - ii. Rental charges for use of the infrastructure; and*
 - iii. Variable charges for ancillary and supplementary services.**
- d. Costs shall be borne either by the Infrastructure Seeker or the Infrastructure Provider or both, based on whether their respective requests and compliance therewith cause those costs to be incurred. However, the Infrastructure Provider shall not seek to recover from the Infrastructure Seeker the costs associated with providing existing technical*

information about the site, including the Infrastructure Provider's review of such requests and technical analysis.

- e. Infrastructure sharing charges shall be cost-based and shall be set to allow the Infrastructure Provider to recover a reasonable rate of return on its capital appropriately employed, all attributable operating expenditures, depreciation and a proportionate contribution towards the Infrastructure Provider's fixed and common costs. However, where the Infrastructure Provider and Infrastructure Seeker are providing each other with the same services the related infrastructure sharing charges can be reciprocal for the same service.*
- f. Infrastructure sharing charges shall not include compensation for loss of business as a result of providing infrastructure sharing services to the Infrastructure Seeker.*
- g. Infrastructure sharing charges should serve to promote the efficient use of assets and sustainable competition and maximize benefits for customers. The infrastructure sharing charge offered to the Infrastructure Seeker shall not be more than the cost of owning and operating similar infrastructure.*
- h. Infrastructure sharing charges must be impartial/non-discriminatory. This means that charges for infrastructure must be no less favourable than those the Infrastructure Provider offers its connected company or any other licensed operator.*
- i. The burden of proof that infrastructure sharing charges are based on costs shall lie with the Infrastructure Provider in all cases.*

7.2. In the setting of its charges an Infrastructure Provider shall utilize the fully distributed cost methodology, using current cost accounting and the annuities approach to depreciation.

7.3. Every Licensee shall develop a standard price list which shall provide guidance for determining the price for all sharing arrangements with other Infrastructure Seekers.

7.4. The standard price list shall be reasonable, non-discriminatory, and based on the costing methodology as mandated by the Office.

- 2.7. Section 29A(1)(c) of the Act outlines the OUR's powers to settle complaints and disputes in respect of, *inter alia*, charges for infrastructure sharing arrangements. Clauses 7.5 to 7.7 of the Draft Rules provide further details regarding this aspect, specifically:

7.5 Where the Office has been asked to intervene in a dispute regarding infrastructure sharing charges, the Infrastructure Provider shall, within ten (10) working days of a written request from the Office, supply the Office with such data as the Office may require, for the purpose of determining that the Infrastructure Provider's proposed charges are set in accordance with the principles set by the Office, unless the Office expressly extends this period in writing.

7.6. Where the Office has been unable to obtain cost information that it is reasonably satisfied is relevant and reliable from a Licensee it may take into account local and international benchmarks, reciprocity and other approaches that in the opinion of the Office is relevant to the setting of charges for infrastructure sharing.

7.7. The Office may in consultation with stakeholders, revise the costing methodology for infrastructure sharing.

- 2.8. The principles of cost orientation are stated in section 33 of the Act which are extracted follows:

"(1) Where the Office is required to determine the charges for the provision of interconnection by a dominant carrier, it shall, in making that determination, be guided by the following principles -

(a) costs shall be borne by the carrier whose activities cause those costs to be incurred;

- (b) non-recurring costs shall be recovered through non-recurring charges and recurring costs shall be recovered through recurring charges;*
- (c) costs that do not vary with usage shall be recovered through flat charges and costs that vary with usage shall be recovered through charges that are based on usage;*
- (d) costs shall include attributable operating expenditure and depreciation and an amount estimated to achieve a reasonable rate of return;*
- (e) where the Office has been unable to obtain cost information that it is reasonably satisfied is relevant and reliable it may take into account local and international benchmarks, reciprocity and any other approach that in the opinion of the Office is relevant."*

Chapter 3: Fixed Infrastructure Sharing Cost Model

Description of Consultation Documentation

3.1. The attached electronic files form part of the Consultation documentation. They contain the Draft Model and its supporting documentation. Included are the following:

- **Draft Fixed Infrastructure Sharing Cost Model** (file: Draft Fixed Infrastructure Sharing Model.xlsx): This file contains the Draft Model itself, its inputs and the different outputs (results). Please note that the inputs received from operators that have been directly inputted into the model have been anonymised (multiplied by a random factor of $\pm 30\%$), to preserve the potential confidentiality of the information. For this reason, the outputs/results of the model may not fully reflect the results included in Chapter 4.
- **Descriptive Manual for the Model** (file: Draft Fixed Infrastructure Sharing Model - Descriptive Manual.pdf): This document describes how the Draft Model works and the algorithms used for calculating the costs.
- **User Manual for the Model** (file: Draft Fixed Infrastructure Sharing Model - User Manual.pdf): This document describes in detail how to use and control the Draft Model.

