



Radiofrequency and 5G Safety

Preliminary Report, Decision and Order

Matter: 20201023

Date: 8 February 2021

Responses Due: 8 March 2021

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I INTRODUCTION

1. The purpose of this Preliminary Report, Preliminary Decision and Order (the “Preliminary Report”) is for the Regulatory Authority of Bermuda (the “RA”) to:
 - a. Present its preliminary position on the results of the Radiofrequency and 5G Safety Consultation with respect to:
 - i. Extending, modifying or the removal of the “Regulatory Authority (Exposure to 5G Radiofrequency Electromagnetic Fields) Emergency General Determination 2020” (the “EGD”);
 - ii. Establishment of new guidelines for the deployment of antennae;
 - iii. Deployment of a publicly accessible national RF field intensity monitoring network (the “Monitoring Network”);
 - iv. Consideration of whether new fees should be levied on spectrum users, both providers and end-users, for the development and maintenance of the Monitoring Network.
 - b. Invite public comments on the Preliminary Report; and
 - c. Issue a General Determination (“GD”) at the end of the consultation process.
2. This Preliminary Report is structured as follows:
 - **Section I** provides the introduction and sets out the purposes of this Preliminary Report;
 - **Section II** outlines key definitions
 - **Section III** outlines the background and consultation procedure;
 - **Section IV** sets out the legislative context;
 - **Section V** summarizes the responses to the Consultation Document;
 - **Section VI** Advisory Panel Report & Recommendations
 - **Section VII** sets out the conclusion and proposed decision;
 - **Section VIII** provides the next steps;
 - **Appendix A** sets out the Preliminary Order;
 - **Appendix B** sets out the Preliminary General Determination;
 - **Appendix C** sets out the Advisory Panel Final Report and Recommendations;

II DEFINITIONS

“Authority” means the Regulatory Authority of Bermuda established under the Regulatory Authority Act 2011;

“Broadband” means an Internet service or connection generally defined as being “always on”, providing a bandwidth greater than narrowband;

“Consultation Document” means the Consultation Document entitled “Radiofrequency 5G Safety”

“Communications operating licence (“COL”) means an individual or class licence granted for the provision of some or all regulated electronic communications services;

“Communications provider” means an entity that constitutes a sectoral provider pursuant to the Regulatory Authority Act 2011, and provides electronic communications;

“ECA” means the Electronic Communications Act 2011;

“EGD” means the Regulatory Authority (Exposure to 5G Radiofrequency Electromagnetic Fields) Emergency General Determination 2020;

“Electronic communications” means electronic communications networks or electronic communications services, or both, as the context requires;

“End-user” means a person that uses goods or services provided by a communications provider on a retail basis;

“Electronic Communications Network” means as defined in section 2(1) of the ECA;

“Electronic Communications Service” means as defined in section 2(1) of the ECA;

“Integrated Communications Operating Licence (ICOL)” means a licence granting the licensee the right to establish, construct and operate one or more electronic communications networks and to provide electronic communications services, on an integrated basis, within the territorial limits of Bermuda and between Bermuda and other countries;

“Internet” means the global information system that is able to support communications using the Transmission Control Protocol/Internet Protocol (TCP/IP) suite or its subsequent extensions or follow-ups and other IP-compatible protocols;

“Minister” means the Minister responsible for telecommunications;

“RA” means the Regulatory Authority of Bermuda established under the Regulatory Authority Act 2011;

“RAA” means the Regulatory Authority Act 2011;

“Radiofrequency” means an electromagnetic wave frequency or band of frequencies in the range of 3kHz to 300GHz suitable for the use of telecommunications;

“User” means any person using an electronic communications service, for residential or business purposes, whether or not the person has subscribed to such service;

For purposes of interpreting this Preliminary Report:

- (a) unless the context otherwise requires, words or expressions shall have the meaning assigned to them by the RAA and the ECA;
- (b) where there is any conflict between the provisions of this Preliminary Report and the ECA or RAA, the provisions of the ECA or RAA, as the case may be, shall prevail;
- (c) terms defined herein and in the ECA and RAA have been capitalised;
- (d) headings and titles used herein are for reference only and shall not affect the interpretation or construction of the GD;
- (e) references to any law or statutory instrument include any modification, re-enactment or legislative provisions substituted for the same;
- (f) a document referred to herein shall be incorporated into and form part of the GD and a reference to such document is to the document as modified from time to time;
- (g) expressions cognate with those used herein shall be construed accordingly;
- (h) use of the word "include" or "including" is to be construed as being without limitation; and
- (i) words importing the singular shall include the plural and vice versa, and words importing the whole shall be treated as including a reference to any part unless explicitly limited.

III BACKGROUND AND CONSULTATION PROCEDURE

III.A. BACKGROUND

3. The RA began the public consultation on Radiofrequency and 5G Safety on 23 October 2020. The purposes of the RA's consultation were to:
 - a. Consult on whether the temporary moratorium imposed by the EGD should be retained, modified or removed;
 - b. Consult on the concerns expressed by members of the public during the ICOL/COL licensing process in 2019/20 regarding:
 - i. General concerns about alleged health impacts from the use of Radiofrequency ("RF") devices and antennae;
 - ii. Particular concerns about alleged health impacts from the use of small cell technologies;
 - iii. Particular concerns about the use of millimeter wave spectrum (30-300 GHz) ("mmWave");
 - iv. General concerns regarding 5G Safety in Bermuda;
 - c. Solicit evidence for Radiofrequency 5G related human-health issues; and
 - d. Solicit input on appropriate RF exposure limits.
4. The public consultation asked the following questions:
 - a. Do you agree that the Federal Communications Commission, which regulates interstate and international communications by radio, television, wire, satellite and cable within the United States, RF Exposure standards are appropriate for Bermuda? If not, what is a suitable alternative and why?
 - b. Do you agree that all antennae used by licensed sectoral providers should be registered with the RA? If not, what, if anything, should be registered with the RA e.g. location, direction (if applicable) and power level?
 - c. Do you agree that the Moratorium established by the EGD should be removed? If not, should it be modified and how should it be modified and why?
 - d. Do you agree that a real-time, publicly accessible Radiofrequency field intensity monitoring network should be deployed and a dedicated fee be levied on relevant sectoral providers and end-users that use Radiofrequency spectrum to cover the cost of the deployment and ongoing maintenance?
 - e. Should mmWave networks and small-cell technologies be restricted or prohibited in Bermuda? If so, why and what alternatives should be used?