Topics of Significant Relevance

- 3.2. The OUR welcomes all comments on the Draft Model, especially those that address the topics of significant relevance and have the highest expected impact on the outcome of the Draft Model. The OUR will dedicate special attention to comments on these topics of significant relevance.
- 3.3. The OUR would appreciate comments from operators and industry stakeholders especially on the following aspects of the Draft Model:
- Infrastructure sharing parameters considered in the Draft Model
 - Relationship between resources and services
 - Unit cost and useful lives
 - Inputs for the ancillary services
 - Results of the Draft Fixed Infrastructure Sharing Cost Model

These topics will be discussed in Chapter 4.

Chapter 4: Significant Aspects of the Draft Fixed Infrastructure Sharing Model

Infrastructure sharing parameters considered in the Draft Model

4.1. Infrastructure sharing parameters represent the inputs that are used in the Draft Model to characterize the network of the modelled operator and are used in the process of calculating the cost of the services. These parameters include, among others, the following inputs:

- Average ducts per trench
- Average distance between manholes
- Subducts that can be introduced in a duct
- Average cables in each occupied subduct
- Average strands per fibre cable
- Average cables supported by a wood pole
- Average cables supported by a concrete pole
- Average distance between poles
- Percentage of fibre cables (kilometres) that are directly buried (without ducts)
- Percentage of lit strands in a cable
- Percentage of ducts that are used
- Percentage of poles that are made out of concrete
- Percentage of fibre cables that are aerial

4.2. The parameters considered in the Draft Model are presented in worksheet “2A INP NW”. The information provided by operators in response to the data request was limited. Therefore, in accordance with Determination 3 of the Methodology, observations made from international best practice, deemed appropriate for the Jamaican reality, were utilised to compute some parameters found in the Draft Model.

Question 1: Do you agree with the parameters included in worksheet “2A INP NW” of the Fixed Infrastructure Sharing Cost Model? Please justify your position and provide supporting information and references.

Relationship between resources and services

- 4.3. To calculate the cost of the different infrastructure sharing services, a relationship was defined between the network assets included in the Draft Model (e.g. trenches, ducts, etc.) and the services. These relationships have been built with a set of “usage factors”, which represent how many times a network asset is used by a specific service.
- 4.4. The relationship between resources and services is included in worksheet “3A MAP USAGE FACTORS” of the Draft Model. The calculation of these usage factors is also explained in section 4, (“Association between resources and services”) of the Descriptive Manual for the Draft Model.
- 4.5. Please note that some of the inputs included in this worksheet, which have been reported by operators, have been anonymised (multiplied by a random factor of $\pm 30\%$), to preserve the potential confidentiality of the information.

Question 2: Do you agree with the relationships and usage factors defined between the different resources and the services included in the Fixed Infrastructure Sharing Cost Model? Please justify your position and provide supporting information and references.

Unit cost and useful lives

- 4.6. These inputs are used to calculate the annualised operational (OpEx) and capital (CapEx) expenses per asset and year. For each of the assets defined, the following parameters are included in the Draft Model:
- **Unit CapEx:** Represents the acquisition and installation costs of the network element.
 - **CapEx trend:** Represents the evolution of the asset price over the years.
 - **Useful live:** Represents the average technical duration (in years) of the asset.
 - **Unit OpEx:** Represents the annual cost of maintaining and operating the asset as a percentage of its unit CapEx. (It is included as a percentage of CapEx).

4.7. The assets' unit costs and associated information (including cost trends, OpEx percentages and useful lives) are included in the worksheet '1A INP UNIT COSTS' and in worksheet "2B INP RESOURCES LIFE" of the Draft Model for each of the network elements defined. Due to the limited data provided by the operators, a number of these inputs have been populated based on data observed from international best practice.

Question 3: Do you agree with the unit costs and useful lives considered in the Fixed Infrastructure Sharing Cost Model? Please justify your position and provide supporting information and references.