5. In accordance with Section 35 of the RAA, the RA Board of Commissioners appointed a special independent Advisory Panel to assist the RA with respect to the consultation. This panel included the following members:
 - Mr. Glenn Blakeney – Bermuda
 - Dr. Rodney Croft – Australia
 - Dr. Jeffrey Herd – United States of America
 - Dr. Raafat Mansour – Canada
 - Dr. Carika Weldon – Bermuda¹
6. The public consultation was originally due to be concluded on 23 November 2020. On 5 November 2020, the RA extended the response deadline to 7 December 2020.
7. The RA facilitated a public Online Information Gathering Session on the use of Radiofrequency and 5G technology on November 19, 2020. This public hearing allowed members of the public who had submitted written comments in advance to present their views and evidence to the public, the Advisory Panel, and the RA.
8. The Advisory Panel presented its Final Report to the RA on 2nd February 2021. This report is copied in its entirety in Appendix C to this document.

III.B . CONSULTATION PROCEDURE

9. This invitation to provide responses to the Preliminary Report is being undertaken in accordance with sections 4, 5, 7, 9, 48, 49, 50 and 69 to 73 of the Regulatory Authority Act 2011 ("RAA") and section 5, 9, 35, 36 and 38 of the Electronic Communications Act 2011 ("ECA"). The procedure and accompanying timelines (as set out in section 72 of the RAA), under which this consultation is taking place, are outlined below.
10. Written responses should be submitted before 11:59 PM (Bermuda time) on 8 March 2021.
11. The RA invites comments from members of the public, electronic communications sectoral participants and electronic communications sectoral providers, and other interested parties.
12. Responses to this Consultation Document should be filed electronically in MS Word or Adobe Acrobat format. Parties wishing to file comments should go to the RA's website www.ra.bm and follow this link:
13. Sectors page for Public Consultations: <https://www.ra.bm/public-consultations/>

¹ Dr. Carika Weldon unfortunately had to withdraw from the Advisory Panel in early December 2020 due to the increase in COVID-19 cases in Bermuda.

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RA
REGULATORY AUTHORITY

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Submit a Response Form
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Submit Your Response

We welcome your input on any of our Public Consultations.

First Name* Last Name*

Your Email* Company Name (if applicable):

Open Consultation Case*
Please select one from the dropdown list below:
New Plan 2020-21

Submit details of your response

Please upload any relevant files:
To add multiple files, please upload all at once.
(over 10MB, up to 4MB)

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14. All comments should be clearly marked "Radiofrequency 5G Safety – Preliminary Report" and should otherwise comply with Rules 18 and 30 of the RA's Interim Administrative Rules, which are posted on the RA's website.
15. The RA intends to make responses to this Preliminary Report available on its website. If a commenting party's response contains any information that is confidential in nature, a clearly marked "Non-Confidential Version", redacted to delete the confidential information, should be provided together with a complete version that is clearly marked as the "Confidential Version". Redactions should be strictly limited to "confidential information", meaning a trade secret, information whose commercial value would be diminished or destroyed by public disclosure, information whose disclosure would have an adverse effect on the commercial interests of the commenting party, or information that is legally subject to confidential treatment. The "Confidential Version" should highlight the information that has been redacted. Any person claiming confidentiality in respect of the information submitted must provide a full justification for the claim. Requests for confidentiality will be treated in the manner provided for in Rule 30 of the RA's Interim Administrative Rules.
16. In accordance with section 73 of the RAA, any interested person may make an ex parte communication during this consultation process.
17. An ex parte communication is defined as any communication to a Commissioner or member of staff of the RA regarding the matter being consulted on in this Consultation Document, other than a written submission made pursuant to section 73(2) of the RAA. Within two (2) business days after making an ex parte communication, the person who made the ex parte communication shall submit the following to the RA: (i) a written description of the issues discussed and positions espoused; and (ii) a copy of any written materials provided. This will be posted on the RA's website, along with a notice of the ex parte communication.

18. The principal point of contact at the Authority for interested persons for this Consultation Document is Craig Davis. He may be contacted by email, referencing "Radiofrequency 5G Safety – Preliminary Report" at consultation@rab.bm or by mail at:

Craig Davis
Matter: 20201023 – Radiofrequency 5G Safety
Regulatory Authority
1st Floor, Craig Appin House
8 Wesley Street
Hamilton, Bermuda

19. In this Preliminary Report, except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them by the ECA, the RAA and the Interpretation Act 1951.
20. This Preliminary Report is not a legally binding document and does not contain legal, commercial, financial, technical or other advice. The RA is not bound by this Preliminary Report, nor does it necessarily set out the RA's final or definitive position on particular matters. To the extent that there might be any inconsistency between the contents of this Preliminary Report and the due exercise by the RA of its functions and powers, and the carrying out of its duties and the achievement of relevant objectives under law, such contents are without prejudice to the legal position of the RA.
21. The RA intends to issue a Final Report, Decision and Order (the "Final Report") on this matter by 18 March 2021, in which the RA will decide whether to extend, modify or remove the temporary Moratorium on 5G, including, if necessary, the development of an associated General Determination to establish any additional parameters that may be warranted.

IV. LEGISLATIVE CONTEXT

22. Section 12 of the RAA states that, the principal functions of the Authority, in relation to any regulated industry sector, are—

- a. to promote and preserve competition;
- b. to promote the interests of the residents and consumers of Bermuda;
- c. to promote the development of the Bermudian economy, Bermudian employment and Bermudian ownership;
- d. to promote innovation; and
- e. to fulfil any additional functions specified by sectoral legislation.

23. Section 13 of the RAA states that the RA may:

- (e) make administrative determinations, adjudicative decisions and rules;
- (f) provide advisory guidance to sectoral participants;
- (g) establish external advisory panels and take appropriate actions to foster industry self-regulation and co-regulation;
- (j) grant, modify and revoke authorizations;
- (n) establish technical standards for the provision of covered services;
- (p) establish and enforce quality of service standards applicable to covered services;
- (w) conduct public consultations and adjudications;
- (z) take any other action, not expressly prohibited by law, that is necessary and proper to perform its duties under this Act and sectoral legislation.

24. Section 15 of the RAA sets the scope of the RA's Authority as:

- (1) The Authority shall have the power to supervise, monitor and regulate any regulated industry sector, in accordance with this Act, sectoral legislation and any regulations or policies made by a Minister.
- (2) The Authority, when acting within the scope of its authority, may make administrative determinations that are binding on sectoral participants, including general determinations to implement this Act, sectoral legislation and regulations and policies made by a Minister.

- (3) The Authority, following an adjudication, shall have the power to issue an adjudicative decision as to whether a specific person satisfies the criteria specified in sectoral legislation and, therefore, is a sectoral participant.
- (4) The Authority, when acting pursuant to sections 85 and 86, may make adjudicative decisions and orders that are binding on persons that are not sectoral participants, if the Authority determines that an action taken by any such person unreasonably restricts, or is likely to unreasonably restrict, competition in a regulated industry sector.

25. Section 35 of the RAA establishes that:

- (1) The Authority may appoint advisory panels, consisting of knowledgeable persons from outside the Authority, to provide information and recommendations regarding any matter within the competence of the Authority.
- (2) In any case in which the Authority appoints an advisory panel, the Authority shall publish on its official website a statement setting out—
 - a. the purpose for which the panel has been established;
 - b. the membership of the panel, including a brief statement setting out the current employment or other significant information regarding each member;
 - c. any financial, staffing or other resources that the Authority will provide to the panel;
 - d. any procedures to be used, or deliverables to be provided, by the panel; and
 - e. the duration of time in which the panel will remain in existence.
- (3) In considering candidates for appointments to any advisory panel, the Authority shall give due regard to—
 - a. the qualifications and experience of the candidates; and
 - b. the need to ensure representation of diverse views.
- (4) Each advisory panel shall provide a report to the Authority regarding its work, at such times as the Authority may specify, which the Authority shall publish on its official website.

26. Section 51 of the RAA establishes that:

- (1) The Authority, when authorized by sectoral legislation, on its own motion or at the request of an authorization holder, may modify or vary any term or condition of a licence, permit or other authorization if the Authority concludes that such modification or variation is necessary in the public interest.

- (2) Before taking any action pursuant to subsection (1), the Authority shall give the authorization holder reasonable notice and an opportunity to comment, and shall take into account any representations made by or on behalf of the authorization holder.
- (3) The Authority may issue a decision and order suspending or revoking any licence, permit or other authorization where the authorization holder has—
 - a. made false statements of material facts, committed fraud or made a misrepresentation in the application for the licence, permit or other authorization or in any subsequent statement to the Authority;
 - b. failed to comply with—
 - (i) any applicable requirements contained in this Act or in sectoral legislation;
 - (ii) any regulations made by a Minister or any administrative determination made by the Authority; or
 - (iii) the terms or conditions of the licence, permit or other authorization; or
 - c. failed to pay to the Authority any authorization fees, regulatory fees or any other required payment.
- (4) The Authority may suspend or revoke any licence, permit or other authorization in—
 - a. any other circumstances provided for in sectoral legislation; or
 - b. any case in which the authorization holder has breached a condition in the authorization.
- (5) Before the Authority issues a decision and order suspending or revoking a licence, permit or other authorization, the Authority shall provide written notice to the authorization holder.
- (6) The notice specified in subsection (5) shall include—
 - a. the action that the Authority proposes to take;
 - b. the basis on which the Authority proposes to take the action;
 - c. the time frame within which the authorization holder may submit written comments regarding the proposed action; and
 - d. the actions that the authorization holder must take to avoid suspension or revocation, and the time frame in which such actions must be taken.
- (7) The Authority shall specify the date on which any revocation shall occur, which shall be at least ten days after the effective date of the decision and order.

27. Section 61 of the RAA states that:

- (1) Except where this Act or sectoral legislation expressly requires the use of a specific administrative procedure, the Authority may choose whether to conduct either—
 - a. a public consultation; or
 - b. an adjudication.
- (2) The Authority shall make rules, consistent with the provisions of this Act, setting out the procedures applicable to public consultations and adjudications.
- (3) In making administrative determinations in accordance with this Act, the Authority shall base its conclusions on the best evidence that is reasonably available.
- (4) The Authority shall have the power to access, review and rely on all relevant information in the possession of a Minister or any regulatory body previously authorized by law to supervise, monitor or regulate a regulated industry sector.
- (5) In the absence of sufficient evidence that is specific to Bermuda, the Authority may consider and rely on international best practices, benchmarks and data from countries that the Authority concludes are relevant to Bermuda.

28. Section 66 of the RAA establishes the establishes RA's interim and emergency determination making powers as set out:

- (1) The Authority may make a general determination on an interim basis, pending the completion of the public consultation, provided that the Authority—
 - a. issues a statement explaining the basis on which it has issued the general determination on an interim basis; and
 - b. files the interim general determination with the Cabinet Secretary for publication in the Gazette, at which point it will become effective.
- (2) The Authority may make a general determination on an emergency basis without complying with the public consultation procedures specified in this Act whenever the Authority concludes that the urgency of a particular case requires that it do so.
- (3) The Authority shall promptly publish on its official website any general determination made pursuant to subsection (2).
- (4) Any general determination made pursuant to subsection (2) shall be effective, as applied to a specific sectoral participant, at the earlier of the date on which—
 - a. the sectoral participant has actual notice of the general determination; or

- b. the general determination is published in two newspapers of general circulation in Bermuda, one of which shall be the Gazette.
- (5) In any case in which the Authority makes a general determination pursuant to subsection (2), the Authority shall—
 - a. file the emergency general determination with the Cabinet Secretary for publication in the Gazette as promptly as possible; and
 - b. within 14 days after the day on which the Authority makes the emergency general determination, or any longer period approved by the Minister responsible for the regulated industry sector, commence a public consultation.
- (6) Any general determination adopted on an interim or emergency basis pursuant to this section shall remain in effect for no more than six months, unless the Authority, with the approval of the Minister, causes a notice to be published in the Gazette extending the effective period for up to an additional six months.
- (6A) For the avoidance of doubt, a Schedule to a general determination is not required to be included in a publication pursuant to this section, whether in the Gazette or in a newspaper, if—
 - a. the Schedule is published on the Authority's official website;
 - b. the Schedule is available for inspection at the offices of the Authority; and
 - c. the general determination gives notice that the Schedule—
 - i. is published on the Authority's official website; and
 - ii. is available for inspection at the offices of the Authority.
- (7) Any general determination under this section shall not be subject to section 6 of the Statutory Instruments Act 1977.

29. Section 5(1) of the ECA sets out the purposes of the Act. These include:

- (a) ensuring that the people of Bermuda are provided with reliable and affordable access to quality communications services;
- (b) enhancing Bermuda's competitiveness in the electronic communications sector so that Bermuda is well-positioned to compete in the international business and global tourism markets;
- (c) encouraging the development of an electronic communications sector that is responsive to the requirements of users (both individuals and businesses) and provides them with choice, innovation, efficiency and affordability;
- (d) encouraging the development of and rapid migration of innovative electronic communications technologies in the electronic communications sector;
- (e) promoting the orderly development of Bermuda's electronic communications sector;

- (f) encouraging sustainable competition and create an invigorated electronic communications sector that will lay the groundwork for the further development of communications-reliant industries;
- (g) encouraging the development and maintenance of resilient and fault-tolerant communications infrastructures;
- (h) promote investment in the electronic communications sector and in communications-reliant industries, thereby stimulating the economy and employment; and
- (i) promoting Bermudian ownership and Bermudian employment at all levels of the electronic communications sector.