Inputs for the ancillary services

4.8. As indicated in the Methodology, the ancillary services included in the Fixed Infrastructure Sharing Cost Model, are the following:

- **Feasibility study:** Performance of new analysis of the infrastructure elements to identify whether those elements could be shared with an infrastructure seeker.
- **Service registration:** Administrative review of the request for the provision of a service.
- **Accompaniment:** Technician support during any task being undertaken by the infrastructure seeker (e.g. during the installation of the seeker's equipment within the shared infrastructure).

4.9. To calculate the cost of providing the ancillary services, the Draft Model includes three main inputs:

- **Staff wages:** Costs associated to the staff that undertake each of the activities related to the provision of these services (including technical and administrative staff).
- **Time to provide the service:** Volume of time necessary to carry out each of the activities.
- **Additional costs:** Additional costs associated with the provision of the service (e.g. materials).

4.10. These inputs are included in worksheets “1E INP OTHER SERV” and “2A INP NW” of the Draft Model.

Question 4: Do you agree with the inputs included in the Fixed Infrastructure Sharing Cost Model regarding the ancillary services? Please justify your position and provide supporting information and references.

Results of the Draft Fixed Infrastructure Sharing Cost Model

4.11. The model calculates the cost of providing fixed infrastructure services based on the different inputs and calculations included in the model and explained above.

4.12. Given that some inputs included in the model, which have been reported by operators, have been anonymised (multiplied by a random factor of $\pm 30\%$) to preserve the potential confidentiality of the information, the outputs/results of the model may not fully reflect those presented in the tables below.

4.13. The unit costs of the services are presented in worksheet “6A OUT SUMMARY RESULTS” of the Draft Model, and are summarised in the tables below.

Table 1: Draft unit costs obtained for infrastructure sharing rental services included in the Fixed Infrastructure Sharing Model

Rental services	Units	2018	2019	2020	2021	2022	2023	2024	2025
Duct Rental - Urban	'000 JMD/Km/year	310.7	318.2	325.8	334.2	342.9	351.7	360.9	370.5
Duct Rental – Inter-urban	'000 JMD/Km/year	239.6	245.4	251.3	257.8	264.6	271.4	278.5	286.0
Subduct Rental - Urban	'000 JMD/Km/year	147.1	150.8	154.6	158.8	163.2	167.7	172.3	177.2
Subduct Rental – Inter-urban	'000 JMD/Km/year	123.4	126.5	129.8	133.3	137.1	140.9	144.9	149.1
Pole Rental	'000 JMD/Pole/year	3.7	3.9	4.1	4.4	4.7	5.0	5.3	5.6
Dark Fibre Rental - Urban	'000 JMD/Km/year	5.6	5.5	5.4	5.3	5.3	5.2	5.1	5.1
Dark Fibre Rental – Inter-urban	'000 JMD/Km/year	11.5	11.3	11.2	11.0	10.9	10.7	10.6	10.5
Collocation in SCLS ¹	'000 JMD/m2/year	111.9	120.0	128.8	139.2	150.7	162.7	176.0	190.6

[Source: Draft Fixed Infrastructure Sharing Model]

Table 2: Draft unit costs obtained for the ancillary services included in the Fixed Infrastructure Sharing Model

Ancillary services	Units	2018	2019	2020	2021	2022	2023	2024	2025
Feasibility study	JMD/study	7.165	7.430	7.720	8.113	8.535	8.936	9.374	9.843
Service registration	JMD/event	284	295	306	322	338	354	372	390
Accompaniment	JMD/hour	3.188	3.306	3.434	3.610	3.797	3.976	4.171	4.379

[Source: Draft Fixed Infrastructure Sharing Model]

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? Please justify your position and provide supporting information and references.

¹ This unit cost shall be representative of all SCLS owned by the modelled operator. Disaggregation for the different SCLS has not been included in the Draft Model due to the lack of data.

Annex A: Summary of Questions

Question 1: Do you agree with the parameters included in worksheet “2A INP NW” of the Fixed Infrastructure Sharing Cost Model? Please justify your position and provide supporting information and references.

Question 2: Do you agree with the relationships and usage factors defined between the different resources and the services included in the Fixed Infrastructure Sharing Cost Model? Please justify your position and provide supporting information and references.

Question 3: Do you agree with the unit costs and useful lives considered in the Fixed Infrastructure Sharing Cost Model? Please justify your position and provide supporting information and references.

Question 4: Do you agree with the inputs included in the Fixed Infrastructure Sharing Cost Model regarding the ancillary services? Please justify your position and provide supporting information and references.

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? Please justify your position and provide supporting information and references.