V. SUMMARY OF RESPONSES TO CONSULTATION

30. The Consultation Document invited the public to submit responses commenting on the:

- a. “Regulatory Authority (Exposure to 5G Radiofrequency Electromagnetic Fields) Emergency General Determination 2020”;
- b. Concerns expressed by members of the public during the ICOL/COL licensing process in 2019/20 regarding:
 - i. General concerns about alleged health impacts from the use of RF devices and antennae;
 - ii. Particular concerns about alleged health impacts from the use of small cell technologies;
 - iii. Particular concerns about the use of mmWave;
 - iv. General concerns regarding 5G Safety in Bermuda; and

31. The RA held a virtual information gathering session via Zoom on 16 November 2020 where various groups were invited to present materials and generally explain their position(s) with regard to this consultation. Entities that took the opportunity to present included:

- a. Bermuda Advocates for Safe Technology (“BAST”);
- b. Greenrock;
- c. Environmental Health Trust (“EHT”);
- d. Canadians for Safe Technology (“C4ST”); and
- e. Oceania Radiofrequency Scientific Advisory Association.

The presentations from this information gathering session have been published on the RA website. <https://www.ra.bm/radiofrequency-and-5g-safety/>

32. All responses were reviewed by the Advisory Panel and are summarized in Appendix C to this document.

33. All responses will also be posted on the RA website.

VI. ADVISORY PANEL REPORT & RECOMMENDATIONS

34. The Advisory Panel Final Report & Recommendations are attached in full in Appendix C to this document.
35. The Recommendations are summarized below for ease of reference:
 - a. Lift the Moratorium on 5G rollout;
 - b. Establish a Communications and Interactive Consultation Program;
 - c. Establish an Exposure Verification Program inclusive of Pre and Post-Commissioning Exposure Verification; and
 - d. Initiate a Periodic Independent Review Process of Health Effects of RF Radiation.

VII. CONCLUSION & PROPOSED DECISION

36. The RA proposes to lift the Moratorium as established by the EGD, by Order (the “Order”), effective on the date of the publication of the Order.

37. The RA further proposes the following additional elements in the Order:

- a. Establish a Communications and Interactive Consultation Program;
- b. Establish an Exposure Verification Program inclusive of Pre and Post-Commissioning Exposure Verification; and
- c. Initiate a Periodic Independent Review Process of Health Effects of RF Radiation.

VIII. NEXT STEPS

38. Following the deadline for responses to this Preliminary Report, the RA will review and consider any responses received and issue a draft Final Report, and Decision and Order to the BOC. The BOC will review the draft Final Report, and Decision and Order and issue a Final Report and Decision and Order, which may accept, modify or reject the Further Recommendation.

39. The following is an indicative timeline:

- BOC approved the Preliminary Report, Decision and Order on 5 February 2021;
- Response period on Preliminary Report, Decision and Order will open on 8 February 2021 and close at 11:59 PM on 8 March 2021;
- BOC to issue the Final Report, Decision and Order on 18 March 2021.

APPENDIX A: PRELIMINARY ORDER



Radiofrequency and 5G Safety

Preliminary Order

REGULATORY AUTHORITY (REMOVAL OF MORATORIUM; EXPOSURE TO
5G RADIOFREQUENCY ELECTROMAGNETIC FIELDS) GENERAL
DETERMINATION 2021

General Determination 2021

- 1 The Regulatory Authority, pursuant to sections 4, 5, 7, 9, 12, 13 and 62 of the Regulatory Authority Act 2011 and sections 9, 10, 13, 14, 16, 17 and 18 of the Electronic Communications Act 2011, hereby:

- (a) Adopts the General Determination attached hereto;
- (b) Directs the Chief Executive of the Regulatory Authority to forward the General Determination to the Cabinet Secretary; and
- (c) Authorises the General Determination to be effected on the date of its publication in the Official Gazette.

- 2 So Ordered this __ day of [month] 2021.

APPENDIX B: PRELIMINARY GENERAL DETERMINATION

**REGULATORY AUTHORITY (REMOVAL OF MORATORIUM; EXPOSURE TO 5G RADIOFREQUENCY
ELECTROMAGNETIC FIELDS) GENERAL DETERMINATION 2021**

BR /2021

WHEREAS on 23 October 2020, the Regulatory Authority commenced a consultation on Radiofrequency and 5G Safety, and on [date of final order], issued a Final Decision and Order in that consultation pursuant to which this General Determination is made:

The Regulatory Authority, in the exercise of the power conferred by section 62 of the Regulatory Authority Act 2011 and section 42(3) of the Electronic Communications Act 2011, makes the following General Determination:

Citation

1. This General Determination may be cited as the Regulatory Authority (Removal of Moratorium; Exposure to 5G Radiofrequency Electromagnetic Fields) General Determination 2021.

Interpretation

2. In this General Determination, unless the context otherwise requires—

“5G Network” means a wireless radio network operating in accordance with the applicable standards established by 3rd Generation Partnership Project using 5G radio access technology;

“5 GHz Wireless Access Point” means a networking hardware device operating in the 5 GHz wireless frequencies that is used for the provision of Wi-Fi services;

“Appropriate Safety Standards” mean the safety standards with respect to human exposure to radio frequency electromagnetic fields published by either –

(a) the Institute of Electrical and Electronic Engineers (IEEE), or

(b) the International Commission on Non-Ionizing Radiation Protection (ICNIRP).

“Radio Access Point” means a transceiver or “base station” used to provide wireless access to a cellular or mobile communications network; and

“Small Cell” means a low-powered, Radio Access Point used to densify a wireless network, and may include femtocells, picocells, and microcells.

Application

3. (1) This General Determination applies to the electronic communications sector and is binding on all sectoral providers.

(2) Radio Access Point in a 5G Network may only be deployed and operated in such a manner that radiofrequency exposure complies with levels set in the Appropriate Safety Standards.

(3) For the avoidance of doubt, this General Determination does not affect the deployment or operation of 5 GHz Access Points otherwise permitted.

(4) This does not obviate the need to obtain a spectrum licence in accordance with Section 38 (1) of the ECA.

Pre-Commissioning Exposure Verification

4. (1) This section applies where a sectoral provider wishes to commission a new wireless base station network or make any changes to the RF power output of any site base station antenna.

(2) A sectoral provider must first perform a comprehensive analysis for each base station to provide an objective estimate of the maximum levels of electromagnetic radiation from a wireless base station or Small Cell.

(3) The requirements for this analysis may be found in advisory guidelines issued for that purpose by the RA from time to time.

Post-Commissioning Exposure Verification

5. (1) This section applies where a sectoral provider deploys and operates a wireless base station network.

(2) The RA may require the performance of regular or periodic surveys of a specific site in order to measure radiofrequency radiation levels.

(3) The RA may—
 - (a) direct that the sectoral provider in question to perform the regular or periodic survey mentioned in subsection (2); or
 - (b) perform or facilitate such a survey itself.
(4) The RA may permit a sectoral provider to use autonomous or remote technology for the monitoring of radiofrequency radiation levels.

Supply and publication of information

6. (1) The results of any analysis mentioned in section 4 must be provided to the RA as part of any

application process.

(2) The results of any survey mentioned in section 5 must be supplied to the RA within seven days of completion.

(3) The RA may publish any information supplied in accordance with this section on its website (www.ra.bm).

Revocation of 2020 Emergency General Determination

7. The Regulatory Authority (Exposure to 5G Radiofrequency Electromagnetic Fields) Emergency General Determination 2020 is revoked.

APPENDIX C: ADVISORY PANEL FINAL REPORT & RECOMMENDATIONS

BERMUDA
REGULATORY AUTHORITY
RADIOFREQUENCY AND 5G SAFETY ADVISORY PANEL REPORT

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1. Introduction

A Radiofrequency and 5G Safety Advisory Panel (hereafter “Advisory Panel”) was constituted on October 27, 2020, at a meeting of the Regulatory Authority (hereafter “RA”) Board of Commissioners, in accordance with Section 35 of the Regulatory Authority Act 2011. The purpose of the Advisory Panel is to provide a range of perspectives and expertise, in the area of Radiofrequency wireless technology, and particularly for Fifth Generation (“5G”) technologies. The Panel’s role is to offer independent advice and insight into policy direction emerging from reviewing information and public consultations. The Advisory Panel, which does not have decision-making authority, is providing this final report to the Board of Commissioners regarding its work and subsequent recommendations.

The Advisory Panel member’s roles and responsibilities include the following tasks:

- To undertake a review of current global practices, approaches, and public policies, without prejudice, regarding the general use of radiofrequency and Fifth Generation (“5G”) wireless technology, as defined by the 3rd Generation Partnership Project (“3GPP”);
- To address questions and concerns from local members of the Bermuda public and special interest groups;
- To engage in a factual discussion regarding the technology with internal and external stakeholders;
- To participate in Advisory Panel meetings;
- To be available and prepared to attend public consultation activities related to the Advisory Panel’s purpose as necessary;
- To provide a recommendation to the RA’s Board of Commissioners on whether to remove or retain the current moratorium on the deployment of 5G in Bermuda; and
- To provide a recommendation to the RA’s Board of Commissioners on the best way forward for Bermuda regarding Fifth Generation technology and possible solutions to address major concerns raised by the public.

2. Structure of the Report

This report summarizes the information gathered by the Advisory Panel throughout the review process, and provides a set of recommendations to the RA’s Board of Commissioners based on those findings. The structure of the report is as follows: The Background section describes 5G and the capabilities it is expected to enable, summarizes the relevant international standards regarding the appropriate RF-EMF exposure limits to be adhered to, discusses the protection of public health by compliance with the international standards, and provides a current and projected status of 5G rollouts in the international community. The Evaluation of Public Consultations section provides a summary of the primary concerns expressed by the presenters and submitted documents in the public consultation process, and outlines the evaluation and response of the Advisory Panel to each of the primary concerns. The Advisory Panel Recommendations section outlines a set of recommendations by the Panel to the RA’s Board of Commissioners with respect to lifting the 5G moratorium, the establishment of a public communications and consultation program, the implementation of an RF-EMF exposure verification effort, and initiation of a periodic independent review process of health effects of RF-EMF exposure.

3. Background

a. What is 5G?

‘5G’ (or 5th Generation) is the name given to the latest mobile telecommunications standard, which will replace the current 4G standard. 5G technology is expected to provide lower latency, higher channel capacity, and larger data rates. The low latency times of 5G will play an important role, especially for time-critical applications such as autonomous driving and connected health services. Medical technologies will be able to monitor patients in real time, and notify medical practitioners and first-responders as soon as a medical device detects a critical issue. Other areas expected to be enhanced by the 5G rollout are manufacturing, on-line learning, and the energy sector. As traditional manufacturing machines become ‘smart’ through the addition of sensors, 5G will provide the backbone that enables data communication between these machines and remote analytic systems. In educational settings, 5G will provide increased accessibility for remote learning, and the faster data rates and lower latencies can be used to offer the most effective learning experience for a wide range of students. In the energy sector, distributed energy generation systems such as solar panels and wind turbines continue to grow in use. With the high levels of rapid and reliable connectivity offered by 5G, the energy grid can be balanced to match power supply and demand.

Similar to previous generations of mobile telecommunications (e.g. 4G), 5G utilizes radiofrequency electromagnetic fields (RF-EMFs) as a means of sending and receiving information, such as from one mobile phone to another. People are often exposed to a portion of these RF-EMFs, and it is this exposure that has led some to be concerned about whether 5G might lead to adverse health effects. In addressing the issue of 5G and health, it is thus crucial to consider the scientific literature pertaining to RF-EMF exposure and health.

b. Summary of International Standards relevant to 5G

International Standards bodies provide guidance on the relative safety of exposure to RF-EMF. These provide evaluation of the science, and set recommendations for exposures that will, if not exceeded, provide protection from such exposure.

There are two international Standards on human protection from electromagnetic fields that are relevant to the RF-EMF emitted by 5G technologies:

- IEEE- C95 or IEEE International Committee on Electromagnetic Safety (ICES); and
- The International Commission on Non- Ionizing Radiation Protection (ICNIRP).

Both standards are based on scientific evidence, and aim at protecting against all known adverse effects that have been demonstrated by science. They are advisory documents that have been adopted by most nations and are recognized by the World Health Organization (WHO). Although there are differences between how the two organisations function, in terms of safety relevant to 5G technologies, exposure restrictions are essentially the same. Importantly, both provide protection against all known adverse health effects of RF-EMF. Below is a brief description of the structure and development history of the two standards:

IEEE-C95 or IEEE International Committee on Electromagnetic Safety (ICES)

The Institute of Electrical and Electronic Engineers (IEEE) C-95 standard was first charted in 1960. It aims to have standards for safety levels with respect to Human Exposure to Radio Frequency electromagnetic fields (3 KHz- 300 GHz) [1]. The IEEE C-95 committee currently consists of 132 members, with 42% from outside US. 27% are from Academia, 17% from Industry, 34% from Government, 20% are consultants, and 2% are from the general public. The

2005 IEEE C95-version was approved by 91.3 % of voting members. The IEEE C95 Standard was updated and published in 2019, following review of all relevant literature, including those relating to adverse health effects, and both thermal and non-thermal effects.

International Commission on Non-Ionizing Radiation Protection (ICNIRP)

ICNIRP is a not-for-profit organization, and is entirely independent from industry. Originally a committee within the International Radiation Protection Association (IRPA), it was chartered in 1992 as an independent commission to continue the committee's work. The goal of ICNIRP is to protect people and the environment against adverse effects of non-ionizing radiation (NIR), which includes the radiation relevant to 5G technologies, through the development and dissemination of science-based advice on limiting exposure to non-ionizing radiation. Experts from different countries and disciplines such as biology, epidemiology, medicine, physics, and chemistry, work together within ICNIRP and with external experts to assess the risk of NIR exposure and provide exposure guidance. The guidelines relevant to 5G technologies were most recently updated in May 2020 [2].

Summary of conclusions of international Standards bodies

IEEE ICES and ICNIRP provide equivalent restriction values to protect against adverse health effects, and protect against exposures from instantaneous to ongoing (24/7), from localized to whole-body exposures, and for all people (ranging from babies and pregnant women to the elderly, and from the healthy to the infirm). Adverse health effects have not been verified for RF exposures that comply with these restriction values.

5G, Radiofrequency Electromagnetic Fields (RF-EMFs) and health

The RF-EMF levels emitted from 5G antennas are similar to that from previous generations of mobile telecommunications, such as 3G and 4G. 5G will use higher frequencies of RF-EMFs than previous generations. This use of high frequencies in 5G networks is accounted for in the international Standards, which specify restriction levels as a function of RF-EMF frequency. 5G has been designed to be compliant with the international Standards, and measurement studies to date have shown that the exposure from 5G is similar to that from 3G and 4G, which is >100 times lower than the international Standards' restrictions [3].

It follows that, provided that RF-EMF exposure from 5G is of the magnitude found in recent measurement studies, and thus does not exceed the IEEE or ICNIRP restrictions, it will not cause harm to people.

The Advisory Panel notes that the international Standards do not directly specify that their restrictions are applicable for the protection of flora and fauna. However, those Standards do consider research addressing adverse health effects across a range of non-human species and did not find evidence for harm within the restrictions. Further, a recent workshop addressing the research on flora and fauna, was convened by the BfS, Germany's radiation protection body, where it concluded that "So far, no harmful effects on animals and plants that are triggered by artificial electrical, magnetic and electromagnetic fields have been proven" [4]. Accordingly, adherence to the international Standards can also be considered to provide protection against adverse health effects to flora and fauna.

c. Status of 5G rollouts in the international community

Consistent with the view that 5G will provide substantive benefit to society without adversely affecting health, it is being widely implemented across the globe. As of January 2020, commercial 5G networks have been deployed in 378 cities across 34 countries [5]. South Korea had deployed 5G in 85 cities, followed by China with 57, the United States at 50, and the U.K. with 31 cities. In terms of regional coverage, Europe, the Middle East and Africa have the largest

number of rollouts, with 168 cities where 5G networks have been deployed, Asia has operational 5G networks in 156 cities. By 2025, 5G networks are expected to cover one-third of the world's population.

4. Evaluation of Public Consultation Concerns

One of the roles and responsibilities of the Advisory Panel is to address questions and concerns from local members of the Bermuda public and special interest groups. The Advisory Panel attended the Online Information Gathering Session on 19 November 2020, and has reviewed the submitted documents that are officially archived by the RA as part of the process. Although the main concerns were related to health, other issues were also raised. A brief description and evaluation of the primary concerns are provided below.

a. Does exposure to RF from 5G technologies cause harm to humans?

What is being claimed: 5G will harm people in a range of different ways, (e.g. cancer, infertility, etc.).

Advisory Panel evaluation: Based on the information provided in the Introduction of this report and the conclusions of international standards and the substantial body of science underpinning them, there is no evidence of harm from 5G when exposure does not exceed the standards. It is concluded by the Advisory Panel that the radiation safety science does not support the view that 5G will be harmful to people.

b. Does exposure to RF from 5G technologies harm the environment?

What is being claimed: 5G will harm particular species of flora and fauna.

Advisory Panel evaluation: Based on the information provided in the Introduction of this report and the conclusions of international standards and the substantial body of science underpinning them, there is no evidence of harm to flora and fauna from 5G when exposure does not exceed the standards.

It is concluded by the Advisory Panel that the radiation safety science does not support the view that 5G will be harmful to flora or fauna.

c. Will 5G be of benefit to Bermuda?

What is being claimed: 5G will not bring any benefits to the Bermuda community, including claims that any benefits of 5G can be attained through the use of non-wireless technologies.

Advisory Panel evaluation: Although it is expected [see Background section] that 5G will bring substantial benefits to society, the Advisory Panel is not in a position to evaluate these claims in terms of the Bermuda community.

The Advisory Panel does not comment on the degree to which 5G would bring benefits to the Bermuda community.

d. Will 5G introduce vulnerabilities to privacy and security?

What is being claimed: 5G will introduce new vulnerabilities to personal privacy and security in Bermuda.

Advisory Panel evaluation: Although there are significant technological developments underway to defend 5G networks against unauthorized access with malicious intent, the Advisory Panel is not in a position to evaluate the privacy and security protections that will be implemented in a 5G rollout within Bermuda.

The Advisory Panel does not comment on the degree to which 5G would introduce privacy and security vulnerabilities to Bermuda.

5. Advisory Panel Recommendations

a. Lift Moratorium on 5G rollout and proceed with following recommendations

The Advisory Panel has performed an independent review of the Public Consultation inputs. The Advisory Panel notes that exposure of the community to radiation from 5G antennas is predicted to be considerably lower than the levels recommended as safe by the two major international exposure guidelines bodies (i.e. ICNIRP; IEEE ICES). The Advisory Panel also notes that there is no scientific basis for concluding that flora or fauna will be adversely affected by 5G. Accordingly, the 5G Safety Advisory Panel recommends that the Regulatory Authority of Bermuda lift the moratorium on 5G Rollout. This recommendation presupposes a set of comprehensive steps outlined in the following recommendations.

b. Establish a Communications and Interactive Consultation Program

As evidenced by the submissions to the RA, there are a range of issues related to 5G deployment that the community is concerned about. The Advisory Panel believes that it is important that the RA develop strong channels of communication with the community to both help convey what can be very complex scientific material ('Communications'), and to enable the community to help guide the 5G deployment and safety assurance process ('Interactive Consultation Program').

Communications:

The community has expressed strong concern regarding the perceived impact of 5G on health. The science underpinning the relationship between 5G and health is particularly complex, requiring detailed knowledge of a range of different scientific disciplines, including exposure assessment, biological, medical and public health science. This makes it difficult for the community to evaluate the potential for 5G to adversely affect health without relying heavily on opinion-based information. As a result, the Advisory Panel believes that it is very important to develop an effective communications strategy to assist the community in understanding what 5G is and whether it can cause adverse health effects. It is envisaged that this would include explanations of the following points:

- What is 5G, how does it differ from 3G and 4G, and how will it be implemented?
- How will 5G benefit the public and community?
- What are the official regulatory guidelines for maintaining healthy levels of RF-EMF exposure?
- How will the RA ensure that 5G stays within safe limits?
- How will the community be kept informed about it?
- Where is 5G currently being implemented in the international community?

Interactive Consultation Program:

Given that the Advisory Panel's recommendation to lift the embargo is based on the assumption that exposure from 5G infrastructure will not exceed the levels specified as safe by the international Standards bodies, it is important that the community can be confident that 5G exposures are indeed within such 'limits'. Although both modelling and measurement studies conducted internationally predict that 5G exposures would be far lower than the limits and thus pose no threat to health, it would be prudent to provide a means of verifying that this is the case in Bermuda. There are a variety of methods available to perform such verifications, each with relative strengths. The Advisory Panel believes that it is important to develop a system of verification through consultation with the community, so as to improve the relevance of the process to the needs of the community. It is recommended that the results of this verification process (described in more detail below) be made publically accessible.

c. Establish an Exposure Verification Program

In view of the public concerns expressed about the levels of RF-EMF exposure and compliance with regulatory standards, the Advisory Panel recommends a comprehensive exposure verification effort that includes both modeling ('Pre-Commissioning Exposure Verification') and in-situ RF field measurements ('Post-Commissioning Verification'). This two-pronged approach will enable the public to have immediate access to information pertaining to RF-EMF exposure levels in Bermuda where 5G installations are proposed. It will also enable the public to provide consultative inputs for specific modeling and measurements in areas of particular concern.

Pre-Commissioning Exposure Verification

Prior to the commissioning of new wireless base station networks, many countries require that the Carriers perform a comprehensive model-based analysis for each tower installation to ensure that they comply with international regulatory guidelines as a precondition for installation of the tower. The analysis uses an established methodology to provide an objective estimate of the maximum levels of electromagnetic radiation from a wireless base station or small cell. At a minimum, the modeled results indicate the maximum levels of RF-EMF exposure in:

- Volts per meter (V/m) – electric field component of the RF wave
- Watts per square meter (W/m²) – power density (rate of flow of RF energy per unit area)
- Percentage (%) of the official maximum regulated level

The model-based analysis must be updated with the proposal of any functional changes to be made to the base station equipment as part of a phased rollout. Additional modeling is also required prior to the addition of any new sites. The Advisory Panel recommends that the RA consider adopting this approach, guided by consultative inputs from the community, to provide a high degree of assurance that the RF-EMF exposure levels at each site are below the limits set by the current international Standards. The results of all analysis should be made publicly available, for example, via a website.

Post-Commissioning exposure verification

While models can provide reasonably accurate information about the level of RF-EMF from wireless infrastructure, the actual radiation emitted from antennas mounted on the mast of the cell sites may differ from the modeled levels due to the complex nature of the environment. Factors such as multipath scattering and the RF emission from other wireless sources are difficult or impractical to model. Typically, the variability in EM radiation levels is taken into consideration by ensuring a large margin in the initial installation of the cell site. However, real-time measurements of the EM radiation using a standardized testing methodology provides an accurate assessment of the actual EM field level and its fluctuation. Such assessments can help to increase trust of the public about the actual EM radiation levels. Moreover, it can help to effectively plan deployment of new future wireless infrastructure. Systems for real-time measurements and monitoring of RF-EMF have been implemented by several countries around the globe, including

the following:

- Performing of regular measurement surveys at multiple locations to confirm that RF-EMF levels are consistent with predictions;
- Establishment of a process to perform specific site surveys on request; and
- Continuous monitoring of RF radiation levels through the use of autonomous EM sensors to verify compliance with regulations.

The Advisory Panel recommends that the RA consider adopting one or more of these approaches, guided by consultative inputs from the community, to provide a high degree of assurance that the RF-EMF exposure levels are below the limits set by the current international guidelines. The results of all measurements should be made publicly available, for example, via a website.

d. Initiate a Periodic Independent Review Process of Health Effects of RF Radiation

In view of the evolving nature of the scientific study on health effects of RF-EMF, it is recommended that the RA consider initiating a periodic independent assessment to review and identify any new developments in the scientific consensus that could warrant a change to the regulated maximum levels of RF-EMF exposure in the community. This process should include a review of the most current international standards by an independent panel of subject matter experts.

6. References

- [1] "IEEE Standard for Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz," in IEEE Std C95.1-2019 (Revision of IEEE Std C95.1-2005/ Incorporates IEEE Std C95.1-2019/Cor 1-2019) , vol., no., pp.1-312, 4 Oct. 2019, doi: 10.1109/IEEESTD.2019.8859679.
- [2] International Commission on Non-Ionizing Radiation Protection. Guidelines for Limiting Exposure to Electromagnetic Fields (100 kHz to 300 GHz). Health Phys, 2020, 118(5):483-524.
- [3] https://www.ofcom.org.uk/_data/assets/pdf_file/0015/190005/emf-test-summary.pdf
- [4] https://www.bfs.de/DE/bfs/wissenschaft-forschung/ergebnisse/emf-umwelt/emf-umwelt_node.html
- [5] <https://www.viavisolutions.com/en-us/news-releases/command-5g-network-5g-available-378-cities-globally-according-viavi-report>

7. Appendix

Radiofrequency and 5G Safety Advisory Board Terms of Reference (TOR)



Bermuda Regulatory Authority

(The “Authority”)

Advisory Panel

Terms of Reference (“TOR”)

Constitution

The Advisory Panel was constituted on October 27, 2020, at a meeting of the Regulatory Authority Board of Commissioners and in accordance with section 35 of the Regulatory Authority Act 2011.

Purpose of the Advisory Panel

To provide a range of perspectives and expertise, in the area of Radiofrequency wireless technology and particularly for Fifth Generation (“5G”) technologies. The panel will offer independent advice and insight into policy direction emerging from reviewing information and public consultations. The Advisory Panel will be responsible for providing a final report to the Board of Commissioners regarding its work. It will not have decision-making authority.

Advisory Panel Member’s Roles and Responsibilities

- To undertake a review of current global practices, approaches, and public policies, without prejudice, regarding the general use of radiofrequency and Fifth Generation (“5G”) wireless technology, as defined by the 3rd Generation Partnership Project (“3GPP”) in particular,
- To address questions and concerns from local members of the Bermuda public and special interest groups,
- To engage in a factual discussion regarding the technology with internal and external stakeholders,
- To review the findings of the Regulatory Authority’s radio frequency study,
- To participate in advisory panel meetings via technology,
- To be available and prepared to attend public consultation activities related to the Advisory Panel’s purpose as necessary,
- To provide a recommendation to the Regulatory Authority’s Board of Commissioners on whether to remove or retain the current moratorium on the deployment of 5G in Bermuda, and

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- To provide a recommendation to the Regulatory Authority’s Board of Commissioners on the best way forward for Bermuda regarding Fifth Generation technology and possible solution to address major concerns raised by the public.

Project Timelines

- The projected timeframe for the project is October 2020 – February 2020.

Composition of the Advisory Panel

As per the Regulatory Authority Act 2011, section 35 (1), “ *The Authority may appoint advisory panels, consisting of knowledgeable persons from out the Authority, to provide information and recommendations regarding any matter within the competence of the Authority*”. – Appendix 1 of the TOR, page 6.

- a. The majority of the Advisory Panel members will be considered experts in the field of wireless technology, with in-depth knowledge regarding the impact(s) of radio frequency from a scientific and/or public health perspective.
- b. The Advisory Panel will be comprised of six (6) members, from the following countries:
 - i. Two (2) from Bermuda;
 - ii. Two (2) from Canada;
 - iii. One (1) from the United States of America (USA); and
 - iv. One (1) from Australia.
- c. The biography of each Advisory member will be posted on the Authority’s website.

Governance

Structure

- The Advisory Panel shall elect, from among its members, a chairman to direct its debates, act as its rapporteur, schedule and convene meetings, set meeting agendas and chair the meetings.

Meetings

- The meetings of the Advisory Panel shall normally be of a private nature. They shall not become public except by the express decision of the full Advisory Panel and with the approval of the Board of Commissioners. This does not include any online public consultation event(s).

Venue of Meetings

- Advisory Panel meetings will be held using online technology.

Sub-Committees or Joint Sub-Committees

- No sub-committees or joint sub-committees will be established under and as part of the Advisory Panel.

Findings and Recommendations

- The Advisory Panel will provide its findings and recommendations to the Chair of the Board of Commissioners and the Chief Executive, in the form of a written Preliminary Report and, subsequent to further public input, a Final Report.

Quorum

- The discussions of the Advisory Panel shall be valid:
 - (a) if at least two-thirds of its members are present; or
 - (b) unless otherwise authorized by the Board of Commissioners and the Chief Executive is present at the relevant Advisory Panel meeting.

Reporting

- The Board of Commissioners and Chief Executive shall receive minutes of all the Advisory Panel meetings.
- The Chairman of the Advisory Panel will make themselves available to the Board of Commissioners and the Chief Executive, to answer questions concerning Advisory Panel's work.

Frequency of Meetings

- The Advisory Panel shall meet at least bi-weekly over the duration of the engagement or as it is deemed necessary.

Notice of Meetings

- Meetings of the Advisory Panel shall be called by the Advisory Panel Chairman.
- Notice of each meeting will confirm the venue, time and date, and an agenda of the matters to be discussed shall be forwarded to each member within two (2) days prior to the date of the meeting. Any supporting papers shall be sent to each member of the Advisory Panel at the same time.

Administrative Support

- Regulatory Authority Staff will provide administrative support to the Advisory Panel Chairman and its members.

Advisory Panel Deliberations and Reports

- The Advisory Panel is encouraged to record any diversity of opinions and advise the Board of Commissioners of any dissenting opinions in its reports.
- The Advisory Panel will not provide recommendation(s) unless a quorum is present.
- Reports will be published on the RA's website after the Board of Commissioners approves the release of the content.
- The contents of the report will be non-attributed – there will be no reference to individual Advisory Panel members, unless explicitly requested.

Process for Resignation

- Advisory Panel members will provide 14 days' notice of their intent to resign from the panel.
- The resignation notice must be in writing and be addressed to the Chief Executive. The letter should state the effective date of the resignation.

Termination of an Advisory Panel Member

- The Board of Commissioners may terminate an Advisory Panel member for failure to act according to the Advisory Panel's TOR or for a breach of confidentiality.
- A termination notice will be in writing.

Dissolution of the Advisory Panel

- The Board of Commissioners may dissolve the Advisory Panel when the purpose of the panel is fulfilled or if the Board of Commissioners determines the Advisory Panel to be ineffective.

Confidentiality

- To support the Advisory Panel's ability to provide well-informed advice to the Board of Commissioners, panel members may receive and discuss at meetings, information that is confidential in nature. Therefore, each panel member will be required to sign and adhere to a confidentiality agreement before participating. The agreement prohibits the disclosure of any information received through participation in the Advisory Panel, including information received orally or in writing.

Indemnification

- The members of the Advisory Panel shall indemnify and hold harmless the RA and its officers, directors, agents and employees from and against any loss, liability, costs (including reasonable legal costs), damages or expenses directly or indirectly incurred, resulting from any breach (or failure to be true and correct as of the date hereof or at any time until the termination of the TOR) by the said member of the terms, representations, warranties or covenants of the TOR including any negligent or reckless act, omission or default, or any unauthorised act or omission in the execution of the TOR.
- The RA shall indemnify and hold harmless the members of the Advisory Panel from and against damages directly or indirectly incurred, resulting from or arising out of:
 - (a) Any breach (or failure to be true and correct as of the date hereof or at any time until the termination of the TOR) of any of the representations, warranties, covenants or agreements given or made by the RA in connection with the TOR; or
 - (b) Any action that is asserted by a third party that relates to the TOR (except, as above, to the extent due to, or arising from, any negligent or unauthorised act or omission of the relevant member of the Advisory Panel).

Working Language

- The working language of the Advisory Panel will be English.

Authority

- The Advisory Panel is expected to make recommendations and does not have the authority to make decisions on behalf of the RA.
- The recommendation(s) of the Advisory Panel should solely be presented in writing.

Remuneration

Advisory Panel members will be remunerated \$150 US for each meeting attended. The remuneration can be paid to an advisory member's registered Bermuda charity of choice.

Communication Protocol

The Advisory Panel Chairman will be the panel spokesperson and, with guidance from the CE, may engage the public and/or media as required.

Transparency

- Transparency will be adhered to through posting the following Advisory Panel information on the RA's website: e.g. agendas, names, and biographical information.
- The RA will also publish on its website the Final Report, documenting the recommendation(s) of the Advisory Panel, how the recommendation(s) was/were considered and any resulting impacts on the recommendation(s).

Public Access to Information (PATI)

- Documents, emails, working files, minutes, reports, etc... of the Advisory Panel, are subject to the Public Access to Information Act 2010.

Appendix 1 – Regulatory Authority Act 2011, Section 35, Advisory Panels

Advisory panels

Section 35

- (1) The Authority may appoint advisory panels, consisting of knowledgeable persons from outside the Authority, to provide information and recommendations regarding any matter within the competence of the Authority.
- (2) In any case in which the Authority appoints an advisory panel, the Authority shall publish on its official website a statement setting out—
 - (a) the purpose for which the panel has been established;
 - (b) the membership of the panel, including a brief statement setting out the current employment or other significant information regarding each member;
 - (c) any financial, staffing or other resources that the Authority will provide to the panel;
 - (d) any procedures to be used, or deliverables to be provided, by the panel; and
 - (e) the duration of time in which the panel will remain in existence.
- (3) In considering candidates for appointments to any advisory panel, the Authority shall give due regard to—
 - (a) the qualifications and experience of the candidates; and
 - (b) the need to ensure representation of diverse views.
- (4) Each advisory panel shall provide a report to the Authority regarding its work, at such times as the Authority may specify, which the Authority shall publish on its official website.